BROADCOM®

Brocade® Fabric OS® Command Reference Manual, 8.2.x

Reference Manual
22 June 2021

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Chapter 1: Introduction

1.1 About This Document

This *Brocade Fabric OS Command Reference Manual* details the commands that can be issued on devices that support Fabric OS® 8.2.x. This manual documents all officially supported Fabric OS commands. Any commands not listed in this command reference are not supported and may be subject to removal without notification.

1.2 Supported Hardware

The following hardware platforms are supported by Brocade Fabric OS 8.2.x.

1.2.1 Brocade Gen 5 (16G) Fixed-Port Switches

- Brocade 6505 Switch
- Brocade 6510 Switch
- Brocade 6520 Switch
- Brocade M6505 blade server SAN I/O module
- Brocade 6542 blade server SAN I/O module
- Brocade 6543 blade server SAN I/O module
- Brocade 6545 blade server SAN I/O module
- Brocade 6546 blade server SAN I/O module
- Brocade 6547 blade server SAN I/O module
- Brocade 6548 blade server SAN I/O module
- Brocade 6558 blade server SAN I/O module
- Brocade 7840 Extension Switch

1.2.2 Brocade Gen 5 (16G) DCX Directors

NOTE: For ease of reference, Brocade chassis-based storage systems are standardizing on the term *director*. The legacy term *backbone* can be used interchangeably with the term *director*.

- Brocade DCX 8510-4 Director
- Brocade DCX 8510-8 Director

1.2.3 Brocade Gen 6 (32G) Fixed-Port Switches

- Brocade G610 Switch
- Brocade G620 Switch
- Brocade G630 Switch
- Brocade 7810 Extension Switch

1.2.4 Brocade Gen 6 (32G) X6 Directors

- Brocade X6-4 Director
- Brocade X6-8 Director

1.3 CLI Usage Conventions

- Some Fabric OS show commands display certain switch or fabric components in three-digit decimal numbers, for example, 003. When you use these numeric identifiers as input to other commands, you must remove the leading zeros; otherwise the commands will fail or generate incorrect results. Adding zeros to any decimal number in command input will cause that number to be treated as an octal number.
- The entire command line (both commands and options) is case-sensitive. Selected command names and options may also support Java-style capitalization. Java-style capitalization means that while `bannershow` and `bannerShow` will both work, `BANNERSHOW` and `BannerShow` will not work. Command options, on the other hand, are strictly case-sensitive, and therefore only lower-case or Java-style capitalization can be entered depending on each option. This means that while the `-USB` option of the `configDownload` command works, the `-usb` option will not work. Refer to the command syntax for explicit instructions on supported capitalization for each command and its options.
- When command examples in this guide show user input enclosed in quotation marks, the quotation marks are required. Example: `zonecreate "zonename"` requires that the value for zonename be in quotation marks.
- Automatic page breaks in CLI command output are being phased out. Use the `more` option to display command output with page breaks: `command | more`. Do not use the `more` option in conjunction with help pages. Issuing `help command | more` displays a "`no manual entry for command`" message.

1.4 Contacting Technical Support for Your Brocade® Product

For product support information and the latest information on contacting the Technical Assistance Center, go to https://www.broadcom.com/support/fibre-channel-networking/. If you have purchased Brocade® product support directly from Broadcom, use one of the following methods to contact the Technical Assistance Center 24x7.

Online	Telephone
For nonurgent issues, the preferred method is to log in to myBroadcom at https://www.broadcom.com/mybroadcom. (You must initially register to gain access to the Customer Support Portal.) Once there, select **Customer Support Portal > Support Portal**. You will now be able to navigate to the following sites:	Required for Severity 1 (critical) issues:
	Please call Fibre Channel Networking Global Support at one of the numbers listed at https://www.broadcom.com/support/fibre-channelnetworking/.
- **Knowledge Search**: Clicking the top-right magnifying glass brings up a search bar.	
- **Case Management**: The legacy MyBrocade case management tool (MyCases) has been replaced with the Fibre Channel Networking case management tool.	
- **DocSafe**: You can download software and documentation.	
- **Other Resources**: Licensing Portal (top), SAN Health (top and bottom), Communities (top), Education (top).	

If you purchased Brocade product support from a Broadcom OEM/solution provider, contact your OEM/solution provider for all your product support needs.

- OEM/solution providers are trained and certified by Broadcom to support Brocade products.
- Broadcom provides backline support for issues that cannot be resolved by the OEM/solution provider.
- Brocade Supplemental Support augments your existing OEM support contract, providing direct access to Brocade expertise. For more information, contact Broadcom or your OEM.
- For questions regarding service levels and response times, contact your OEM/solution provider.

1.5 Document Feedback

Quality is our first concern. We have made every effort to ensure the accuracy and completeness of this document. However, if you find an error or an omission or if you think that a topic needs further development, we want to hear from you. Send your feedback to documentation.pdl@broadcom.com. Provide the publication title, publication number, topic heading, page number, and as much detail as possible.

Chapter 2: Using Fabric OS Commands

2.1 Using the Command Line Interface

The Fabric OS command line interface (CLI), accessed via Telnet, SSH, or a serial console, provides full management capability on a Brocade switch. The Fabric OS CLI enables an administrator to monitor and manage individual switches, ports, and entire fabrics from a standard workstation. Selected commands must be issued from a secure Telnet or SSH session.

Access is controlled by a switch-level password for each access level. The commands available through the CLI are based on the user's login role and the license keys used to unlock certain features.

The Fabric OS CLI provides the following capabilities:

- Access to the full range of Fabric OS features according to the license keys installed.
- Assistance with configuration, monitoring, dynamic provisioning, and daily management of every aspect of storage area networks (SANs).
- A deeper view of the tasks involved in managing a Brocade SAN.
- Identification, isolation, and management of SAN events across every switch in the fabric.
- Management of Brocade licenses.

The documentation for each command includes a synopsis of its syntax, a description of command use, and a set of examples. The same information can be accessed by issuing the `help` command followed by the command name on a Brocade switch or director. This command displays the help page for the specified command. For example, to display the help page for `portCfg`, enter:

```
switch:admin> help portCfg
```

2.2 Understanding Role-Based Access Control

Fabric OS implements Role-Based Access Control (RBAC) to control access to all Fabric OS operations. Eight predefined roles are supported, as described in Table 1. These predefined role definitions are guided by perceived common operational situations and the operations and effects that a role is permitted to have on a fabric and individual fabric elements.

Table 1: Role Definitions

Role Name	Definition
Admin	All administrative tasks, including encryption and chassis commands.
BasicSwitchAdmin	A subset of administrative tasks, typically of a more limited scope and effect.
FabricAdmin	Administrative use excluding user management.
Operator	A subset of administrative tasks typically required for routine maintenance operations.
SecurityAdmin	Administrative use including admin, encryption, security, user management, and zoning.
SwitchAdmin	Administrative use excluding security, user management, and zoning.
User	Nonadministrative use, such as monitoring system activity. In Fabric OS 7.4.x and later, the user account gains access to Fabric ID 128. This is the default logical fabric after a firmware upgrade.
ZoneAdmin	Zone management only.

In addition to these predefined roles, Fabric OS 7.4.x and later provide support for creating user-defined roles. See the `roleConfig` command for more information.

NOTE: While executing any command such as `classConfig`, the `OperandPresent` string in the options column indicates that an option must be present with the command for successful execution.

Additional command restrictions apply depending on whether Virtual Fabrics is enabled in a fabric. See "Command Availability" on page 1523.

2.3 Understanding Virtual Fabric Restrictions

All Fabric OS commands are subject to additional RBAC enforcement with regard to Virtual Fabric contexts and switch types. Commands can be issued in one or more of the contexts described in Table 2. Issuing of chassis commands requires chassis permissions.

Table 2: Virtual Fabric Contexts

Context Type	Definition
Switch context	Command applies to the current logical switch only or to a specified logical switch.
Chassis context	Command applies to the chassis on which it is issued.
Switch and chassis context	Command can be issued in a logical switch context or in a chassis context.
Disallowed	Command is not supported in Virtual Fabric mode.

Switch commands are further defined by the switch type restrictions described in Table 3. Switch type restrictions are not applicable to commands that require chassis permissions.

Table 3: Switch Types

Switch Type	Definition
All Switches	Command can be issued in any switch context.
Base Switch Only	Command can be issued only on the base switch.
Default Switch Only	Command can be issued only on the default switch.
N/A	Command is a chassis command or is not supported in Virtual Fabric mode.

In a Virtual Fabric environment where contexts are enforced, the following Virtual Fabric restrictions apply to the RBAC permissions specified in Table 1. See the `userConfig` command for more information on configuring user account access permissions in a Virtual Fabric environment.

- Any given role is allowed to issue all switch commands to which the role is authorized in the account's home context. The default home context is the default logical fabric FID 128.
- You can change an account's home context to a specified FID and the account permissions to access additional logical switches specified in the user's fabric ID list.
- Accounts with user or admin permissions can be granted chassis permissions. A user account with the chassis role can issue chassis-level commands at the user RBAC access level. An admin account with the chassis role can issue chassis-level commands at the admin RBAC access level.

Use the `classConfig --showcli` command to look up the Virtual Fabrics context for a specified command. See "Command Availability" on page 1523 for a complete listing of Virtual Fabric restrictions that apply to the commands included in this manual.

2.4 Determining the RBAC Permissions for a Specific Command

To determine the RBAC permissions for a specific command, use the `classconfig` command.

1. Enter the `classconfig --showcli` command for a specified command.

    The command displays the RBAC class and access permissions for each of the command options. The command passed as an argument must use only lowercase letters. Note that options for a single command option can belong to different classes.

2. Enter the `classconfig --showroles` command and specify the RBAC class of the command option that you want to look up.

    The command displays the default roles and the permissions to access commands in the specified RBAC class.

The following example shows how you can obtain permission information for the `zone` command. Suppose that you want to know if a user with the SwitchAdmin role can create a zone. You issue the `classconfig --showcli` command for the `zone` command, which shows that the `zone --add` command belongs to the RBAC class "Zoning." You then issue the `classconfig --showroles` command for the Zoning RBAC class. The output shows that the SwitchAdmin role has "Observe" (O) permissions only for any command in the Zoning class. This means that a user with the SwitchAdmin role is not allowed to create zones. To allow this user to create a zone, you must change the user's access to any of the roles that have "Observe and Modify" (OM) access. Use the `userConfig` command to change the user's role, or use the `roleConfig` command to create a custom role.

```
switch:admin> classconfig --showcli zone
CLI     Option         Permission RBAC Class     Context
-------------------------------------------------------
zone    Killall        OM         Debug          vf
zone    evlogclear     OM         Debug          vf
zone    evlogshow      O          Debug          vf
zone    evlogtoggle    OM         Debug          vf
zone    mergeshow      O          Debug          vf
zone    stateshow      O          Debug          vf
zone    activate       OM         Zoning         vf
zone    add            OM         Zoning         vf
zone    copy           OM         Zoning         vf
zone    create         OM         Zoning         vf
zone    deactivate     OM         Zoning         vf
(output truncated)

switch:admin> classconfig --showroles zoning
Roles that have access to the RBAC Class 'zoning' are:

  Role Name                Permission
  ---------                ----------
  User                     O
  Admin                    OM
  Factory                  OM
  Root                     OM
  Operator                 O
  SwitchAdmin              O
  ZoneAdmin                OM
  FabricAdmin              OM
  BasicSwitchAdmin         O
  SecurityAdmin            O
```

NOTE: If a role name does not appear in the list, it indicates that the role is not available to the specified class and that
associated commands in that class are restricted and cannot be issued in that role.

2.5 Shell Function Commands

The following commands are used by Fabric OS to support certain shell functions. Users should not run these commands
directly.

- commandComplete
- saveHistory
- saveHistoryOnReboot

The following commands are used for administrative functions and will fail when run directly:

- export_switch
- set_console_switch
- set_switch_inst

Chapter 3: Fabric OS Commands

aaaConfig

Manages RADIUS, LDAP, and TACACS+ configuration information.

Synopsis

```
aaaconfig
aaaconfig --show [-npage] [-conf radius | ldap | tacacs+]
aaaconfig --add | --change server -conf radius | ldap | tacacs+
     [-p port] [-d domain] [-t timeout] [-s secret]
     [-a chap | pap | peap-mschapv2] [-e -encr_type none | aes256]
     [-tls_mode starttls | ldaps]
aaaconfig --remove server -conf radius | ldap | tacacs+
aaaconfig --move server -conf radius | ldap | tacacs+ to_position
aaaconfig --authspec "aaa1[;aaa2]" [-backup]] [-nologout]
     [-logpriauth yes | no]
aaaconfig --help
```

Description

Use this command to manage the RADIUS, LDAP, and TACACS+ server configuration for the Authentication, Authorization, and Accounting (AAA) services. Use this command to display, add, remove, change, enable, or disable the RADIUS, LDAP, or TACACS+ configuration.

Brocade switches use a local and a remote authentication mechanism for validating a login. Supported authentication protocols include Password Authentication Protocol (PAP), Challenge-Handshake Authentication Protocol (CHAP), and Protected Extensible Authentication Protocol (PEAP). Also supported is Lightweight Directory Access Protocol (LDAP) authentication against Active Directory for user authentication and authorization.

RADIUS, LDAP, or TACACS+ servers are contacted in the order in which they appear in the configuration list. The first server that returns authentication success or failure causes the authentication request to succeed or fail. If no response is received within the specified timeout, the next RADIUS, LDAP, or TACACS+ server in the list is contacted. An event entry is logged if all RADIUS, LDAP, or TACACS+ servers fail to respond.

When the command succeeds, it triggers an event log (the Fabric OS error log) to indicate that a server is added, removed, or modified. Refer to the *Brocade Fabric OS Message Reference Manual* for specific details.

There are two modes of operation in LDAP authentication: FIPS mode and non-FIPS mode. However, there is no option to configure LDAP while the switch is in FIPS mode. The LDAP client checks if FIPS mode is set on the switch and uses FIPS-compliant TLS ciphers for LDAP. If FIPS mode is not set and the ADir server is configured for FIPS ciphers, it uses FIPS-compliant ciphers.

Configuration changes are persistently saved and take effect with the next AAA request. The configuration applies to all switch instances in a platform that supports multiple switch domains.

Notes

Customers can use centralized RADIUS servers to manage AAA services for a switch, as defined in the RFC 2865 RADIUS specification.

This command can be issued when logged in through the console, Telnet, or an SSH connection.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

server

Specifies an IP address or a server name in dotted-decimal notation. IPv6 addresses are supported. If a name is used, a DNS entry must be correctly configured for the server. If the specified server IP address or name already exists in the current configuration, the command fails and generates an error. However, the command does not validate the server name against the IP address in the configuration. Make sure to avoid duplicate configuration of the same server, one specified by the name, and another specified by the IP address.

--show

Displays the current AAA service configuration.

--add | --change *server* [*options*]

Adds or modifies a RADIUS, LDAP, or TACACS+ server. The **--add** option appends the specified server to the end of the current configuration list. A maximum of five servers are supported for each authentication type. The **--change** option modifies the specified server configuration to use the new arguments. The server must be one of the IP addresses or names shown in the current configuration.

The following *options* are supported:

-conf radius | ldap | tacacs+

Specifies the server configuration as RADIUS, LDAP, or TACACS+. This operand is required.

The following operands are optional:

-p *port*

Specifies the RADIUS, LDAP, or TACACS+ server port number. The supported range is 1 to 65535. The default port is 1812 for RADIUS authentication, 1813 for RADIUS accounting, and 389 for LDAP authentication. The default port is 49 for TACACS+ authentication. This operand is optional. If no port is specified, the default is used.

-t *timeout*

> Specifies the response timeout for the RADIUS, LDAP, or TACACS+ server. The supported range is 1 to 30 seconds. The default is 3 seconds. This operand is optional. If no timeout is specified, the default is used.

-d *domain*

> Specifies the Windows domain name for the LDAP server, for example, brocade.com. This option is valid only with the **-conf ldap** option. This operand is required.

-s *secret*

> Specifies a common secret between the switch and the RADIUS or TACACS+ server. The secret must be 8 to 40 characters for a RADIUS server and 1 to 40 characters for TACACS+ server. This option is valid only with the **-conf radius** or **-conf tacacs+** options, and it is optional. The default value is **sharedsecret**. The secret can include any printable ASCII character from 0x21 to 0x7E. Spaces are not allowed.

-a

> Specifies the remote authentication protocol for the RADIUS or TACACS+ server. This operand is valid with the **-conf radius** or **-conf tacacs+** options, and it is optional. The default value for this operand is **CHAP**.
>
> Note that the distinction between protocols is only applicable to the packets between a system and the RADIUS or TACACS+ server. To authenticate a user to the system, a password is always used.
>
> Valid protocols are one of the following:

pap

> Password Authentication Protocol.

chap

> Challenge Handshake Authentication Protocol.

peap-mschapv2

> Protected Extensible Authentication Protocol. This is applicable only to RADIUS configuration. The combination of **peap-mschapv2** and IPv6 causes RADIUS authentication to be rejected. PEAP with IPv4 succeeds.

-e *encr_type*

> Specifies the encryption algorithm. This is applicable to both RADIUS and TACACS+ configurations. Valid values include the following:

none

> >No encryption, stored in plain text.

aes256

AES-256 algorithm.

-tls_mode

Specifies the mode of connection with the LDAP server. Valid options include the following:

starttls

Initiates an LDAP connection with StartTLS. The default port is 389.

ldaps

Initiates an LDAPS connection. The default port is 636.

--remove *server*

Removes the specified server from the configuration. The server must match one of the IP addresses or names shown in the current configuration. The following operand is required:

-conf radius | ldap | tacacs+

Specifies the server configuration as RADIUS, LDAP, or TACACS+. If the server is enabled, the command does not allow the last server to be removed from the configuration list. RADIUS, LDAP, or TACACS+ must first be disabled before the last server of the specified type may be removed.

--move *server option*

Moves the specified server from the current position in a RADIUS, LDAP, or TACACS+ configuration list to the specified position. If the specified position is the same as the current position, no change occurs. Valid options include the following:

-conf radius | ldap | tacacs+

Specifies the server configuration as RADIUS, LDAP, or TACACS+. This operand is required.

to_position

Specifies the new position for the server. The value for *to_position* is an integer and must be within the range of server positions in the current configuration. Use the **--show** option to determine current server positions. This operand is required.

--authspec "*aaa1***[;***aaa2***]" [-backup] [-nologout]**

Replaces the configuration with the specified AAA service. Each service can be specified only once in the list, for example, "radius; local; radius" is invalid. No edit option is provided. The **--authspec** option takes as an argument a semicolon-separated list of AAA services. Services must be enclosed in double quotation marks.

The following AAA services and service pairs are valid:

"local"

Default setting. Authenticates the user against the local database only. If the password does not match or the user is not defined, the login fails.

"radius"

When "radius" is specified, the first RADIUS server is contacted. If the RADIUS server is not reachable, the next RADIUS server is contacted. If the authentication fails, the authentication process does not check for the next server in the sequence.

"ldap"

When "ldap" is specified, the first Active Directory (AD) server is contacted. If the AD server is not reachable, the next AD server is contacted. If the authentication fails, the authentication process does not check for the next server in the sequence.

"tacacs+"

When "tacacs+" is specified, the first Active Directory (AD) server is contacted. If the AD server is not reachable, the next AD server is contacted. If the authentication fails, the authentication process does not check for the next server in the sequence.

"radius;local"

Enables the current RADIUS configuration as the primary AAA service and the switch-local database as the secondary AAA service. If "radius" and "local" are specified, and if the RADIUS servers are reachable and the user credentials are correct, the user authentication succeeds. If the user provides credentials from the switch database, the RADIUS authentication fails but login succeeds through the switch database.

"ldap;local"

Enables the current LDAP configuration as the primary AAA service and the switch-local database as the secondary AAA service. If "ldap" and "local" are specified, and if the AD servers are reachable and the user credentials are correct, the user authentication succeeds. If the user provides credentials from the switch database, AD authentication fails but login still succeeds through the switch database.

"tacacs+;local"

Enables the current TACACS+ configuration as the primary AAA service and the switch-local database as the secondary AAA service. If "tacacs+" and "local" are specified, and if the AD servers are reachable and the user credentials are correct, the user authentication succeeds. If the user provides credentials from the switch database, AD authentication fails but login still succeeds through the switch database.

-backup

> For use with the "radius;local", "ldap;local", and "tacacs+;local" options only. The backup option states to try the secondary AAA service only if none of the primary AAA services are available.

-nologout

> If **-nologout** is not specified, a change in the authentication mechanism may result in the termination of existing sessions. All existing sessions are terminated if the new authentication mechanism is one of the following: RADIUS only, LDAP only, TACACS+ only, or local. If **-nologout** is specified, there will be no effect on the existing sessions regardless of the chosen authentication mechanism.

-logpriauth yes | no

> Suppresses (no) or displays (yes) a log message for authentication failure by the primary AAA service if authentication is to be done through secondary AAA service, which is the local switch database. By default, primary authentication failure logs are displayed.

--help

> Displays the command usage.

Examples

To display the current RADIUS, LDAP, and TACACS+ configurations:

```
switch:admin> aaaconfig --show
RADIUS CONFIGURATIONS
 =====================
 Position Server      Port  Timeout(s) Auth-Protocol

 1   192.168.233.48  1812  3        CHAP
 2   192.168.233.44  1812  3        CHAP
 3   radserver       1812  5        CHAP

LDAP CONFIGURATIONS
===================
LDAP configuration does not exist.

TACACS+ CONFIGURATIONS
======================
TACACS+ configuration does not exist.

 Primary AAA Service: Switch database
 Secondary AAA Service: None
 Log Primary Authentication Status: yes
```

To move the RADIUS server "radserver" from position 3 to position 1:

```
switch:admin> aaaconfig --move radserver -conf radius 1
```

To change LDAP server configuration:

```
switch:admin> aaaconfig --change 192.168.233.48  \
-conf ldap -p 3002 -t 1
```

To add LDAP server to the configuration:

```
switch:admin> aaaconfig --add 194.72.68.335  \
-conf ldap -p 3002 -d brocade.com -t 1
```

To replace the AAA service with backup option:

```
 switch:admin> aaaconfig --authspec "ldap;local" -backup
```

To change the authentication mechanism with the no logout provision:

```
switch:admin> aaaconfig --authspec radius -nologout
switch:admin> aaaconfig --show
RADIUS CONFIGURATIONS
=====================

Position      : 1
Server        : 172.20.1.68
Port          : 1812
Timeout(s)    : 3
Auth-Protocol: PEAP-MSCHAPv2
Encryption level  : AES256

LDAP CONFIGURATIONS
===================
LDAP configuration does not exist.

TACACS+ CONFIGURATIONS
=====================
TACACS+ configuration does not exist.

Primary AAA Service: RADIUS
Secondary AAA Service: None
Log Primary Authentication Status: yes
```

To add a TACACS+ server to the configuration:

```
switch:admin> aaaconfig --add 10.17.56.56 -conf tacacs+ \
-s "sharedkey" -p 49 -t 5 -a pap
Encryption type is currently set to none. Do you want to set encryption
type to aes256? (y/n): y
switch:admin> aaaconfig --authspec tacacs+
switch:admin> aaaconfig --show
RADIUS CONFIGURATIONS
=====================
RADIUS configuration does not exist.

LDAP CONFIGURATIONS
===================
LDAP configuration does not exist.

TACACS+ CONFIGURATIONS
=====================
Position      : 1
```

```
Server        : 10.17.56.56
Port          : 49
Secret        : 5
Timeout(s)    : 5
Auth-Protocol: PAP
Encryption level  : AES256

Primary AAA Service: TACACS+
Secondary AAA Service: None
Log Primary Authentication Status: yes
```

To suppress log of primary authentication status:

```
switch:admin> aaaconfig --authspec "tacacs+;local" -logpriauth no
Log for primary authentication status configured to no
AUTH configuration already enabled
```

To display log of primary authentication status:

```
switch:admin> aaaconfig --show
RADIUS CONFIGURATIONS
=====================

Position        : 1
Server          : 1.2.3.4
Port            : 1812
Secret          : ********
Timeout(s)      : 3
Auth-Protocol   : CHAP
Encryption level  : AES256

LDAP CONFIGURATIONS
===================

Position        : 1
Server          : 10.38.37.183
Port            : 389
Domain          : la12security.brocade.com
Timeout(s)      : 3

TACACS+ CONFIGURATIONS
======================

Position        : 1
Server          : 1.1.1.1
Port            : 49
Secret          : ********
Timeout(s)      : 3
Auth-Protocol   : CHAP
Encryption level  : AES256
Primary AAA Service: TACACS+
Secondary AAA Service: Switch database
Log Primary Authentication Status: no
```

To add LDAP TLS mode:

```
switch:admin> aaaconfig --add 9.10.11.12 -conf ldap
-tls_mode ldaps -p 636

2020/06/19-23:47:41, [SEC-1184], 3455, FID 128, INFO, sw0,
                  LDAP configuration change, action ADD, server ID
9.10.11.12.

switch:admin> aaaconfig --show -conf ldap

LDAP CONFIGURATIONS
===================

Position               : 1
Server                 : 1.2.3.4
Port                   : 389
Domain                 : local
Timeout(s)             : 3
LDAP TLS Mode          : STARTTLS

Position               : 2
Server                 : 5.6.7.8
Port                   : 389
Domain                 : local
Timeout(s)             : 3
LDAP TLS Mode          : STARTTLS

Position               : 3
Server                 : 9.10.11.12
Port                   : 636
Domain                 : local
Timeout(s)             : 3
LDAP TLS Mode          : LDAPS

Primary AAA Service: LDAP
Secondary AAA Service: Switch database
Log Primary Authentication Status: Yes
```

See Also

None

ag

Enables Access Gateway (AG) and manages AG-specific operations.

Synopsis

```
ag --help
ag --show
ag --modeshow | --modeenable | --modedisable
ag [--policyenable | --policydisable] policy
ag --policyshow
ag --mapshow [N_Port]
ag [--mapset | --mapadd | --mapdel] N_Port "[F_Port1; F_Port2;...]"
ag [--staticadd | --staticdel ] N_Port "[F_Port1; F_Port2;...]"
ag --pgshow [pgid]
ag --pgcreate pgid "N_Port1 [;N_Port2;...]" [-n pgname]
    [-m "lb; mfnm"]
ag [--pgadd | --pgdel] pgid "N_Port1 [; N_Port2;...]"
ag --pgrename pgid newname
ag --pgremove pgid
ag [--pgmapadd | --pgmapdel] pgid "F_Port1 [; F_Port2;...]"
ag [--pgsetmodes | --pgdelmodes] pgid "mfnm;lb"
ag --pgfnmtov [new_tov]
ag [--failoverenable | --failoverdisable] [N_Port | -pg pgid]
ag --failovershow [N_Port]
ag [--failbackenable | --failbackdisable] [N_Port | -pg pgid]
ag --failbackshow [N_Port]
ag --failbackforce [N_Port | -pg pgid | -all]
ag [--prefset | --prefdel] "F_Port [;F_Port2;...]" N_Port
ag --prefshow
ag [--adsset | --adsadd | --adsdel] "F_Port [;F_Port2;...]"
    "WWN [;WWN2;...]"
ag --adsshow
ag --persistentalpaenable [1 | ON] | [0 | OFF] mode
ag --printalpamap F_Port
ag --deletepwwnfromdb PWWN
ag --clearalpamap F_Port
ag --addwwnmapping N_Port "WWN [;WWN2;...]" | --all
ag --delwwnmapping N_Port "WWN [;WWN2;...]" | --all
ag --addwwnpgmapping Port_Group "WWN [;WWN2;...]" | --all
ag --delwwnpgmapping Port_Group "WWN [;WWN2;...]" | --all
ag --addwwnfailovermapping N_Port "WWN [;WWN2;...]" | --all
ag --delwwnfailovermapping N_Port "WWN [;WWN2;...]" | --all
ag --wwnmappingenable "WWN [;WWN2;...]" | --all
ag --wwnmappingdisable "WWN [;WWN2;...]" | --all
ag --wwnmapshow
ag --reliabilitycounterset
ag --reliabilitycountershow
ag --reliabilityshow [N_Port]
ag --backupmappingsave N_Port
ag --backupmappingdel N_Port
ag --backupmappingshow N_Port
```

Description

Use this command to perform the following Access Gateway management functions:

- Enable or disable Access Gateway mode.

- Display the current configuration and state of AG.

- Configure and display F_Port to N_Port mappings.

- Configure and display N_Port failover and failback policies.

- Configure and display the Port Group policy.

- Create or remove a port group.

- Get or set the timeout value for fabric name monitoring.

- Display port groups and member N_Ports.

- Add or delete N_Ports in a port group.

- Display all policies and their status.

- Enable or disable the auto port configuration (APC) policy.

- Enable or disable the preferred secondary N_Port policy.

- Enable, disable, and manage the advanced device security (ADS) policy.

- Manage persistent ALPA mode.

- Manage device WWN to N_Port mappings.

- Manage device WWN to N_Port group mappings.

- Manage device WWN failover to N_Ports configured as preferred failover ports.

- Enable or disable device WWN mappings.

- Configure the reliability limit for the preferred N_Port.

- Save the configured F_Ports, static F_Ports for the given N_Port, and F_Ports for which the given N_Port is a preferred one.

- Delete the backup mappings for the given N_Port, if any.

- Display the saved mappings for the given N_Port, if any.

AG configuration changes are saved persistently as configuration keys. Use the **portCfgNPort** command to set a port as an N_Port.

This command supports multiple configurations for mapping device logins to N_Ports for the purposes of load balancing and redistribution in the event of a fabric change. If multiple mappings are configured, the system considers the available mappings in a fixed order of priority to determine which of the available N_Ports should be assigned to the login request. The first eligible mapping is chosen in the order specified below.

1) Device WWN to N_Port

2) Device WWN to N_Port group

3)   Automatic device WWN load balancing

4)   F_Port to N_Port

5)   F_Port to N_Port group

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

AG is supported only on selected Brocade hardware platforms. Refer to the *Brocade Fabric OS Access Gateway Administration Guide* for hardware support and AG configuration procedures.

In non-AG mode, only two actions are available: **--modeenable** and**--modeshow**.

The **--backupmappingsave**, **--backupmappingdel**, and **--backupmappingshow** commands can be issued if the auto policy is disabled.

This command is not supported on the Brocade Analytics Monitoring Platform.

Operands

This command has the following operands:

--help

Displays the command usage.

--show

Displays the current configuration of the Access Gateway. This includes all N_Ports and F_Ports that are currently online, failover and failback settings, and any online F_Ports that are currently mapped to N_Ports. Failover and failback policies are displayed as enabled (1) or disabled (0).

--modeshow

Displays the current Access Gateway operating mode of the switch as either enabled or disabled.

--modeenable

Enables Access Gateway mode on a switch. Long-distance mode settings should be cleared for all ports on the NPIV edge switch to which the AG is connected. Otherwise, the NPIV switch port displays the long-distance port type along with the F_Port.

--modedisable

Disables Access Gateway mode on a switch. After AG mode is disabled, the switch reboots automatically and comes online with default zone access set to No Access. In order to merge the switch with a fabric, set the default zone to All Access and disable/ enable the E_Port.

--policyshow

Displays the supported AG port policies and their status as either enabled or disabled. AG supports four types of policies:

- Port Grouping (pg) policy: This policy manages failover of an F_Port to a set of related N_Ports in a port group.

- Auto Port Configuration (auto) policy: When this policy is enabled, the AG-enabled switch automatically detects available ports and maps F_Ports to N_Ports. Auto port configuration is disabled by default.

- Advanced Device Security (ADS) policy. This policy restricts access to the fabric at the AG level to a set of authorized devices. Unauthorized access is rejected, and the system logs a RASLOG message. You can configure the list of allowed devices for each F_Port by specifying their port WWN. See the **ag --ads*** commands for information on managing advanced device security. The ADS policy is disabled by default, which means that all devices can connect to the switch.

- WWN Based Load Balancing policy: This policy routes device logins to the least loaded port in the port group to which they are mapped.

--policyenable *policy*

Enables the specified port policy for the Access Gateway. When a new policy is enabled, all port-related configuration settings are lost. Use the **configUpload** command to save the current port configuration. Valid policies include the following:

pg

Enables the Port Grouping policy. A default port group "pg0" is created, which includes all configured N_Ports assigned to the policy. Enabling the Port Grouping policy disables the Get Fabric Name policy.

auto

Enables the Auto Port Configuration policy. When enabled, this policy applies to all ports on the switch. All F_Port to N_Port mappings and port group configurations are ignored.

ads

Enables the Advanced Device Security (ADS) policy. When enabled, this policy applies to all ports on the switch. By default all devices have access to the fabric on all ports.

wwnloadbalance

Enables the device WWN Based Load Balancing policy. When this policy is enabled, device logins are sent to the least loaded port in the port group to which they are mapped. These devices are displayed with **ag --wwnmapshow** as dynamic device mappings. The Port Grouping policy must be enabled before you can enable the WWN Based Load Balancing policy.

--policydisable *policy*

> Disables the specified policy for the Access Gateway. When a policy is disabled, all port-related configuration settings are lost. Use the **configUpload** command to save the current port configuration. Valid policies include the following:

pg

> Disables the Port Grouping policy. All port group configurations are deleted. Disabling the Port Grouping policy enables the Get Fabric Name policy.

auto

> Disables the Auto Port Configuration policy and deletes all associated configuration settings.

ads

> Disables the Advanced Device Security (ADS) policy and deletes all lists of allowed device WWNs.

wwnloadbalance

> Disables the device WWN Based Load Balancing policy.

--mapshow [*N_Port* | *device_WWN***]**

> Displays the F_Ports that are configured and currently mapped to a given "primary" N_Port. Optionally specify an N_Port to display the F_Ports that are mapped to the specified N_Port only, or specify a device WWN to display the N_Port to which the device WWN is mapped. Failover and failback policies are displayed as enabled (1) or disabled (0).

--mapset *N_Port* **"[***F_Port1***;***F_Port2***;...]"**

> Maps a set of F_Ports to a specified "primary" N_Port, forcing all traffic from the F_Ports to be routed through this N_Port to the attached fabric. An F_Port cannot be mapped to more than one primary N_Port at any given time. F_Ports are enabled only if the N_Port is online. This command overwrites existing port mappings. Use a blank list ("") to clear current mappings.

--mapadd *N_Port* **"***F_Port1* **[;** *F_Port2***;...]"**

> Adds one or more specified F_Ports to the mapping of an existing "primary" N_Port. The traffic for the configured F_Ports is routed to the fabric through the specified N_Port when the F_Ports come online. An F_Port cannot be mapped to more than one primary N_Port at the same time.

--mapdel *N_Port* **"***F_Port1* **[;** *F_Port2***;...]"**

> Deletes one or more specified F_Ports from the "primary" N_Port mapping.

--staticadd *N_Port* "*F_Port1* [; *F_Port2*;...]"

Creates a static mapping between an existing "primary" N_Port and one or more speci-fied F_Ports. This command removes exiting mappings. Once the static mapping is enabled, the F_Ports and all logged-in devices will log out of the previous N_Port and log in using the new N_Port.

--staticdel *N_Port* "*F_Port1* [; *F_Port2*;...]"

Deletes a static mapping between an existing "primary" N_Port and one or more specified F_Ports. This command removes exiting mappings. Alternately, you can remove an existing mapping by mapping the F_Port to another N_Port.

--pgshow [*pgid*]

Displays the Port Group configuration. The port grouping feature supports specifying a set of N_Ports to be included in the Port Group (PG) policy. The factory default PG is "pg0", which includes all N_Ports. The default PG cannot be removed or renamed.

--pgcreate *pgid*

"*N_Port1* [;*N_Port2*;...]" [**-n** *pgname*][**-m** "lb; mfnm"]

Creates a port group with the ID *pgid* and a specified list of N_Ports to be included in the policy. The list must be enclosed in quotation marks. Ports must be separated by semi-colons. The port group ID must not exceed 64 characters. Optionally specify a name for the port group and a mode. Modes are disabled by default. For an explanation of mode values, see **--pgsetmodes**.

--pgadd *pgid* "*N_Port1* [; *N_Port2*;...]"

Adds one or more N_Ports to the specified port group. The port list must be enclosed in quotation marks. Ports must be separated by semicolons.

--pgdel *pgid* "*N_Port1* [; *N_Port2*;...]"

Deletes one or more N_Ports from the specified port group. Deleted ports are added to the default port group "pg0". The port list must be enclosed in quotation marks. Ports must be separated by semicolons.

--pgrename *pgid newname*

Replaces the name of an existing port group with the specified new name. The port group ID must not exceed 64 characters.

--pgremove *pgid*

Deletes the specified port group. The N_Ports in the port group that is deleted are moved to the default port group, which is port group ID 0.

--pgmapadd *pgid* **"*F_Port1*[;*F_Port2*;...]"**

Maps the specified F_Ports to the PG identified by the PG ID. Upon execution, the system identifies the least loaded N_Port in the port group and maps the F_Ports to that N_Port. The port list must be enclosed in double quotation marks. Ports must be separated by semicolons. Login balancing (LB) mode must be enabled on the port group for this command to succeed. Use **ag --pgsetmodes** to enable LB mode.

--pgmapdel *pgid* **"*F_Port1*[;*F_Port2*;...]"**

Removes one or more F_Ports that are part of the port group identified by the PG ID from their mapping to a corresponding N_Port. The port list must be enclosed in double quotation marks. Ports must be separated by semicolons. Login balancing (LB) mode must be enabled on the port group for this command to succeed. Use **ag --pgsetmodes** to enable LB mode.

--pgsetmodes *pgid* **"lb;mfnm"**

Sets the APC modes for the specified port group. The mode list must be enclosed in double quotation marks, and the modes must be separated by a semicolon. Alternately you can set the modes at the time when you create the port group with the **pgcreate** command. The following modes are supported:

lb

Specifies the login balancing mode for the specified port group. If login balancing mode is enabled and an F_Port goes offline, logins in the port group are redistributed among the remaining F_Ports. Similarly, if an N_Port comes online, port logins in the PG are redistributed to maintain a balanced N_Port to F_Port ratio. This operation is disruptive. Login balancing mode is disabled by default in all port groups.

mfnm

Enables the Managed Fabric Name Monitoring (MFNM) mode in the specified port group. This command changes the fabric name monitoring mode from "default" to "managed". In both default and managed mode, the system queries the fabric name once every 120 seconds, and if it detects an inconsistency, for example, if the port group is connected to multiple fabrics, it triggers a RASLOG message. The difference between default and managed fabric name monitoring is that in managed mode, failover is disabled for all ports in the port group if the system detects an inconsistency in fabric names.

You can add or remove MFNM from a port group: however, doing so will enable or disable MFNM on the entire switch. RASLOG messages are generated only if MFNM is enabled on the entire switch and multiple fabrics are connected to the switch.

--pgdelmodes *pgid* **"lb;mfnm"**

Disables the specified modes on a given port group. The mode list must be enclosed in double quotation marks, and the modes must be separated by a semicolon. For a description of supported modes, see **--pgsetmodes**.

--pgfnmtov *new_tov*

Displays the fabric name monitoring timeout value in seconds when used without speci-
fying a new value. To change the current value, specify a new timeout value in seconds.
The valid range is 30 to 120 seconds. The default value is 120 seconds.

--failoverenable [*N_Port*] | -pg *pgid*

Enables the failover policy for a given N_Port or for all N_Ports in the given port group.
When the failover policy is enabled for a given N_Port, F_Ports behave as follows:

- If only primary F_Port to N_Port mapping is in place, all currently mapped F_Ports
  fail over to another available N_Port if the original N_Port becomes disabled. If
  multiple N_Ports are available for failover, F_Ports are evenly balanced across all
  available N_Ports. If no other N_Port is available, failover does not occur.

- If preferred secondary F_Port to N_Port mapping is in place, the F_Ports are
  routed through the preferred secondary N_Port. If the preferred secondary N_Port
  is offline, the F_Ports are disabled.

--failoverdisable [*N_Port*] -pg *pgid*

Disables the failover policy for a given N_Port or for all N_Ports in the given port group.

--failovershow [*N_Port*]

If an N_Port is specified (optional), the command displays the failover policy for this
N_Port. Otherwise, the failover policy for all N_Ports is displayed. Failover is displayed
as enabled (1) or disabled (0).

--failbackenable [*N_Port*] | -pg *pgid*

Enables the failback policy for a specified N_Port or for all N_Ports in the given port
group. When the failback policy is enabled, ports behave as follows:

- If only primary F_Port to N_Port mapping is in place, all F_Ports are automatically
  rerouted back to the N_Ports to which they were originally mapped when those
  N_Ports come back online. Only the originally mapped F_Ports fail back. In the
  case of multiple N_Port failures, only F_Ports that were mapped to the recovered
  N_Port fail back. The remaining F_Ports are not redistributed among the online
  N_Ports during the failback.

- If preferred secondary F_Port to N_Port mapping is in place, and the primary
  N_Port comes back online, then the F_Ports are rerouted through the primary
  N_Port. If the secondary N_Port comes online while the primary N_Port is still
  offline, F_Ports are rerouted through the secondary N_Port.

--failbackdisable [*N_Port*] | -pg *pgid*

Disables the failback policy for the specified N_Port or for all N_Ports in the given port
group.

--failbackshow [*N_Port*]

If an N_Port is specified (optional), the command displays the failback policy for this N_Port. Otherwise, the failback policy for all the N_Ports is displayed. The failback policy is displayed as disabled (0) or enabled (1).

--failbackforce [*N_Port* | -pg *pgid* | -all]

Forces ports to log in through the configured N_Port for the specified N_Port or for all N_Ports in the given port group if the ports are not already logged in. When used with the **-all** option, all F_Ports configured to all N_Ports, regardless of port group, are failed back to their respective N_Ports. Failback will not occur if failback is disabled on the N_Port or if the F_Ports are manually disabled by the user to avoid any override of other manual actions. The forced failback will not occur when the N_Port is in a port group that has Login Balancing enabled as it will automatically map F_Ports to the least utilized N_Ports.

--prefset "*F_Port* [;*F_Port2*;...]" *N_Port*

Sets the preferred secondary N_Port for one or more F_Ports. Preferred mapping is optional. Preferred F_Port to N_Port mapping provides an alternate N_Port for F_Ports to come online for predictable failover and failback. An F_Port must have primary N_Port mapping before a secondary N_Port can be configured. The list of F_Ports to be mapped must be enclosed in double quotation marks. Port numbers must be separated by semi-colons.

--prefdel "*F_Port* [;*F_Port2*;...]" *N_Port*

Deletes the preferred secondary N_Port for the specified F_Ports. The list of F_Ports to be deleted from the secondary mapping must be enclosed in double quotation marks. Port numbers must be separated by semicolons.

--prefshow

Displays the preferred secondary N_Port for all F_Ports.

--adsset "*F_Port* [;*F_Port2*;...]" "*WWN* [;*WWN2*;...]"

Sets the list of devices that are allowed to log in to a specified set of F_Ports. Devices are specified by their world wide names. Lists must be enclosed in double quotation marks. List members must be separated by semicolons. The maximum number of entries in the allowed device list is twice the per-port maximum login count. Replace the WWN list with an asterisk (*) to indicate all access on the specified F_Port list. Replace the F_Port list with an asterisk (*) to add the specified WWNs to all the F_Ports' allow lists. A blank WWN list ("") indicates no access. The ADS policy must be enabled for this command to succeed.

--adsadd "*F_Port* [;*F_Port2*;...]" "*WWN* [;*WWN2*;...]"

Adds the specified WWNs to the list of devices allowed to log in to the specified F_Ports. Lists must be enclosed in double quotation marks. List members must be separated by semicolons. Replace the F_Port list with an asterisk (*) to add the specified WWNs to all the F_Ports' allow lists. The ADS policy must be enabled for this command to succeed.

--adsdel "*F_Port* [;*F_Port2*;...]" "*WWN* [;*WWN2*;...]

Deletes the specified WWNs from the list of devices allowed to log in to the specified F_Ports. Lists must be enclosed in double quotation marks. List members must be separated by semicolons. Replace the F_Port list with an asterisk (*) to remove the specified WWNs from all the F_Ports' allow lists. The ADS policy must be enabled for this command to succeed.

--adsshow

Displays the list of allowed device WWNs for all F_Ports.

--persistentalpaenable [1 | ON] | [0 | OFF] *mode*

Configures the persistent ALPA feature. Once enabled, the ALPA parts of all device PIDs become persistent regardless of whether they were logged in before or after the persistent ALPA feature was enabled. ALPA persistence ensures that there is no inconsistency between logged-in devices. The persistent ALPA feature is disabled by default.

[1 | ON] | [0 | OFF]

Specify 1 or On to enable persistent ALPA. Specify 0 or Off to disable the feature.

mode

Specifies the manner in which the ALPA is obtained if the ALPA value is already taken by another host. Valid modes include the following:

-s | stringent

Specifies a stringent ALPA request mode. In stringent mode, the login is rejected if the ALPA is not available.

-f | flexible

Specifies a flexible ALPA request mode. In flexible mode, the host login is accepted either with the requested ALPA value or with a different ALPA value if the requested ALPA is not available.

--printalpamap *F_Port*

Displays the database entry for the specified port. An F_Port must be specified. The output displays the PWWN-to-host-ALPA mapping.

--deletepwwnfromdb *PWWN*

Removes the specified port WWN entry from the database after the host has logged out.

--clearalpamap *F_Port*

Clears the ALPA values for the specific F_Port. This command removes the PWWN-to-ALPA-value mapping from the database.

--addwwnmapping *N_Port* **"***WWN* **[;***WWN2***;...]" | --all**

Maps one or more device WWNs to a preferred N_Port. All traffic form the specified devices is forced through the specified N_Port, regardless of which F_Port the device logs in to. If the designated N_Port becomes unavailable, an alternate port can serve as a preferred failover port. This command affects only devices that are connecting to the fabric after successful execution of this command; it does not affect devices already logged in. If a device is already connected to the switch when its mapping is created, that mapping goes into effect the next time the device connects. The WWN list must be enclosed in double quotation marks. WWNs must be separated by semicolons.

The **--all** option indicates all device WWNs already mapped, for example, if you wish to change an existing WWN mapping. It does not affect device WWNs that are not part of an existing mapping.

--delwwnmapping *N_Port* **"***WWN* **[;***WWN2***;...]" | --all**

Removes the mapping of one or more device WWNs to a preferred N_Port. The **--all** option removes the mapping for all device WWNs currently mapped to the specified N_Port. The WWN list must be enclosed in double quotation marks. WWNs must be separated by semicolons. The mappings are removed upon execution of this command.

--addwwnpgmapping *PG* **"***WWN* **[;***WWN2***;...]" | --all**

Maps one or more device WWNs to any of the N_Ports included in the specified port group. The port group is identified by its port group ID. The **--all** option maps all currently mapped device WWNs to the specified port group. The WWN list must be enclosed in double quotation marks. WWNs must be separated by semicolons. The device WWN to port group mapping takes effect the next time the device logs in.

--delwwnpgmapping *PG* **"***WWN* **[;***WWN2***;...]" | --all**

Removes the mapping between the specified device WWNs and the specified port group. The port group is identified by its port group ID. The **--all** option removes the mapping of all device WWNs currently mapped to the specified port group. The WWN list must be enclosed in double quotation marks. WWNs must be separated by semicolons. The mappings are removed upon execution of this command.

--addwwnfailovermapping *N_Port* **"***WWN* **[;***WWN2***;...]" | --all**

Maps one or more device WWNs to a preferred failover N_Port. If the N_Port to which the WWNs are mapped is not available or goes down, the device logins fail over to the preferred failover N_Port. The **--all** option maps all currently mapped device WWNs to the specified failover N_Port. The WWN list must be enclosed in double quotation marks. WWNs must be separated by semicolons.

--delwwnfailovermapping *N_Port* **"***WWN* **[;***WWN2***;...]" | --all**

Deletes the mapping of one or more device WWNs to a preferred failover N_Port. The **-- all** option deletes the failover mappings of all device WWNs currently mapped to the specified N_Port. The WWN list must be enclosed in double quotation marks. WWNs must be separated by semicolons.

--wwnmappingdisable "*WWN* [;*WWN2*;...]" | --all

>   Disables one or more device WWN mappings. Use this command if you want to disable
>   the mapping action temporarily without making permanent changes to the mappings. The
>   mappings remain disabled until they are re-enabled or deleted. The **--all** option disables
>   all currently existing device WWN mappings.

--wwnmappingenable "*WWN* [;*WWN2*;...]" | --all

>   Re-enables one or more previously disabled device WWN mappings. The **--all** option re-
>   enables all previously disabled device WWN mappings.

--wwnmapshow

>   Displays all device WWN mappings. For each device WWN, the command displays the
>   N_Port number to which it is mapped, the secondary (failover) N_Port, and the port group
>   if applicable. The "Current" field shows the port that the device is currently using. If the
>   device is not logged in, the field displays "none." If the device is logged in to a port other
>   than the one to which it is mapped, the field displays that port. If the device is mapped to
>   a port group, the field displays the number of the port within that port group that the device
>   is currently using. If the device is using a trunk, the field displays the port in that trunk to
>   which the device is logged in. The "Enabled" field indicates whether a mapping has been
>   temporarily disabled ("no") or whether it is in the enabled state ("yes").

--reliabilitycounterset *count*

>   Sets the reliability limit for the preferred N_Port. This parameter controls the number of
>   ONLINE or OFFLINE State Change Notification (SCN) messages that a port can receive
>   before becoming unreliable. The range is 10 through 100. The default value is 25. Specify
>   0 to disable the reliability limit; when disabled, any unreliable N_Ports become reliable
>   again.

>   The port becomes reliable again if it does not receive any SCN messages for a period of
>   five minutes. Preferred N_Port settings are not enforced on unreliable N_Ports. When the
>   port becomes reliable again, the behavior is as follows:

>   •   If a FAILBACK flag is set, the port will fail back the configured F_Ports.

>   •   Configured F_Ports that are offline will come back online.

>   •   If the LB mode or auto policy is configured, load rebalancing resumes.

--reliabilityshow [*N_Port*]

>   Displays the current reliable state of the N_Ports. Reliability is displayed as reliable (1) or
>   unreliable (0). The N_Port parameter displays the reliability of the individual N_Port. If no
>   parameter is specified, the reliability of all N_Ports regardless of the port group is
>   displayed.

--reliabilitycountershow

>   Displays the configured reliability limit for N_Ports.

--backupmappingsave *N_Port*

Saves the configured F_Ports, static F_Ports for the given N_Port, and F_Ports for which the given N_Port is a preferred one.

--backupmappingdel *N_Port*

Deletes the backup mappings for the given N_Port, if any.

--backupmappingshow *N_Port*

Displays the saved mappings for the given N_Port, if any.

Examples

To display the current state of the Access Gateway with Failover (FO) and Failback (FB) enabled on N_Ports 9 and 12:

```
switch:admin> ag --show
Name              : core_ag
NodeName          : 10:00:00:05:1e:85:ae:f8
Number of Ports   : 40
IP Address(es)    : 10.17.31.2
Firmware Version  : v7.1.0ING
N_Ports           : 8
F_Ports           : 5
Policies enabled  : pg
Persistent ALPA   : Disabled
Static WWN Map    : None
Port Group information :
      PG_ID  PG_Members            PG_Name    PG_Mode
      ----------------------------------------------
      0        0;1;2;3;8;          pg0           -
               9;10;11;32;33;
               34;35;36;37;38;
               39
      ----------------------------------------------
Fabric Information :
      Attached Fabric Name         N_Ports
      ----------------------------------------------
      10:00:00:05:1e:d6:f8:c9       0;1;2;3;8;
                                    9;10;11
      ----------------------------------------------
N_Port information :
      Port  PortID    Attached PWWN    Attached_Switch
                                                  F-port\
      ------------------------------------------------\
      0    0x010100  50:00:51:ed:6f:8e:60:28    Spirit\
      1    0x010100  50:00:51:ed:6f:8e:60:28    Spirit\
      2    0x010100  50:00:51:ed:6f:8e:60:28    Spirit\
      3    0x010100  50:00:51:ed:6f:8e:60:28    Spirit\
```

```
        8      0x010d00   20:0d:00:05:1e:d6:f8:c9        Spirit\
        9      0x010c00   20:0c:00:05:1e:d6:f8:c9        Spirit\
       10      0x010e00   20:0e:00:05:1e:d6:f8:c9        Spirit\
       11      0x010f00   20:0f:00:05:1e:d6:f8:c9        Spirit\


        Switch  FO  FB  IP_Addr    F_Ports
        --------------------------------------------
         0      1   1   10.17.31.170    4;5;23;
         0      1   1   10.17.31.170    None
         0      1   1   10.17.31.170    None
         0      1   1   10.17.31.170    None
        13      1   1   10.17.31.170    6;
        12      1   1   10.17.31.170    7;
        14      1   1   10.17.31.170    None
        15      1   1   10.17.31.170    None
        --------------------------------------------
F_Port information :
        Port  PortID     Attached PWWN           N_Port\
        ------------------------------------------------ \
         4    0x010103   20:00:00:05:1e:85:92:88   0 \
         5    0x010102   20:01:00:05:1e:85:92:88   0 \
         6    0x010d01   20:02:00:05:1e:85:92:88   8 \
         7    0x010c01   20:03:00:05:1e:85:92:88   9 \
        23    0x010101   10:00:00:05:1e:65:95:81   0 \


        Preferred N_port  Login Exceeded?
         ----------------------------------------
        None               No
        None               No
        None               No
        None               No
        None               No
        --------------------------------------------------
Static N-Port to F-Port Mapping :
        N-Port    F-Port
        ------------------------------------------------
         0       None
         1       None
         2       None
         3       None
         8       None
         9       None
        10       None
        11       None
        --------------------------------------------
```

To display the current Access Gateway mode:

```
switch:admin> ag --modeshow
Access Gateway mode is enabled.

switch:admin> ag --modeshow
Access Gateway mode is NOT enabled.
```

AG group policy commands

To show current policies:

```
switch:admin> ag --policyshow
AG Policy                    Policy Name     State
------------------------------------------------------
Port Grouping                pg              Enabled
Auto Port Configuration      auto            Disabled
Advanced Device Security     ads             Disabled
WWN Based Load Balancing     wwnloadbalance  Disabled
------------------------------------------------------
```

To enable a port grouping policy:

```
switch:admin> ag --policyenable pg
```

To disable a port grouping policy

```
switch:admin> ag --policydisable pg
```

To enable auto port configuration policy when both policies are disabled and the switch is already disabled:

```
switch:admin> ag --policyenable auto
All Port related Access Gateway configurations will be lost.
Please save the current configuration using configupload.
Do you want to continue? (yes, y, no, n): [no] y
```

To disable auto port configuration policy when the switch is disabled:

```
switch:admin> ag --policydisable auto
Default factory settings will be restored.
Default mappings will come into effect.
Please save the current configuration using configupload.
Do you want to continue? (yes, y, no, n): [no] y
Access Gateway configuration has been restored \
to factory default
```

To enable the ADS policy:

```
switch:admin> ag --policyenable ads
```

To disable the ADS policy:

```
switch:admin> ag --policydisable ads
```

To enable the WWN load balancing policy:

```
switch:admin> ag --policyenable wwnloadbalance
```

To disable the WWN load balancing policy:

```
switch:admin> ag --policydisable wwnloadbalance
```

AG port mapping commands

To display current port mappings and port grouping policies:

```
switch:admin> ag --mapshow

N_Port Configured Static Current Failover Failback PG_ID PG_Name
       _F_Ports  _F_Ports _F_Ports
```

```
--------------------------------------------------------------------
   0    4;5;6     None     4;5;6     1         0        2  SecondFabric
   1    7;8;9     None     7;8;9     0         1        0  pg0
   2    10;11     None     10;11     1         0        2  SecondFabric
   3    12;13     None     12;13     0         1        0  pg0
--------------------------------------------------------------------
```

Explanation of fields in **--mapshow** output:

- *Static F_Ports* are part of static F_Port to N_Port mapping.

- *Current F_Ports* are the F_Ports that are currently online and mapped to a given N_Port either because they are mapped to that N_Port or as a result of N_Port failover.

- *Configured F_Ports* are the F_Ports that are explicitly mapped to this N_Port (saved in config).

- *Failover* and *Failback* indicate whether or not N_Port policy is enabled (1) or disabled (0).

- *PG_ID* is the Port Group ID and *PG_Name* is the Port Group Name.

To clear all F_Ports mapped to the configured primary N_Port 0:

```
switch:admin> ag --mapset 0 ""
F_Port to N_Port mapping has been updated successfully
```

To add F_Ports 4 and 6 to N_Port 0 (observe that Port 0 has no configured F_Ports):

```
switch:admin> ag --mapset 0 "4;6"
F_Port to N_Port mapping has been updated successfully
```

To add F_Port 5 to N_Port 2 (observe that N_Port 2 already has mapped F_Ports):

```
switch:admin> ag --mapadd 2 "5"
```

To display the new mappings:

```
switch:admin> ag --mapshow

N_Port Configured Static  Current Failover Failback PG_ID PG_Name
       _F_Ports   _F_Ports F_Ports
--------------------------------------------------------------------

   0    4;6       None     4;6       1         0        2  SecondFabric
   1    7;8;9     None     7;8;9     0         1        0  pg0
   2    5;10;11   None     5;10;11   1         0        2  SecondFabric
   3    12;13     None     12;13     0         1        0  pg0
--------------------------------------------------------------------
```

To delete F_Port 5 that was mapped to N_Port 2:

```
switch:admin> ag --mapdel 2 "5"
Preferred N_port is set for F_Port[s]
Please delete it before removing primary N_Port
ERROR:Unable to remove F_Port[s] from mapping,
retry the command

switch:admin> ag --prefshow
F_Ports                         Preferred N_Port
```

```
                 -----------------------------------------------
                 10;11                                    0
                 4;5;6                                    2
                 7;8;9                                    3
                 -----------------------------------------------


switch:admin> ag --prefdel 5 2


Preferred N_Port is deleted successfully \
for the F_Port[s]


switch:admin> ag --mapdel 2 "5"
F_Port to N_Port mapping has been updated successfully
```

To create and display a static mapping:

```
switch:admin> ag --staticadd 17 1
switch:admin> ag --show


N_Port information :
    Port  PortID        Attached PWWN        Attached_Switch
                                                      F-port\
    -----------------------------------------------------\
    0   0x010100  50:00:51:ed:6f:8e:60:28     Spirit    \
    17  0x010100  50:00:51:ed:6f:8e:60:28     Spirit    \


    Switch  FO  FB  IP_Addr      F_Ports
    ------------------------------------------------
     0     1   1   10.17.31.170    4;5;23;
     0     1   1   10.17.31.170    None
    ------------------------------------------------
F_Port information :
    Port PortID    Attached PWWN   N_Port Preferred \
    -------------------------------------------------
    4  0x010103  20:00:00:05:1e:85:92:88  0     \
    5  0x010102  20:01:00:05:1e:85:92:88  0     \


    N_port   Login Exceeded?
    ------------------------
    None              No
    None              No
    -----------------------------------------------------
N_Port Configured Current Failover Failback PG_ID PG_Name
      _F_Ports  _F_Ports
    -----------------------------------------------------
   0   None      None     1      1      N/A     N/A
   17  2         2        0      0      N/A     N/A
    -----------------------------------------------------
Static N-Port to F-Port Mapping
    N-Port       F-Port
    -------------------------------------------
    17           1
    -------------------------------------------
```

AG failover policy commands

To display failover policy settings for all N_Ports:

```
switch:admin> ag --failovershow
N_Port  failover_bit
--------------------------
    0               1
    1               0
    2               1
    3               0
```

To set and display failover and failback policies on a single port:

```
switch:admin> ag --failoverenable 1
Failover policy is enabled for port 1

switch:admin> ag --failoverdisable 0
Failover policy is disabled for port 0

switch:admin> ag --failovershow 0
Failover on N_Port 0 is not supported

switch:admin> ag --failbackdisable 2
Failback policy is disabled for port 2

switch:admin> ag --failbackshow 2
Failback on N_Port 2 is not supported

switch:admin> ag --failbackenable 2
Failback policy is enabled for port 2
```

To display failback policy settings for all the N_Ports:

```
switch:admin> ag --failbackshow
N_Port  failback_bit
--------------------------
0               0
1               1
2               0
3               1
```

To set and display failback policy settings on a single port:

```
switch:admin> ag --failbackenable 0
Failback policy cannot be enabled since failover
policy is disabled for port 0

switch:admin> ag --failbackenable 2
Failback policy is enabled for port 2

switch:admin> ag --failbackenable 3
Failback on N_Port 3 is not supported

switch:admin> ag --failbackenable 2
Failback on N_Port 2 is supported
```

Port Group commands

To display Port Group information:

```
switch:admin> ag --pgshow
PG_ID PG_Name       PG_Mode   N_Ports   F_Ports
-------------------------------------------------
0     pg0           lb,mfnm   1;3       10;11
2     SecondFabric  -         0;2       4;5;6
-------------------------------------------------
```

To create a port group "FirstFabric" that includes N_Ports 1 and 3 and has login balancing enabled:

```
switch:admin> ag --pgcreate 3 "1;3" -n FirstFabric1 -m "lb"
Port Group 3 created successfully

switch:admin> ag --pgshow
PG_ID PG_Name       PG_Mode   N_Ports   F_Ports


-------------------------------------------------
0     pg0           lb,mfnm   none      none
2     SecondFabric  -         0;2       4;5;6
3     FirstFabric   lb        1;3       10;11
-------------------------------------------------
```

To rename the port group with *pgid* 2 to "MyEvenFabric":

```
switch:admin> ag --pgrename 2 MyEvenFabric
Port Group 2 has been renamed as MyEvenFabric successfully

switch:admin> ag --pgshow
PG_ID PG_Name       PG_Mode   N_Ports   F_Ports


-------------------------------------------------
0     pg0           lb,mfnm   none      none
2     MyEvenFabric  -         0;2       4;5;6
3     FirstFabric   lb        1;3       10;11
-------------------------------------------------
```

To remove the port group with *pgid* 2:

```
switch:admin> ag --pgremove 2
Port Group 2 has been removed successfully

switch:admin> ag --pgshow
PG_ID PG_Name       PG_Mode   N_Ports   F_Ports
-------------------------------------------------
0     pg0           lb,mfnm   0;2       4;5;6
3     FirstFabric   lb        1;3       10;11
-------------------------------------------------
```

To enable managed fabric name monitoring in port group 3:

```
switch:admin> ag --pgsetmodes 3 "mfnm"
Managed Fabric Name Monitoring mode has been \
enabled for Port Group 3
```

```
switch:admin> ag --pgshow

PG_ID PG_Name       PG_Mode   N_Ports    F_Ports
-------------------------------------------------
0     pg0           lb,mfnm   0;2        4;5;6
3     FirstFabric   lb,mfnm   1;3        10;11
-------------------------------------------------
```

To disable managed fabric name monitoring in port group 3:

```
switch:admin> ag --pgdelmodes 3 "mfnm"
Managed Fabric Name Monitoring mode has been disabled for Port Group 3
```

```
switch:admin> ag --pgshow
-------------------------------------------------
0     pg0           lb,mfnm   0;2        4;5;6
3     FirstFabric   lb        1;3        10;11
-------------------------------------------------
```

To get the current fabric name monitoring timeout value:

```
switch:admin> ag --pgfnmtov
Fabric Name Monitoring TOV: 120 seconds
```

To set the fabric name monitoring timeout value to 30 seconds:

```
switch:admin> ag --pgfnmtov 30
```

AG Preferred port information commands

To display preferred port settings for F_Ports:

```
switch:admin> ag --prefshow
F_Ports                    Preferred N_Port
--------------------------------------------
10;11                                0
12;13                                1
4;6                                  2
7;8;9                                3
--------------------------------------------
```

To delete secondary port mapping for F_Ports 7, 8 and 9:

```
switch:admin> ag --prefdel "7;8;9" 3
Preferred N_Port is deleted successfully \
for the F_Port[s]
```

To set secondary port mapping for F_Ports 7, 8 and 9:

```
switch:admin> ag --prefset "7;8;9" 3
Preferred N_Port is set successfully \
for the F_Port[s
```

ADS Policy commands

To set the list of allowed devices for Ports 11 and 12 to 'no access':

```
switch:admin> ag --adsset "11;12" ""
WWN list set successfully as the Allow Lists of \
the F_Port[s]
```

To set the list of allowed devices for Ports 1, 10 and 13 to 'all access':

```
switch:admin> ag --adsset "1;10;13" "*"
WWN list set successfully as the Allow Lists of \
the F_Port[s]
```

To remove two devices from the lists of allowed devices for ports 1 and 9:

```
switch:admin> ag --adsdel "3;9" \
   "22:03:08:00:88:35:a0:12;22:00:00:e0:8b:88:01:8b"
WWNs removed successfully from Allow Lists of the\
F_Port[s]
```

To add a two new device to the lists of allowed devices for ports 1 and 9:

```
switch:admin> ag --adsadd "3;9" \
   "20:03:08:00:88:35:a0:12;21:00:00:e0:8b:88:01:8b"
WWNs added successfully to Allow Lists of the \
F_Port[s]
```

To display the lists of allowed devices on the switch:

```
switch:admin> ag --adsshow
F_Port            WWNs Allowed
-------------------------------------------
1                 ALL ACCESS
3                 20:03:08:00:88:35:a0:12
                  21:00:00:e0:8b:88:01:8b
9                 20:03:08:00:88:35:a0:12
                  21:00:00:e0:8b:88:01:8b
10                ALL ACCESS
11                NO ACCESS
12                NO ACCESS
13                ALL ACCESS
-------------------------------------------
```

Persistent ALPA configuration commands

To enable persistent ALPA in flexible mode:

```
switch:admin> ag --persistentalpaenable 1 -f
Persistent ALPA mode is enabled
```

To enable persistent ALPA in stringent mode:

```
switch:admin> ag --persistentalpaenable 1 -s
Persistent ALPA mode is enabled
```

To disable persistent ALPA mode:

```
switch:admin> ag --persistentalpaenable 0
Persistent ALPA mode is enabled
```

To display the ALPA database entries for F_Port 5:

```
switch:admin> ag --printalpamap 5
 Hash table for Port 5 data
PWWN                    ALPA
=========================================
 20:12:00:05:1e:85:92:88        1
 20:07:00:05:1e:01:0b:4a        3
```

To attempt to remove a device entry from the database while the device is online and cannot be removed:

```
switch:admin> ag --deletepwwnfromdb  \
      0:12:00:05:1e:85:92:88 20:08:00:05:1e:01:0b:4a Online. \
       Cannot delete an online device
```

To remove a device entry from the database when the device is offline:

```
switch:admin> ag --deletepwwnfromdb  \
     0:12:00:05:1e:85:92:88
Device 20:13:00:05:1e:85:92:88 successfully deleted
```

To remove a device entry from the database when the device is not present in the table

```
switch:admin> ag --deletepwwnfromdb  \
     0:12:00:05:1e:85:92:00 20:12:00:05:1e:85:92:00 not found.
 Please check the device name
```

To remove the PWWN to ALPA value for port 5 from the database and to verify the removal:

```
switch:admin> ag --clearalpamap 5
  ALPA Table for port 5 is cleared

switch:admin> ag --clearalpamap 5


 Hash table for Port 5 data
         PWWN                     ALPA
 ===========================================
Hash Table is empty
```

Device WWN mapping commands

To create a WWN to N_Port mapping for two devices.

```
switch:admin> ag --addwwnmapping 8  \
"0:12:00:05:1e:85:92:88; 0:12:00:05:1e:85:92:88"
```

To delete one of the device WWN to N_Port mappings.

```
switch:admin> ag --delwwnmapping 8  \
"0:12:00:05:1e:85:92:88"
```

To create a WWN to port group mapping for all currently mapped devices (this command does not affect devices not already mapped or connecting later).

```
switch:admin> ag --addwwnpgmapping 4 --all
```

To add port 13 as a preferred failover N_Port for a device:

```
switch:admin> ag --addwwnfailovermapping 13 "0:12:00:05:1e:85:92:88"
```

To disable all WWN mappings:

```
switch:admin> ag --wwnmappingdisable --all
```

To display the WWN mappings when WWN load balancing policy is not enabled:

```
switch:admin> ag --wwnmapshow
Static Device Mapping Information:
WWN,          1st N_Port 2nd N_Port PG_ID Current Enabled
----------------------------------------------------------
25:f7:00:0c:29:00:02:8b  9     None     None  None     yes
```

```
25:f7:00:0c:29:00:03:8b   9       None    None    None      yes
25:f7:00:0c:29:00:04:8b   9       None    None    None      yes
25:f7:00:0c:29:00:05:8b   9       None    None    None      yes
25:f7:00:0c:29:00:07:8b   9       None    None    None      yes
25:f7:00:0c:29:00:08:8b   9       None    None    None      yes
25:f7:00:0c:29:00:09:8b   9       None    None    None      yes
25:f7:00:0c:29:00:0a:8b   9       None    None    None      yes
-----------------------------------------------------------

Dynamic Device Mapping Information:
-----------------------------------------------------------
No dynamic mappings in use
-----------------------------------------------------------
```

To display the WWN mappings when WWN load balancing policy is enabled:

```
switch:admin> ag --wwnmapshow
Static Device Mapping Information:
WWN,           1st N_Port 2nd N_Port PG_ID Current Enabled
-----------------------------------------------------------
No static mappings are defined
-----------------------------------------------------------
Dynamic Device Mapping Information:
WWN,           1st N_Port 2nd N_Port PG_ID Current Enabled
-----------------------------------------------------------
10:00:00:06:2b:11:52:df 23     None       0     23     yes
-----------------------------------------------------------
```

To configure and display the reliability counter for the preferred N_Port:

```
switch:admin> ag --reliabilitycounterset 50
switch:admin> ag --reliabilitycountershow
=================================
Reliability Counter = 50
=================================
```

Backup mapping commands

To save the configured, static, and preferred mapping of an N_Port:

```
switch:admin> ag --backupmappingsave 43
Configured,static and preferred mappings have been saved \
for the N_port successfully.
```

To display the saved mappings for the given N_Port:

```
switch:admin> ag --backupmappingshow 43
N_Port                                           : 43
Backed-up Configured F_Ports       : 15;16;17
Backed-up Static F_ports              : 18;19
Backed-up Preferred F_ports          : 27;28
```

To delete the backup mappings for the given N_Port:

```
switch:admin> ag --backupmappingdel 43
Backed up mappings have been deleted for the N_port.
```

See Also

agAutoMapBalance, portCfgNPort, portCfgNPIVPort

agAutoMapBalance

Controls automatic remapping of F_Ports in AG mode.

Synopsis

```
agautomapbalance --enable  [-fport | -nport]
     [-pg Port_Group_Number | -all]
agautomapbalance --disable [-fport | -nport]
     [-pg Port_Group_Number | -all]
agautomapbalance --force
agautomapbalance --show
agautomapbalance --help
```

Description

Use this command to control the automatic rebalancing of F_Ports for login distribution in the event that an F_Port goes offline or an N_Port comes online.

If automatic rebalancing is enabled and an F_Port goes offline, the remaining F_Port logins are redistributed across the existing N_Ports. Similarly, if a new N_Port comes online, some of the F_Port logins being routed through existing N_Ports are failed over to the new N_Ports. Both operations are potentially disruptive. Disabling automatic rebalancing of login distribution provides a way of avoiding disruptions associated with routine F_Port/N_Port offline/online events.

The default values for **agautomapbalance** are as follows:

- Disable automatic login redistribution when F_Ports go offline.

- Enable automatic login redistribution when N_Ports come online.

Use the **--show** option to display the current configuration of the automatic rebalancing feature. The command output varies depending on the current AG policy settings:

- If the Port Group policy is enabled on the switch, the command displays the following information for each configured port group:
    - **PG_ID** - Port Group number

    - **LB mode** - Login Balancing mode: enabled or disabled

    - **nport** - Enabled or disabled

    - **fport**- Enabled or disabled

- If the Auto policy is enabled on the switch, the command displays the status of the automatic rebalancing feature per port type as either disabled or enabled.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--enable

Enables automatic login redistribution upon removal or addition of a specified port type.

-fport

Enables automatic login redistribution in the event that one or more F_Ports go offline. When automatic login redistribution is enabled, the remaining F_Ports are remapped such that logins are balanced among the existing Imports.

-nport

Enables automatic login redistribution in the event that one or more N_Ports come online. When automatic login redistribution is enabled, the F_Ports mapped to the current N_Ports are rebalanced among the N_Ports.

--disable

Disables automatic login redistribution upon removal or addition of a specified port type.

-fport

Disables automatic login redistribution in the event that one or more F_Ports go offline. When automatic login redistribution is disabled, the remaining F_Ports maintain their existing N_Port mappings.

-nport

Disables automatic login redistribution in the event that one or more N_Ports come online. When auto map balancing is enabled, the F_Ports mapped to the current N_Ports are rebalanced among the N_Ports.

-pg *Port_Group_Number* **|** **-all**

Specifies the port group number or all port groups. These operands are mutually exclusive and optional with the **--enable** and **--disable** options. When a port group is specified, command execution is targeted to the members of that specific port group. When all port groups are specified, command execution is targeted to all port groups defined in the Access Gateway. The port group options are allowed only when login balancing is enabled on the specified port groups.

--force

Enforces automatic login redistribution on a one-time basis in the event that automatic login redistribution is disabled for N_Port addition, F_Port removal, or both. This command forces rebalancing of the F_Port to N_Port mapping once. It does not affect the configuration settings.

--show

> Displays the auto login distribution configuration.

--help

> Displays the command usage.

Examples

> To display the automatic login redistribution settings for port groups 0 and 1:

```
switch:admin> agautomapbalance --show
AG Policy:   pg
---------------------------------------------
PG_ID         LB mode     nport     fport
---------------------------------------------
0             Enabled     Enabled   Disabled
1             Disabled    -         -
---------------------------------------------
```

> To display the automatic login redistribution settings for N_Ports and F_Ports.

```
switch:admin> agautomapbalance --show

-----------------------------------------------------
AG Policy:                                 Auto
-----------------------------------------------------
automapbalance on N_Port Online Event:   Disabled
automapbalance on F_Port Offline Event:  Enabled
-----------------------------------------------------
```

> To disable automatic login redistribution on F_Port offline events:

```
switch:admin> agautomapbalance --disable -fport
```

> To enable automatic login redistribution on F_Ports and N_Ports on port group 1 in the Access Gateway:

```
switch:admin> agautomapbalance --enable -fport pg 1
```

> To disable automatic login redistribution on F_Ports and N_Ports on all port groups in the Access Gateway:

```
switch:admin> agautomapbalance --disable -all
```

See Also

> ag, agShow

agShow

Displays the Access Gateway information registered with the fabric.

Synopsis

```
agshow
agshow --name ag_name
agshow --local
agshow --all
```

Description

This command displays the details of the F_Ports and the configured N_Ports in the Access Gateway attached to the fabric. The command output displays the following information.

Name

The name of the Access Gateway.

Type

The type of switch.

NodeName

The World Wide Name of the Access Gateway node.

Ports

The number of ports in the Access Gateway.

Enet IP Addr

The IP address of the Access Gateway.

Firmware

The current firmware running on the Access Gateway.

Local/Remote

Indicates whether the Access Gateway is locally or remotely registered to this switch.

World Wide Name

The world wide name (WWN) of the given Access Gateway.

N-Port ID(s)

The port IDs of the online N_Ports in the given Access Gateway.

N-Ports

The number of configured N_Ports that are online.

F-Ports

The number of F_Ports that are online.

Edge AG

Specifies if the given AG is an edge AG or core AG.

Topology Details

Displays the topology details of how the particular edge is connected to a fabric.

Number of core AG(s)

Specifies the number of core AG(s) through which the edge AG is connected to a fabric device.

Attached F-Port information

Displays the port ID, the switch F_Port number, and the port WWN of each F_Port that is online on the Access Gateway.

Access Gateway F-Port information

Displays the port number, the port ID, and the port WWN of the Access Gateway to which the F_Port is connected. This information is displayed only if both the Access Gateway and the switch to which the Access Gateway is attached are running Fabric OS 7.0.0 or later. The data in this section is not always synchronized with the data in the Attached F-Port information section.

Notes

NPIV capability should be enabled on the ports that are connected to the Access Gateway. NPIV capability is enabled by default. Use **portCfgNPIVPort** to enable NPIV capability on a port if it was previously disabled.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following optional operands:

--name *ag_name*

Displays information regarding a specific Access Gateway that is registered with this fabric.

--local

> Display information regarding all edge and core Access Gateways that are locally registered to this switch.

--all

> Displays detailed information regarding all edge and core Access Gateways that are registered with this fabric.

Examples

To display the Access Gateway information registered with the fabric:

```
switch:admin> agshow --name CAGG62027
Name                 : CAGG62027
Type                 : 162
NodeName             : 10:00:00:27:f8:f1:81:40
N-Port ID(s)         : 0x0a6e00,0x0a3f00,0x071000
Number of Ports      : 64
IP Address(es)       : 10.38.54.27
Firmware Version     : v8.2.0
N-Ports              : 8
F-Ports              : 10
Edge AG              : No
Topology Details     :
Number of Core AG(s) : 0
Name                 : N/A
NodeName             : N/A
N_port ID(s)         : N/A
Attached F-Port information :
PortID Port WWN Switch F-port
-----------------------------------------------------
0x0a6e01 10:00:00:05:1e:56:5f:29 91
0x0a6e02 10:00:00:05:1e:56:5e:00 91
0x0a6e03 10:00:8c:7c:ff:42:12:01 91
[...]
Access Gateway F-Port Information :
F-Port Number F-Port ID F-Port WWN
-----------------------------------------------------
22 0x071001 20:16:00:27:f8:f1:14:a0
[...]
```

To display the locally registered Access Gateways:

```
switch:admin> agshow --local
Worldwide Name               Ports    Enet IP Addr   Firmware
-----------------------------------------------------------------------
--
10:00:00:05:33:e6:ce:80      64       10.17.31.172   v8.2.0
10:00:c4:f5:7c:16:a4:60      64       10.17.31.173   v8.2.0

Local/Remote   Edge_AGName
--------------------------------------------------
```

```
local              No     sw0
local              No     sw0
```

To display all Access Gateways attached to the fabric:

```
switch:admin> agshow
Worldwide Name              Ports   Enet IP Addr    Firmware
-----------------------------------------------------------
10:00:00:05:33:e6:ce:80     64      10.17.31.172    v8.2.0
10:00:c4:f5:7c:16:a4:60     64      10.17.31.173    v8.2.0

Local/Remote   Edge_AG
---------------------------
local          No
local          No
```

To display the detailed information of Access Gateways registered with the fabric:

```
switch:admin> agshow --all
AG #1:
Name                  : sw0
Type                  : 162
NodeName              : 10:00:00:05:33:e6:ce:80
N-Port ID(s)          : 0x020600,0x021000,0x021100
Number of Ports       : 64
IP Address(es)        : 10.17.31.172
Firmware Version      : v8.2.0
N-Ports               : 3
F-Ports               : 1
Edge AG               : No
Topology Details      :
Number of Core AG(s)  : 0
Name                  : N/A
NodeName              : N/A
N_port ID(s)          : N/A
Attached F-Port information :
PortID     Port WWN                    Switch F-port
----------------------------------------------------
0x020601   10:00:00:05:1e:65:95:81        6

Access Gateway F-Port Information :
F-Port NumberF-Port IDF-Port WWN
----------------------------------------------------
    15   0x02060120:0f:00:05:33:e6:ce:80
```

See Also

portCfgNPIVPort

aliAdd

Adds a member to a zone alias.

Synopsis

```
aliadd "aliName", "member[; member...]"
```

Description

Use this command to add one or more members to an existing zone alias. The alias member list cannot contain another zone alias.

This command changes the defined configuration. For the change to become effective, enable the zone configuration using the **cfgEnable** command. For the change to be preserved across switch reboots, save the zone configuration to nonvolatile memory using the **cfgSave** command.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

When an FCS policy is enabled, this command can be issued only from the primary FCS switch.

An alias with mixed-type members (WWN and D,I) is not allowed to be part of an alias peer zone.

Operands

The following operands are required:

"*aliName*"

Specify the name of a zone alias, enclosed in double quotation marks.

See the **aliCreate** command for more information on name and member specifications. Note that the dollar sign ($) must be prefixed with a backslash (\) while using it in the command prompt.

"*member*"

Specify a member or list of members to be added to the alias, enclosed in double quotation marks. Members must be separated by semicolons. An alias member can be specified by one or more of the following methods:

•   A switch domain and port index pair. Use **switchShow** for a list of valid port index numbers.

•   A world wide name (WWN).

Examples

To add members to zone aliases array1, array2, and loop1:

```
switch:admin> aliadd "array1", "1,2"

switch:admin> aliadd "array2", "21:00:00:20:37:0c:72:51"
```

See Also

aliCreate, aliDelete, aliRemove, aliShow

aliCreate

Creates a zone alias.

Synopsis

```
alicreate "aliName", "member[; member...]"
```

Description

Use this command to create a new zone alias. The zone alias member list must have at least one member (empty lists are not allowed). The alias member list cannot contain another zone alias. See the **zoneCreate** command for more information on name and member specifications.

This command changes the defined configuration. For the change to become effective, enable the zone configuration using the **cfgEnable** command. For the change to be preserved across switch reboots, save the zone configuration to nonvolatile memory using the **cfgSave** command.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

When an FCS policy is enabled, this command can be issued only from the primary FCS switch.

An alias with mixed-type members (WWN and D,I) is not allowed to be part of an alias peer zone.

Operands

The following operands are required:

"*aliName*"

Specify a name for the zone alias, in double quotation marks. A zone alias name can begin with a letter or number and can consist of letters, numbers, hyphen (-), underscore (_), dollar ($), and caret (^) characters. Names are case-sensitive. For example, "Ali_1" and "ali_1" are different zone aliases. Spaces are ignored.

The dollar sign ($) must be prefixed with a backslash (\) while using it in the command prompt.

"*member*"

Specify a member or list of members to be added to the alias, enclosed in double quotation marks. Members must be separated by semicolons. An alias member can be specified by one or more of the following methods:

• A switch domain and port index pair. Use **switchShow** for a list of valid port index numbers.

• A world wide name (WWN).

Examples

To create a zone alias defined by domain and port index pairs:

```
switch:admin> alicreate "array1", "2,32; 2,33; 2,34"
```

To create a zone alias with one member defined by WWN.

```
switch:admin> alicreate "array2", "21:00:00:20:37:0c:66:23"
```

See Also

aliAdd, aliDelete, aliRemove, aliShow

aliDelete

Deletes a zone alias.

Synopsis

```
alidelete "aliName"
```

Description

Use this command to delete a zone alias.

This command changes the defined configuration. For the change to become effective, enable the zone configuration using the **cfgEnable** command. For the change to be preserved across switch reboots, save the zone configuration to nonvolatile memory using the **cfgSave** command.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

When an FCS policy is enabled, this command can be issued only from the primary FCS switch.

This command is not supported on the Brocade Analytics Monitoring Platform.

Operands

The following operand is required:

"*aliName*"

Specify the name of the zone alias to be deleted. Double quotation marks are optional.

See the **aliCreate** command for more information on name and member specifications. Note that the dollar sign ($) must be prefixed with a backslash (\) while using it in the command prompt.

Examples

To delete the zone alias "array2":

```
switch:admin> alidelete "array2"
switch:admin> alidelete array1
```

See Also

aliAdd, aliCreate, aliRemove, aliShow

aliRemove

Removes a member from a zone alias.

Synopsis

aliremove "*aliName*", "*member*[; *member*...]"

Description

Use this command to remove one or more members from an existing zone alias.

If all members are removed, the zone alias is deleted.

This command changes the defined configuration. For the change to become effective, enable the zone configuration using the **cfgEnable** command. For the change to be preserved across switch reboots, save the zone configuration to nonvolatile memory using the **cfgSave** command.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

When an FCS policy is enabled, this command can be issued only from the primary FCS switch.

This command is not supported on the Brocade Analytics Monitoring Platform.

Operands

This command has the following operands:

"*aliName*"

> Specify the name of the zone alias from which members are to be removed in double quotation marks. This operand is required.
>
> See the **aliCreate** command for more information on name and member specifications. Note that the dollar sign ($) must be prefixed with a backslash (\) while using it in the command prompt.

"*member*"

> Specify a member or list of members to be removed from the alias. The list must be enclosed in double quotation marks. Members must be separated by semicolons. An alias member can be specified by one or more of the following methods:
>
> •   A switch domain and port index number pair. Use **switchShow** for a list of valid port index numbers.
>
> •   A world wide name (WWN).

The member list is located by an exact string match; therefore, it is important to maintain the order when removing multiple members. For example, if a zone alias contains"1,2; 1,3; 1,4", then removing"1,3; 1,4" succeeds but removing"1,4; 1,3" fails.

Examples

To remove a world wide name from"array1":

```
switch:admin> aliremove "array1", "3,5"

switch:admin> aliremove "array1", "21:00:00:20:37:0c:76:8c"

switch:admin> aliremove "array1", "0xEF"
```

See Also

aliAdd, aliCreate, aliDelete, aliShow

aliShow

Displays zone alias information.

Synopsis

```
alishow [--ic] [-verbose] ["pattern"] [, mode]
alishow --verbose
alishow --help
```

Description

Use this command to display zone configuration information.

Use the *pattern* operand to display only matching zone alias names in the defined configuration.

If no parameters are specified, all zone configuration information (both defined and effective) is displayed. See **cfgShow** for a description of this display.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

When an FCS policy is enabled, this command can be issued only from the primary FCS switch.

Operands

The following operands are optional:

--ic

Displays all configured zone alias names for a given pattern without case distinction.

See the **aliCreate** command for more information on name and member specifications. Note that the dollar sign ($) must be prefixed with a backslash (\) while using it in the command prompt.

-verbose

Displays the property members of peer zones along with the default **aliShow** command output.

"*pattern*"

A POSIX-style regular expression that matches zone alias names. This operand must be enclosed in quotation marks. Patterns may contain:

•   Question mark (?) - Matches any single character.

•   Asterisk (*) - Matches any string of characters.

- Range - Matches any character within the range. Ranges must be enclosed in brackets: for example, [0-9] or [a-f].

mode

Specify 0 to display the contents of the transaction buffer (the contents of the current transaction), or specify 1 to display the contents of the nonvolatile memory. The default value is 0.

--verbose

Displays the property members of peer zones along with the default **aliShow** command output.

--help

Displays the command usage.

Examples

To display all zone aliases beginning with "arr":

```
switch:admin> alishow "arr*"
alias: array1  21:00:00:20:37:0c:76:8c
alias: array2  21:00:00:20:37:0c:66:23
```

To display all zone alias names beginning with "arr", regardless of the case:

```
switch:admin> alishow --ic "arr*"
alias: array1  20:e0:00:05:33:11:1f:00
alias: ARRAY2  2f:11:00:05:33:c1:37:a2
```

See Also

None

appLoginHistory

Displays the history of HTTP login sessions.

Synopsis

```
apploginhistory --show
apploginhistory --help
```

Description

Use this command to display the history of HTTP login sessions from external management applications such as Brocade SANnav Management Portal or Web Tools. The command displays both current sessions and a history of past sessions. For each entry, the command output shows the following information:

• The date and time when the session started (YYYY/MM/DD-HH:MM:SS.MS).

• The IP address of the machine that initiated the HTTP login.

• The role of the user initiating the login.

• The application initiating the login.

The history supports a maximum of 100 entries. If the history exceeds the maximum size, the oldest entries are removed.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--show

Displays the currently active logins and a history of past logins.

--help

Displays the command usage.

Examples

To display the application login history:

```
switch:admin> apploginhistory -- show

The following are history of logins to the switch from external
applications
```

```
(Login Timestamp, IP Address, User Account, Application, SessionId,
Current VF):

2018/01/12-22:26:44.323485, 10.38.255.50, admin, PSI/v2017.11.17.06,

1f2cc402be8ee635bf3ce8407b79dcb08f32bc67e9a77826906c74f3b004741a, 128
2018/01/12-22:34:33.951549, 10.38.255.50, admin, PSI/v2017.11.17.06,

e5036c811bff3cce45e2176a4fa7390ab8586828c04160368ca37c84a89dc393, 128
2018/01/12-22:46:12.395753, 10.38.255.50, admin, PSI/v2017.11.17.06,

8732d1588d28ed08350161af13d30959d0e78fa4b6993572f653e612dfca06aa, 128

The following are the sessions from the external applications that are
active currently:
2018/01/12-22:34:33.951549, 10.38.255.50, admin, PSI/v2017.11.17.06,

e5036c811bff3cce45e2176a4fa7390ab8586828c04160368ca37c84a89dc393, 128
```

See Also

mgmtApp

appServer

Displays application server information.

Synopsis

```
appserver --domainInfo [-all | -domain [domain_ID | local]]
appserver --show [-all | -domain [domain_ID | local] |
    -pid N_Port_ID | -eid entity_ID]
appserver --help
```

Description

Use this command to display information that is stored or managed by the application server daemon.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--domainInfo

Displays information of the specified application server domain or all application server domains in the fabric. Specify one of the following operands:

-all

Displays information for all application server domains in the fabric.

-domain [*domain_ID* | local]

Displays information for the specified application server domain. Specify **local** to display information for the local domain.

--show

Displays information of the application server database. Specify one of the following operands:

-all

Displays database information for all application servers in the fabric.

-domain [*domain_ID* | local]

> Displays database information for the specified application server domain. Specify **local** to display information for the local domain.

-pid *N_Port_ID*

> Displays application server database information for the specified port ID. Specify *N_Port_ID* (the 24-bit Fibre Channel address including the domain part) in hexadecimal format.

-eid *entity_ID*

> Displays application server database information for the specified entity ID. Specify *entity_ID* in ASCII or hexadecimal format.

--help

> Displays the command usage.

Examples

> To display information of a specific application server domain:

```
switch:admin> appserver --domainInfo -domain 3
--------------------
Domain    : 03 [10:00:00:00:f8:f1:e0:c0]
State     : known dca [Application Server Supported]
--------------------

Application Server displays 1 entry
```

> To display information of all application server domains:

```
switch:admin> appserver --domainInfo -all
--------------------
Domain    : 04 [10:00:c0:f5:7c:00:00:00]
State     : local [Application Server Supported]
--------------------

Application Server displays 1 entry
```

> To display database information for a specific port ID:

```
switch:admin> appserver --show -pid 010200
--------------------------------------------------------------
Displaying results for PID 010200
--------------------------------------------------------------
N_Port ID        : 010200
Entity ID (ASCII) : 52 fc ef 53 8b ed 5a 32-10 5b 72 77 e7 df d8 83
Entity ID (Hex)  : 0x35322066632065662035332038622065642035612033322d
\
                   3130203562203732203737206537206466206438203833
Application ID   : 0x00000209h (521)
--------------------
```

```
Application Server displays 1 entry
```

To display database information for a specific entity ID:

```
switch:admin> appserver --show -eid 0x3532206663206566203 \
    5332038622065642035612033322d313020356220373220 \
    37372065372064662064438203833
------------------------------------------------------------
Displaying results for Entity ID
------------------------------------------------------------
N_Port ID          : 010200
Entity ID (ASCII) : 52 fc ef 53 8b ed 5a 32-10 5b 72 77 e7 df d8 83
Entity ID (Hex)   : 0x3532206663206566203533203862206564203561203332 2d
\
                            313020356220373220207372065372064662064438203833
Application ID     : 0x00000209h (521)
--------------------

Application Server displays 1 entry
```

See Also

None

aptPolicy

Changes or displays the Advanced Performance Tuning (APT) policy.

Synopsis

aptpolicy [*policy*]

Description

Use this command to display and change the Advanced Performance Tuning (APT) policies on a switch.

Dynamic path selection (DPS) is supported in logical fabrics. APT policy settings affecting the DPS behavior can be configured per logical switch, and settings apply to the partition for which they are set. Note that policy settings for the base switch or any switch in the base fabric affect all traffic going through the base fabric including any logical fabric traffic that uses the base fabric.

When invoked without arguments, this command displays the APT policies supported on this switch, as well as the current policy.

Notes

You must disable the switch before using this command to change the current policy. Changes take effect immediately for all EX/VEX_Ports after the switch is re-enabled.

For details on performance tuning, refer to the *Brocade Fabric OS Administration Guide*.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

policy

Specifies the APT policy. The following polices are supported:

1

Port-based routing policy. With this policy, the path chosen for an ingress frame is based on both of the following items:

• The ingress port on which the frame was received.

• The destination domain for the frame.

The chosen path remains the same if Dynamic Load Sharing (DLS) is not enabled. If DLS is enabled, a different path may be chosen for a fabric event. See **dlsSet** for a definition of a fabric event.

This policy may provide better ISL utilization when there is little or no oversubscription of the ISLs.

2

Device-Based Routing policy. Device-based routing is supported in FICON environments and in open environments only when FICON coexists. With this policy, the path chosen for an ingress frame is based on the following items:

- The ingress port on which the frame was received.

- The FC address of the source fabric device (SID) for this frame.

- The FC address of the destination fabric device (DID) for this frame.

This policy optimizes the utilization of the available paths by allowing I/O traffic between different source fabric device (SID) or destination fabric device (DID) pairs to use different paths. As a result, every distinct flow in the fabric can take a different path through the fabric. Effectively, device-based routing works the same as exchange-based routing but does not use the Originator Exchange ID (OXID) field. This helps to ensure that the exchanges between a pair of devices stay in order.

Device-based routing is also a form of Dynamic Path Selection (DPS). DPS assigns communication paths between end devices in a fabric to egress ports in ratios proportional to the potential bandwidth of the ISL, ICL, trunk group, or FCIP tunnel. When there are multiple paths to a destination, the input traffic is distributed across the different paths in proportion to the bandwidth available on each of the paths. This improves utilization of the available paths and reduces possible path congestion.

3

Exchange-based routing policy (default). With this policy, the path chosen for an ingress frame is based on all of the following items:

- The ingress port on which the frame was received.

- The FC address of the SID for this frame.

- The FC address of the DID for this frame.

- The FC OXID for this frame.

This policy optimizes the utilization of the available paths by allowing I/O traffic between different SID, DID, or OXID pairs to use different paths. All frames received on an ingress port with the same SID, DID, or OXID parameters take the same path unless there is a fabric event. See **dlsSet** for the definition of a fabric event.

This policy does not support static routes. DLS is always enabled, and the DLS setting cannot change with this policy.

Examples

To display the current APT policy:

```
switch:admin> aptpolicy
```

```
        Current Policy: 3
3: Default Policy
1: Port Based Routing Policy
2: Device Based Routing Policy (FICON support only)
3: Exchange Based Routing Policy
```

To change the current APT policy to the exchange-based routing policy:

```
switch:admin> aptpolicy 3
Switch must be disabled in order to modify \
this configuration parameter. To disable the switch, \
use the "switchDisable" command.

switch:admin> switchdisable

switch:admin> aptpolicy 3
Policy updated successfully.

switch:admin> switchenable

switch:admin> aptpolicy
Current Policy: 3

3: Default Policy
1: Port Based Routing Policy
2: Device Based Routing Policy (FICON support only)
3: Exchange Based Routing Policy
```

See Also

dlsReset, dlsSet, dlsShow, switchDisable

auditCfg

Modifies and displays the audit log filter configuration.

Synopsis

```
auditcfg --class audit_class
auditcfg --enable | --disable
auditcfg --severity severity_level
auditcfg --show
```

Description

Use this command to configure audit logging and to display the audit log configuration. This command allows you to set filters by configuring certain classes, to add or remove any of the classes in the filter list, to set severity levels for audit messages, and to enable or disable audit filters. Based on the configuration, certain classes are logged to syslog for auditing. Syslog configuration is required for logging audit messages. Use the **syslogAdmin** command to add the syslogd server IP address.

Notes

The RAS class is not configurable; its function is to audit the audit log management operations, and it is always enabled internally.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--class

Configures filters for a specified audit class. To add or remove any of the classes in the filter list, reissue the **--class** option.

audit_class

Specifies the filters to be configured. Valid values are: 1-ZONE, 2-SECURITY, 3-CONFIGURATION, 4-FIRMWARE, 5-FABRIC, 7-LS (Logical Switch), 8-CLI, and 9-MAPS. The filter is specified by its numeric value. To add more than one filter, the numeric values must be separated by commas. Spaces are not permitted. This operand is required.

--enable

Enables all filters. This action enables an existing configuration; it does not change the configuration.

--disable

>   Disables all filters.This action disables an existing configuration; it does not change the configuration.

--severity

>   Sets the audit severity level to a specified value. When the severity is set, only log messages of type *severity_level* and higher are displayed. You cannot enter multiple severity levels.

severity_level

>   Valid values are INFO, WARNING, ERROR, and CRITICAL. By default, all messages are logged. This operand is required.

--show

>   Displays the current configuration.

Examples

>   To configure the audit log filter:

```
switch:admin> auditcfg --class 2,3,8
Audit filter is configured.
```

>   To enable audit logging:

```
switch:admin> auditcfg --enable
Audit filter is enabled.
```

>   To display the configuration:

```
switch:admin> auditcfg --show
Audit filter is enabled.
2-SECURITY
3-CONFIGURATION
8-CLI
Severity level: INFO
```

>   To disable audit logging and to display the configuration (the filters are unchanged but show the disabled state):

```
switch:admin> auditcfg --disable
Audit filter is disabled.
switch:admin> auditcfg --show
Audit filter is disabled.
2-SECURITY
3-CONFIGURATION
8-CLI
Severity level: INFO
```

See Also

auditDump, rasAdmin

auditDump

Displays or clears the audit log.

Synopsis

```
auditdump -s | -show
auditdump -c | -clear
```

Description

Use this command to display or clear the audit log on the switch. The audit log persistently saves the most recent 1024 log entries on the switch. On modular platforms, the entries are not shared across CPs. Each command that is issued on a switch from a nonroot user account is saved as an audit log. To display or clear the logs, this command must be issued for each CP separately.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

-s | -show

Displays the audit log on the switch or the CP.

-c | -clear

Clears the audit log on the switch or the CP.

Examples

To display the audit log:

```
switch:admin> auditdump -s
0 AUDIT, 2010/02/18-01:45:52 (PDT), [SEC-3022], INFO, SECURITY,
admin/admin/10.32.220.161/http/DCFM-HttpConnec, ad_0/ras035/FID
128,, Event: logout, Status: success, Info: Successful logout
by user [admin].

1 AUDIT, 2010/02/18-01:46:00 (PDT), [SEC-3022], INFO, SECURITY,
admin/admin/10.32.220.161/http/DCFM-HttpConnec, ad_0/ras035/FID
128,, Event: logout, Status: success, Info: Successful logout
by user [admin].

2 AUDIT, 2010/02/18-01:46:18 (PDT), [SEC-3020], INFO, SECURITY,
admin/admin/10.32.220.161/http/DCFM-HttpConnec, ad_0/ras035/FID
```

```
128,, Event: login, Status: success, Info: Successful login
attempt via HTTP, IP Addr: 10.32.220.161.

3 AUDIT,2012/05/23-03:45:15 (UTC),[RAS-3005], INFO, CLI,
admin/admin/NONE/console/CLI,ad_0/McKsSpirit/CHASSIS,
CLI:clihistory

4 AUDIT,2012/05/23-04:12:04 (UTC),[RAS-3005],INFO,CLI,
admin/admin/NONE/console/CLI,ad_0/McKsSpirit/CHASSIS,
CLI:auditdump -s

(output truncated)
```

To clear the audit log:

```
switch:admin> auditdump -c
```

See Also

auditCfg

authUtil

Displays and sets the authentication configuration.

Synopsis

```
authutil
authutil --set option value
authutil --show
authutil --policy -sw option | -dev option
authutil --authinit [slot/]port[, [slot/]port...] | allE
```

Description

Use this command to display and set local switch authentication parameters.

Use **--set** to change authentication parameters such as protocol, Diffie-Hellman group (DH group), or hash type. When no protocol is set, the default setting of "FCAP, DH- CHAP" is used. When no group is set, the default setting of "*" (meaning "0,1,2,3,4") is used. Configuration settings are saved persistently across reboots. Configuration changes take effect during the next authentication request.

Use the **--show** command to display the current authentication configuration.

Authentication parameters are set on a per-switch basis. If Virtual Fabrics are enabled, all authentication parameters apply to the current logical switch context only and must be configured separately for each logical switch. Use **setContext** to change the current logical switch context.

In a VF environment, authentication is performed only on physical E_Ports, not on logical inter-switch links (LISLs).

An FCR switch does not depend on the authentication policy to perform authentication or encryption/compression key exchange with the edge fabric. The authentication policy set on an FCR switch is not considered to perform authentication with the edge fabric. The **authUtil** configuration on the FCR switch does not affect EX_Port. The EX_Port acts passively by accepting the parameters received from the edge fabric.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--show

Displays the local authentication configuration. This option is supported in Access Gateway (AG) mode.

--set *option value*

Modifies the authentication configuration. Valid options and their values include the following:

-a fcap | dhchap | all

Sets the authentication protocol. Specify "fcap" to set only FCAP authentication. Specify "dhchap" to set only DH-CHAP authentication. Specify "all" to set both FCAP and DH-CHAP, which is the default setting. When authentication is set to "all", the implicit order is FCAP followed by DH-CHAP. This means that in authentication negotiation, FCAP is given priority over DH-CHAP on the local switch. If the negotiation is done for an encrypted port, DH-CHAP takes precedence over FCAP. The **--set dhchap** and **--set all** options are supported in the AG mode.

Before setting the authentication type, make sure that FCAP certificates and dhchap secrets are configured.

-g 0 | 1 | 2 | 3 |4 | *

Sets the Diffie-Hellman (DH) group. Valid values are 0 to 4 and "*". DH group 0 is called NULL DH. Each DH group implicitly specifies a key size and associated parameters. A higher group value provides stronger cryptography and a higher level of security. When the DH group is set to a specified value, only that DH group is enabled. Specifying "*" enables all DH groups, 0, 1, 2, 3, and 4, in that order. This means that in authentication negotiation, the NULL DH group is given priority over all other groups. In the case of a port that is enabled for encryption and you specify "*", DH group 4 is selected. This option is supported in AG mode.

-h sha256 | sha1 | md5 | all

Sets the hash type. Valid values are "sha256", "sha1", "md5", or "all". Enabling sha256 access is required when configuring the system for FIPS. Refer to the *Brocade Fabric OS Administration Guide* for details on FIPS configuration.

--policy

Sets the switch authentication policy or device authentication policy. The following options are supported:

-sw off | passive | active | on

Sets the switch authentication policy. Specify one of the following modes. Operands are exclusive. If the switch has ports enabled for encryption, only the **on** and **active** options are supported. Only **on** and **off** options are supported in AG mode.

off

Turns the authentication policy off, and the switch rejects any authentication requests.

passive

Sets the authentication policy to passive mode (default) . The switch does not initiate authentication but participates in authentication if the connecting switch initiates it.

active

Sets the authentication policy to active mode. During switch initialization, authentication is initiated on all E_Ports, but the port is not disabled if the connecting switch does not support authentication or the authentication policy is turned off.

on

Sets the switch authentication policy to ON mode. Strict authentication is enforced on all E_Ports. The inter-switch link (ISL) goes down (port disable) if the connecting switch does not support the authentication or the authentication policy is switched off.

-dev off | passive | on

Sets the device authentication policy. Three modes are supported. The device authentication policy is off by default. This option and suboptions are supported in AG mode.

off

Turns off the device authentication policy. Authentication is not required. The switch ignores any authentication requests and continues with the FC probing without authentication.

passive

Sets the authentication policy to passive mode. Authentication is optional. If the attached device is capable of doing the authentication, the switch participates in authentication; otherwise it forms an F_Port without authentication. In this mode, the device accepts authentication on all F_Ports.

on

Sets the authentication policy to "on" mode. Authentication is mandatory. If the attached device is not capable of doing authentication, the corresponding port is disabled.

--authinit [*slot/*]*port* [, [*slot/*]*port*...] | allE

Reinitiates authentication on selected ports after changing the DH-CHAP group, hash type, and shared secret between a pair of switches. This command does not work on private, loop, NPIV, and FICON devices. This command may bring down the E_Ports if the DH-CHAP shared secrets are not installed correctly. This command is not supported on encrypted ports. This option is not supported in AG mode. This command does not initiate authentication on disabled ports. Valid options include the following:

slot

Specify the slot number, if applicable, followed by a slash (/).

port

> Specify the port number. On enterprise-class platforms, use the *slot/port* format for specifying the port number.

allE

> Specify all E_Ports in the switch.

Examples

> To set DH-CHAP as the authentication protocol:
>
> ```
> switch:admin> authutil --set -a dhchap
> Authentication is set to dhchap.
> ```
>
> To set both protocols in order of FCAP and then DH-CHAP:
>
> ```
> switch:admin> authutil --set -a all
> Authentication is set to fcap,dhchap.
> ```
>
> To enable sha1 hash type:
>
> ```
> switch:admin> authutil --set -h sha1
>  Hash is set to sha1.
> ```
>
> To enable all hash types:
>
> ```
> switch:admin> authutil --set -h all
>  Hash is set to sha256,sha1,md5.
> ```
>
> To check the hash types set:
>
> ```
> switch:admin> authutil --show
> AUTH TYPE      HASH TYPE      GROUP TYPE
> ---------------------------------------
> fcap,dhchap    sha256,sha1,md5     1
>
> Switch Authentication Policy: PASSIVE
> Device Authentication Policy: OFF
> ```
>
> To enable Sha256 hash type:
>
> sha256 hash type is recommended for FIPS configuration.
>
> ```
> switch:admin> authutil --set -h sha256
> Hash is set to sha256.
> ```
>
> ```
> switch:admin> authutil --show
> AUTH TYPE      HASH TYPE      GROUP TYPE
> ---------------------------------------
> fcap,dhchap     sha256          1
>
> Switch Authentication Policy: PASSIVE
> Device Authentication Policy: OFF
> ```
>
> To set DH group 3:

```
switch:admin> authutil --set -g 3
DH Group was set to 3.
```

To set all DH groups to be specified in the authentication negotiation in the order of 0, 1, 2, 3, and 4:

```
switch:admin> authutil --set -g  "*"
DH Group is set to 0,1,2,3,4
```

To set the Switch policy to active mode:

```
switch:admin> authutil --policy -sw active
Warning: Activating the authentication policy requires
either DH-CHAP secrets or PKI certificates depending
on the protocol selected. Otherwise, ISLs will be
segmented during next E-port bring-up.
ARE YOU SURE  (yes, y, no, n): [no] y
Auth Policy is set to ACTIVE
```

To set the Device policy to passive mode:

```
switch:admin> authutil --policy -dev passive
Warning: Activating the authentication policy requires
DH-CHAP secrets on both switch and device. Otherwise,
the F-port will be disabled during next F-port
bring-up.
ARE YOU SURE  (yes, y, no, n): [no] y
Device authentication is set to PASSIVE
```

To set the device authentication policy to "on" mode:

```
switch:admin> authutil --policy -dev on
Warning: Activating the authentication policy requires
DH-CHAP secrets on both switch and device. Otherwise,
the F-port will be disabled during next F-port
bring-up.
ARE YOU SURE  (yes, y, no, n): [no] y
Device authentication is set to ON
2008/03/24-23:13:06, [AUTH-1003], 112,, INFO, Stealth_3,
Device authentication type has been successfully set to ON
```

To start authentication on E/F_Ports 2, 3, and 4:

```
switch:admin> authutil --authinit  2,3,4
Warning: Initiating the authentication requires either DH-CHAP
 secrets or PKI certificates depending on the protocol selected.
 Failed authentication may result in traffic disruption.
 Authentication will not be initiated on encrypted ports.
ARE YOU SURE  (yes, y, no, n): [no]y
```

See Also

portShow, secAuthSecret

bannerSet

Sets the banner on the local switch.

Synopsis

bannerset [*banner*]

Description

Use this command to set the banner on the local switch.

The banner is a string of alphanumeric characters. It is displayed after you log in to a switch.

The banner can be created using the *banner* operand or interactively by entering the **bannerSet** command without an operand.

If you enter the banner text using the interactive method, the valid length is 1022 characters. If the banner text length exceeds the maximum allowed, the software truncates the input. To close the banner text string, enter a period at the beginning of a new line.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following optional operand:

banner

Specify a text string to be displayed upon login. If you enter the banner text using the banner operand, the valid length is 116 characters.

Examples

To set a new banner for a switch:

```
switch:admin> bannerset "My banner"

switch:admin> bannerSet
Please input context of security banner (press "." RETURN \
at the beginning of a newline to finish input):
```

See Also

bannerShow, motd

bannerShow

Displays the banner text.

Synopsis

```
bannershow
```

Description

Use this command to display the text of the local switch banner.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To display the banner for a switch:

```
switch:admin> bannershow
Banner: Do not disturb the setup on this switch.
```

See Also

bannerSet, motd

bcastShow

Displays broadcast routing information.

Synopsis

```
bcastshow
```

Description

Use this command to display the broadcast routing information for all ports in the switch. The broadcast routing information indicates all ports that are members of the broadcast distribution tree: ports that are able to send and receive broadcast frames.

Normally, all F_Ports and FL_Ports are members of the broadcast distribution tree. The broadcast path selection protocol selects the E_Port members of this tree in a manner designed to prevent broadcast routing loops.

The following fields are displayed:

Group

The multicast group ID of the broadcast group (always 256).

Member Fx_Ports

A map of all F_Ports and FL_Ports in the broadcast tree.

Member E_Ports

A map of all E_Ports in the broadcast tree.

The broadcast routing information for the ports is displayed as a set of hexadecimal bit maps. Each bit in a bit map represents a port, with the least significant bit in each row representing port 0, 32, 64, and so on.

Notes

The output from this command may vary depending on the hardware platform.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To display the broadcast routing information for all ports in the switch:

```
switch:admin> bcastShow
```

```
Group   Member Fx_Ports      Member E_Ports
----------------------------------------
256     0x00012083           0x00002080
        0x00000440           0x00000400
        0x00770000           0x00700000
        0x00008200           0x00000000
        0x00000001           0x00000000
```

In this example from a switch with 128 ports, the member ports consist of ports 7, 13, 42, 84, 85, and 86. The final Member Ports bit set represents the embedded port (frames sent to be handled by firmware).and is typically set.

See Also

portRouteShow

bladeCfgGeMode

Configures a GbE port or a 10GbE port on the Brocade FX8-24 blade.

Synopsis

```
bladecfggemode --set mode -slot slot
bladecfggemode --show -slot slot | -all
bladecfggemode --help
```

Description

Use this command to configure the GbE port mode on the Brocade FX8-24 extension blade or to display the configuration. The mode configuration controls which ports are enabled.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

This command is supported only on the Brocade FX8-24 blade in a DCX 8510 chassis.

Operands

This command has the following operands:

--set *mode*

Sets the GbE port mode for a specified slot. Valid modes are one of the following:

1g

Enables GbE ports ge0-ge9 (xge0 and xge1 are disabled).

10g

Enables GbE ports xge0 and xge1 (ge0-ge9 are disabled).

dual

Enables GbE ports ge0-ge9 and xge0 (xge1 is disabled).

-slot *slot*

Specifies the slot number for the FX8-24 blade. This operand is required when setting the GbE port mode.

--show

Displays the GbE port mode for the specified slots.

-slot *slot*

> Displays the GbE port mode for a single slot.

-all

> Displays the GbE port mode for all configured slots.

--help

> Displays the command usage.

Examples

> To configure the Brocade FX8-24 blade in slot 4 in 1G mode:
>
> ```
> switch:admin> bladecfggemode --set 1g -slot 4
> ```
>
> To display the GbE port mode for the Brocade FX8-24 blade in slot 4:
>
> ```
> switch:admin> bladecfggemode --show -slot 4
> bladeCfgGeMode: Blade in slot  4 is configured in 10GigE Mode
> 10GigE mode: only xge0 and xge1 are enabled (ge0-9 ports \
> are disabled)
> ```
>
> To display the GbE port mode for all configured slots:
>
> ```
> switch:admin> bladecfggemode --show -all
> bladeCfgGeMode: Blade in slot 1 is configured in 1GigE Mode
> 1GigE mode: only the ge0-9 ports are enabled (xge0 and xge1 \
> are disabled)
> bladeCfgGeMode: Blade in slot  4 is configured in 10GigE Mode
> 10GigE mode: only xge0 and xge1 are enabled (ge0-9 ports \
> are disabled)
> ```

See Also

> **None**

bladeDisable

Disables all user ports on a blade.

Synopsis

bladedisable *slot*

Description

Use this command to disable all user ports on a blade. All Fibre Channel ports on the blade are taken offline. If the switch was connected to a fabric through this blade, the remaining switches reconfigure, and the switch reconfigures based on the other blade ports. When the **bladedisable** operation is carried out, the core blade LED will not blink amber.

After issuing **bladeDisable** on a slot in a chassis, **switchShow** displays the user ports in the disabled state. The blade is still shown as enabled in both **switchShow** and **slotShow** output.

The blade must be disabled before making configuration changes or before running many of the diagnostic tests. The blade does not need to be disabled before rebooting or powering off.

You cannot disable a blade when the blade is faulted, powered off, or running diagnostics.

This command disables the ports on a single blade. To disable the ports in an entire chassis, use the **chassisDisable** command.

Notes

This command appears to execute successfully along with a **slotpoweron** operation on an AP Blade, but the command is ignored.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operand:

slot

Specifies the slot number for the ports to be disabled.

Examples

To disable a blade in slot 5:

```
switch:admin> bladedisable 5
Blade 5 is being disabled...Done
```

To verify that the user ports on the blade are disabled:

```
switch:admin> switchshow -slot 5
switchName:     DCX57_9
switchType:     62.1
```

```
switchState:     Online
switchMode:      Native
switchRole:      Subordinate
switchDomain:    9
switchId:        fffc09
switchWwn:       10:00:00:05:1e:40:4a:00
zoning:          ON (all_cfg)
switchBeacon:    OFF
FC Router:       OFF
FC Router BB Fabric ID: 128


Slot    Blade Type     ID    Model Name      Status
-----------------------------------------------------------
  5      COREBLADE     52     CORE8           ENABLED


Index Slot Port Address Media Speed State       Proto
=====================================================
384     5    0   ------   cu    8G   In_Sync    FC   Disabled
385     5    1   ------   cu    8G   In_Sync    FC   Disabled
386     5    2   ------   cu    8G   In_Sync    FC   Disabled
387     5    3   ------   cu    8G   In_Sync    FC   Disabled
388     5    4   ------   cu    8G   In_Sync    FC   Disabled
389     5    5   ------   cu    8G   In_Sync    FC   Disabled
390     5    6   ------   cu    8G   In_Sync    FC   Disabled
391     5    7   ------   cu    8G   In_Sync    FC   Disabled
392     5    8   ------   cu    8G   In_Sync    FC   Disabled
393     5    9   ------   cu    8G   In_Sync    FC   Disabled
394     5   10   ------   cu    8G   In_Sync    FC   Disabled
395     5   11   ------   cu    8G   In_Sync    FC   Disabled
396     5   12   ------   cu    8G   In_Sync    FC   Disabled
397     5   13   ------   cu    8G   In_Sync    FC   Disabled
398     5   14   ------   cu    8G   In_Sync    FC   Disabled
399     5   15   ------   cu    8G   In_Sync    FC   Disabled
400     5   16   ------   cu    8G   In_Sync    FC   Disabled
401     5   17   ------   cu    8G   In_Sync    FC   Disabled
402     5   18   ------   cu    8G   In_Sync    FC   Disabled
403     5   19   ------   cu    8G   In_Sync    FC   Disabled
404     5   20   ------   cu    8G   In_Sync    FC   Disabled
405     5   21   ------   cu    8G   In_Sync    FC   Disabled
406     5   22   ------   cu    8G   In_Sync    FC   Disabled
407     5   23   ------   cu    8G   In_Sync    FC   Disabled
408     5   24   ------   cu    8G   In_Sync    FC   Disabled
409     5   25   ------   cu    8G   In_Sync    FC   Disabled
410     5   26   ------   cu    8G   In_Sync    FC   Disabled
411     5   27   ------   cu    8G   In_Sync    FC   Disabled
412     5   28   ------   cu    8G   In_Sync    FC   Disabled
413     5   29   ------   cu    8G   In_Sync    FC   Disabled
414     5   30   ------   cu    8G   In_Sync    FC   Disabled
415     5   31   ------   cu    8G   In_Sync    FC   Disabled
```

See Also

bladeEnable, chassisDisable, chassisEnable, portDisable, portEnable, slotShow, switchDisable, switchEnable, switchShow

bladeEnable

Enables all user ports on a blade.

Synopsis

```
bladeenable slot
```

Description

Use this command to enable all user ports on a blade. All ports within the blade that did not fail the power-on self-test (POST) are enabled (except for persistently disabled ports). They may come online if connected to a device or may remain offline if disconnected. Use the **bladeEnable** command to re-enable the blade after making configuration changes or running offline diagnostics.

If the switch is connected to a fabric through previously disabled ports, it rejoins the fabric. If this switch remains the principal switch at the end of the fabric countdown, it assigns itself a domain ID. If another switch assumes the principal role, the re-enabled switch becomes a subordinate switch and accepts a domain ID from the principal.

As each port is enabled, the front panel LED changes from a slow-flashing amber to a nonflashing green for online ports or to a nonflashing amber for ports that do not initialize. Disconnected ports remain unlit.

Notes

You cannot disable a single blade when the entire chassis is disabled or when the blade itself is faulted, powered off, or running diagnostics. Use **chassisEnable** to enable the ports on an entire chassis.

This command does not enable the ports for the given blade in a disabled logical switch.

Persistently disabled ports are not enabled by this command.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operand:

slot

Specifies the slot number to be enabled.

Examples

To display the slot status, enable the user ports in slot 4, and verify the settings:

```
switch:admin> slotshow

Slot    Blade Type    ID      Status
```

```
                    --------------------------------
   1      SW BLADE    2      ENABLED
   2      UNKNOWN            VACANT
   3      UNKNOWN            VACANT
   4      SW BLADE    2      ENABLED  (User Ports Disabled)
   5      CP BLADE    1      ENABLED
   6      CP BLADE    1      ENABLED
   7      SW BLADE    2      ENABLED
   8      UNKNOWN            VACANT
   9      UNKNOWN            VACANT
  10      UNKNOWN            VACANT

switch:admin> bladeenable 4
Blade 4 is being enabled...Done

switch:admin> slotshow

Slot    Blade Type   ID    Status
--------------------------------
   1      SW BLADE    2      ENABLED
   2      UNKNOWN            VACANT
   3      UNKNOWN            VACANT
   4      SW BLADE    2      ENABLED
   5      CP BLADE    1      ENABLED
   6      CP BLADE    1      ENABLED
   7      SW BLADE    2      ENABLED
   8      UNKNOWN            VACANT
   9      UNKNOWN            VACANT
  10      UNKNOWN            VACANT
```

See Also

bladeDisable, chassisDisable, chassisEnable, portDisable, portEnable, switchDisable, switchShow

bladeSwap

Swaps the area numbers for matching port pairs of two blades.

Synopsis

```
bladeSwap -src source_slot -dest destination_slot
```

Description

Use this command to swap the area numbers for matching port pairs of two blades. All ports must qualify for swapping for this command to succeed. It validates that the blades in the indicated slots are of the same type, have the same number of ports, and that the port pairs are in the same partition.

If all the ports qualify for swapping, this command automatically performs the following operations:

1) It enables the port swapping feature by issuing the **portSwapEnable** command.

2) It takes all ports on both the source and destination blades offline by issuing the **bladeDisable** command.

3) It swaps the matching port pairs on each of the specified blades.

4) It re-enables the blade by issuing the **bladeEnable** command.

The result of this operation is persistent across reboots and power cycles.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

This command leaves both the source and destination blades in a disabled state. To enable all ports on a blade, issue the **bladeEnable** command. To enable individual ports, issue the **portEnable** command.

This command affects port swap information that is kept in its own database. It cannot be manipulated by editing the configuration database reported by **configShow.**

This command is not allowed if one or both blades are faulty.

Operands

This command has the following operands:

-src *source_slot*

Specifies the slot number for the source blade.

-dest *destination_slot*

Specifies the slot number for the destination blade. Use **slotShow** for a listing of valid slots.

Examples

To swap area numbers between matching port pairs of two slots:

```
switch:admin> bladeswap -src 1 -dest 3
bladeswap done
```

See Also

bladeDisable, bladeEnable, portDisable, portEnable, portShow, portSwapDisable, portSwapEnable, portSwapShow, switchEnable, switchShow

bladePortMap

Displays the slot or port information.

Synopsis

bladeportmap *slot_number*

Description

Use this command to display the slot or port information mapped to a blade.

Only the chassis-based switches support with *slot_number* option. You can identify the required blade information through **slotShow** command output.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

slot_number

Specifies the slot number on bladed systems.

Examples

To display the slot or port details for a non-bladed system:

```
switch:admin> bladeportmap
miniS=0 chips/Minis=1 bports/chip=40
minis_count=1 chip_count=1 port_count=40

CTL BPt  UPt  SPt  MPt  CPt  IFi  GPt  M#   C#   Sw#  G#   ChID   PBPt:ISL
OID
============================================================================
====================
DIS 0   23   23   0    0    1    0    0    0    0    0    GEYE4 :No_Light
0x43028000
DIS 1   19   19   1    1    2    1    0    0    0    0    GEYE4 :No_Sync
0x43028001
DIS 2   22   22   2    2    3    2    0    0    0    0     GEYE4
:No_Module  0x43028002
DIS 3   18   18   3    3    8    3    0    0    0    0    GEYE4 :No_Sync
0x43028003
DIS 4   21   21   4    4    5    4    0    0    0    0     GEYE4
:No_Module  0x43028004
DIS 5   17   17   5    5    6    5    0    0    0    0    GEYE4 :No_Sync
0x43028005
```

```
DIS 6    20   20   6    6    7    6    0    0    0    0    GEYE4
:No_Module  0x43028006
DIS 7    16   16   7    7    4    7    0    0    0    0    GEYE4 :No_Sync
0x43028007
ENB 8    15   15   8    8    9    0    0    0    0    1    GEYE4
:No_Module  0x43028008
DIS 9    11   11   9    9    10   1    0    0    0    1    GEYE4 :No_Light
0x43028009
(output truncated)
```

To display the slot or port details for a chassis-based system:

```
switch:admin> bladeportmap 1
miniS=0 chips/Minis=1 bports/chip=48
miniS=1 chips/Minis=1 bports/chip=48
minis_count=2 chip_count=2 port_count=96

CTL BPt  UPt  SPt  MPt  CPt  IFi  GPt  M#   C#   Sw#  G#   ChID   PBPt:ISL
OID
=========================================================================
====================
ENB 0    -1   -1   0    0    1    0    0    0    -1   517   CONDOR3 5/
39:    0x43128000
ENB 1    -1   -1   1    1    2    1    0    0    -1   516   CONDOR3 8/
39:    0x43128001
ENB 2    -1   -1   2    2    3    2    0    0    -1   515   CONDOR3 8/
86:    0x43128002
ENB 3    -1   -1   3    3    3    3    0    0    -1   515   CONDOR3 8/
82:    0x43128003
ENB 4    -1   -1   4    4    2    4    0    0    -1   516   CONDOR3 8/
34:    0x43128004
ENB 5    -1   -1   5    5    1    5    0    0    -1   517   CONDOR3 5/
34:    0x43128005
ENB 6    -1   -1   6    6    8    6    0    0    -1   519   CONDOR3 5/
86:    0x43128006
ENB 7    -1   -1   7    7    8    7    0    0    -1   519   CONDOR3 5/
82:    0x43128007
ENB 8    -1   -1   8    8    9    0    0    0    -1   520   CONDOR3 8/
106:   0x43128008
ENB 9    -1   -1   9    9    10   1    0    0    -1   521   CONDOR3 5/
106:   0x43128009
ENB 10   -1   -1   10   10   11   2    0    0    -1   527   CONDOR3 8/
182:   0x4312800a
ENB 11   -1   -1   11   11   12   3    0    0    -1   523   CONDOR3 5/
178:   0x4312800b
ENB 12   -1   -1   12   12   9    4    0    0    -1   520   CONDOR3 8/
111:   0x4312800c
ENB 13   -1   -1   13   13   10   5    0    0    -1   521   CONDOR3 5/
111:   0x4312800d
ENB 14   -1   -1   14   14   12   6    0    0    -1   523   CONDOR3 5/
182:   0x4312800e
ENB 15   -1   -1   15   15   11   7    0    0    -1   527   CONDOR3 8/
178:   0x4312800f
```

```
ENB 16   -1   -1   16   16   17   0    0    0    -1   528   CONDOR3 1/
68:     0x43128010
```

See Also

None

bladeVerShow

Displays versions of FPGA code in various blades and blade components.

Synopsis

```
bladevershow [slot | all]
bladevershow --help
```

Description

Use this command on the active CP to display the system FPGA versions of a switch, a specific blade slot, or all blades.

The behavior of this command is platform-specific; output varies depending on the platform and is unsupported on older platforms.

Notes

This command is intended for Support-related usage only. FPGA version levels can vary among the same blade types due to manufacturing versions and other factors without affecting blade or system functionality.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

slot

Specifies the slot number on bladed systems. Value of 0 may optionally be used for non-bladed systems.

all

Displays FPGA versions of all the blades.

--help

Displays the command usage.

Examples

To display system FPGA version on a non-bladed switch:

```
switch:admin> bladevershow
bladeId:100
==============================
FPGA version        0x0e
```

To display system FPGA versions on a director class switch:

```
switch:admin> bladevershow all
Slot# 1 BladeID: 97  Modelname: FC16-32
==========================================
JTAG_version:           0x1
cpld_version:           0xe_0

Slot# 5 BladeID: 98  Modelname: CR16-8
==========================================
JTAG_version:           0x3
cpld_version:           0x7_0

Slot# 6 BladeID: 50  Modelname: CP8
==========================================
FPGA version            0xd0
CPLD version            0xba

Slot# 7 BladeID: 50  Modelname: CP8
==========================================
FPGA version            0xd0
CPLD version            0xba

Slot# 8 BladeID: 98  Modelname: CR16-8
==========================================
JTAG_version:           0x3
cpld_version:           0x7_0

Slot: 12 is faulty
```

To display a specific blade slot system FPGA:

```
switch:admin> bladevershow 1
Slot# 1 BladeID: 97  Modelname: FC16-32
==========================================
JTAG_version:           0x1
cpld_version:           0xe_0
```

See Also

slotShow, switchShow

bootLunCfg

Transparently configures the boot LUN for an HBA.

Synopsis

```
bootluncfg --add HBA_WWN PWWN LUN_ID
bootluncfg --delete HBA_WWN [PWWN LUN_ID]
bootluncfg --show
bootluncfg --help
```

Description

Use this command to configure the boot LUN for an HBA.

Existing fabric-based boot LUN discovery allows the host's boot LUN information to be stored in the fabric zone database by using a zone name that contains the PWWN of an HBA port. The zone members consist of storage target PWWN and LUN ID.

This command provides a simplified and transparent procedure for configuring the boot LUN. Once configured, the HBA boot code queries the zone member list for the zone name matching the HBA PWWN to determine the boot target and LUN.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

HBA_WWN

Specifies the WWN of the HBA port connecting to the boot LUN. This is a hexadecimal number, for example, 10:00:00:000:05:1e:41:9a:cb.

PWWN

Specifies the WWN of the remote storage target's port. For example, 50:00:00:05:1e:41:9a:ca. This operand is required with the **--add** option and optional with the **--delete** option.

LUN_ID

Specifies the hexadecimal LUN identification. The LUN ID is represented as an eight-byte value (four-level LUN addressing), for example, 09AABBCCDDEEFF00. This operand is required with the **--add** option and optional with the **--delete** option.

--add

Configures the specified HBA (HBA_WWN) to boot from the specified LUN (LUN_WWN) accessible through the Target PWWN (PWWN).

--delete

Removes the mapping for the HBA (HBA_PWWN) to boot from the LUN (LUN_ID) accessible through the Target Port (PWWN).

--show

Displays all configured HBA to Port/LUN Mappings.

--help

Displays the command usage.

Examples

To configure a boot LUN:

```
switch:admin> bootluncfg --add  11:22:ab:44:44:ff:44:ca \
    1b:6c:55:55:55:3a:55:ff 9abc345fa1112410
Operation Successful
```

To display existing Port/LUN mappings:

```
switch:admin> bootluncfg --show

00:11:22:33:44:55:66:77
00:00:00:00:aa:bb:cc:dd;00:00:00:01:ee:ff:11:22; \
00:00:00:02:9a:bc:34:5f;00:00:00:03:a1:11:24:10

aa:aa:aa:aa:aa:aa:aa:aa
00:00:00:00:11:11:11:11;00:00:00:01:11:11:11:11; \
00:00:00:02:9a:bc:34:5f;00:00:00:03:a1:11:24:10

bb:aa:aa:aa:aa:aa:aa:aa
00:00:00:00:11:11:11:11;00:00:00:01:11:11:11:11; \
00:00:00:02:9a:bc:34:5f;00:00:00:03:a1:11:24:10
```

To remove an HBA to Port/LUN mapping:

```
switch:admin> bootluncfg --delete  11:22:ab:44:44:ff:44:ca \
    1b:6c:55:55:55:3a:55:ff 9abc345fa1112410
Operation Successful
```

See Also

None

bufOpMode

Changes or displays the Buffer Optimized Mode.

Synopsis

```
bufopmode --set slot [-force | -f]
bufopmode --setall [-force | -f]
bufopmode --reset slot
bufopmode --resetall [-force | -f]
bufopmode --show slot
bufopmode --showall
```

Description

Use this command to display or change the buffer optimized mode on a switch.

When buffer optimized mode is enabled on a slot, additional buffers are allocated on the internal ports. Use this feature, if you have slow draining devices connected to the slot and there are no long distance links or F_Port buffers configured on that slot.

You must power off the slot before changing the buffer optimized mode. Changes take effect immediately after the slot is powered on

Enabling buffer optimized mode removes all long distance configurations or F_Port buffers on that slot. You will be prompted if any F_Port buffers or long distance configurations are detected.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

This command is supported on the Brocade FC16-32, FC16-48, and FC16-64 blades in a DCX 8510 chassis. An asterisk (*) next to the slot configuration status indicates an unsupported blade. Refer to the example section for an illustration.

Beginning with Fabric OS v8.1.0 or later, this command is not supported on Brocade Gen 6 platforms.

This command is not supported on Control Processor (CP) blades and core blades.

The **--set** operand is not supported in the following conditions on Brocade DCX 8510-family switches:

• On CP blade, core blade, or empty slot. This operand is allowed only when a blade is inserted into an empty slot and buffer optimized mode is enabled on all the other non empty slots.

• If the buffer optimized mode is already enabled on a slot in the chassis with 16G/ps-capable core blades.

• If the buffer optimized mode is not enabled on any slot in the chassis with 16G/ps-capable core blades. You can enable buffer optimized mode on all slots by using the **bufopmode --setall** command.

The **--reset** option is not supported on the control processor (CP) blades, core blades, and FC16 port blades.

The **--setall** and **--resetall** options are not supported on the FC8 core blades.

The 8G blades are supported in the 8G chassis. The 16G blades are supported on the 16G chassis. On 16G chassis, all blades, including the core blades, are enabled at the same time with the **--setall** option.

Operands

This command has the following operands:

slot

Specifies the slot number.

--set [-force | -f]

Enables buffer optimized mode on the specified slot. This commands prompts for confirmation before removing any F_Port buffers or long distance configurations on that slot. Use the **-force** or **-f** option to execute this command without confirmation.

--setall [-force | -f]

Enables buffer optimized mode on all slots. All switches on the chassis must be disabled using the **chassisDisable** command before executing this command. The switch must be rebooted for changes to take effect and therefore this operation is disruptive. The command prompts for confirmation before rebooting the switch. Use the **-force** or **-f** option to execute this command without confirmation.

--reset

Clears buffer optimized mode on the specified slot.

--resetall [-force | -f]

Clears buffer optimized mode on all slots. The switch must be rebooted for changes to take effect and therefore this operation is disruptive. The command prompts for confirmation before rebooting the switch. Use the **-force** or **-f** option to execute this command without confirmation.

--show

Displays the current buffer optimized mode for the specified slot (On or Off).

--showall

Displays the current buffer optimized mode for all slots. An asterisk (*) next to the slot configuration status indicates an unsupported blade.

Examples

To display current buffer optimized mode for a single slot:

```
switch:admin> bufopmode --show 12
Slot 12: buffer optimized mode - On
```

To enable buffer optimized mode for a given slot:

```
switch:admin> bufopmode --set 11
The slot must first be powered off to perform this operation

switch:admin> bufopmode --reset 12
The slot must first be powered off to perform this operation

switch:admin> slotpoweroff 11

switch:admin> slotpoweroff 12

switch:admin> bufopmode --set 12
Buffer optimized mode is turned on for slot 11

switch:admin> bufopmode --reset 12

Buffer optimized mode is turned off for slot 12

switch:admin> slotpoweron 11

switch:admin> slotpoweron 12
```

To display the changes:

```
switch:admin> bufopmode --showall
Slot 1: buffer optimized mode - Off
Slot 2: buffer optimized mode - Off
Slot 3: buffer optimized mode - Off
Slot 4: buffer optimized mode - On
Slot 9: buffer optimized mode - Off
Slot 10: buffer optimized mode - Off
Slot 11: buffer optimized mode - On
Slot 12: buffer optimized mode - Off
-----------------------------------------------------------
* indicates buffer optimization not supported on this blade
```

To display the buffer optimized mode for all slots on a DCX 8510-8 with unsupported 16G port blades:

```
switch:admin> bufopmode --showall

Slot 1: buffer optimized mode - Off*
Slot 2: buffer optimized mode - Off*
Slot 3: buffer optimized mode - Off*
Slot 4: buffer optimized mode - Off*
Slot 5: buffer optimized mode - Off*
Slot 8: buffer optimized mode - Off*
Slot 9: buffer optimized mode - Off*
Slot 10: buffer optimized mode - Off*
```

```
Slot 11: buffer optimized mode - Off*
Slot 12: buffer optimized mode - Off*

-----------------------------------------------------------
* indicates buffer optimization not supported on this blade
```

To enable buffer optimized mode on all slots:

```
switch:admin> chassisdisable

switch:admin> bufopmode --setall
Buffer optimized mode is turned on for slot 5
Buffer optimized mode is turned on for slot 8
Buffer optimized mode is turned on for slot 10
Buffer optimized mode is turned on for slot 12

WARNING: Must reboot switch for changes to take effect. Reboot now [y/
n]? y
```

To clear buffer optimized mode on all slots:

```
switch:admin> bufopmode --resetall
Buffer optimized mode is turned off for slot 5
Buffer optimized mode is turned off for slot 8
Buffer optimized mode is turned off for slot 10
Buffer optimized mode is turned off for slot 12

WARNING: Must reboot switch for changes to take effect. Reboot now [y/
n]? y
```

See Also

slotShow, slotPowerOn, slotPowerOff

cfgActvShow

Displays effective zone configuration information.

Synopsis

```
cfgactvshow
```

Description

Use this command to display the effective zone configuration information.

The current configuration is a single zone configuration that is currently in effect. The devices that an initiator sees are based on this configuration. The effective configuration is built when a specified zone configuration is enabled.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To display the effective zone configuration information:

```
switch:admin> cfgactvshow
Effective configuration:
cfg:    c4
zone:   z3      33:07:06:05:04:03:02:01
zone:   z4      44:01:23:45:67:89:a0:bc
                40:01:23:45:67:89:a0:bc
```

See Also

cfgClear, cfgDelete, cfgRemove, cfgSave, cfgShow

cfgAdd

Adds a member to a zone configuration.

Synopsis

cfgadd "*cfgName*", "*member[; member...]*"

Description

Use this command to add one or more members to an existing zone configuration.

This command changes the Defined Configuration. For the change to take effect, enable the configuration with the **cfgEnable** command. For the change to be preserved across switch reboots, save the configuration to nonvolatile memory with the **cfgSave** command.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

When an FCS policy is enabled, this command can be issued only from the primary FCS switch.

This command is not supported on the Brocade Analytics Monitoring Platform.

Operands

The following operands are required:

"*cfgName*"

Specify a name for the zone configuration, enclosed in double quotation marks.

Refer to the **cfgCreate** command for more information on name and member specifications. The dollar sign ($) must be prefixed with a backslash (\) while using it in the command prompt.

"*member*"

Specify a zone member or a list of zone members to be added to the configuration. The list must be enclosed in double quotation marks. Members must be separated by semicolons.

Examples

To add two new zones to the configuration "Test_cfg":

switch:admin> **cfgadd "Test_cfg", "greenzone;bluezone"**

See Also

cfgClear, cfgCreate, cfgDelete, cfgDisable, cfgEnable, cfgRemove, cfgSave, cfgShow

cfgClear

Clears all zone configurations.

Synopsis

```
cfgclear
```

Description

Use this command to clear all zone information in the transaction buffer. All defined zone objects in the transaction buffer are deleted. If an attempt is made to commit the empty transaction buffer while a zone configuration is enabled, you are warned to first disable the enabled zone configuration or to provide a valid configuration with the same name.

After clearing the transaction buffer with the **cfgClear** command, use the **cfgDisable** command to clear the entire zoning configuration (both the transaction buffer and the active configuration). If there is no current active zoning configuration, or you just want to clear the transaction buffer, use the **cfgSave** command to commit the transaction.

If the default zone access mode is "No Access", this command recreates the default zoning objects.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

When an FCS policy is enabled, this command can be issued only from the primary FCS switch.

Operands

None

Examples

To clear all zones and then clear nonvolatile memory:

```
switch:admin> cfgclear
The Clear All action will clear all Aliases, Zones, FA Zones
and configurations in the Defined configuration.
Run cfgSave to commit the transaction or cfgTransAbort to
cancel the transaction.
Do you really want to clear all configurations? \
  (yes, y, no, n): [no] n

switch:admin> cfgsave
You are about to save the Defined zoning configuration. This
action will only save the changes on Defined configuration.
Any changes made on the Effective configuration will not
take effect until it is re-enabled. Until the Effective
configuration is re-enabled, merging new switches into the
```

```
fabric is not recommended and may cause unpredictable
results with the potential of mismatched Effective Zoning
configurations.
Do you want to save Defined zoning configuration only? \
   (yes, y, no, n): [no]n
```

See Also

cfgDisable, cfgEnable, cfgSave

cfgCreate

Creates a zone configuration.

Synopsis

cfgcreate "*cfgName*", "*member*[;*member*...]"

Description

Use this command to create a new zone configuration.

This command changes the Defined Configuration (see **cfgShow**). For the change to become effective, enable the configuration with the **cfgEnable** command. For the change to be preserved across switch reboots, save the configuration to nonvolatile memory with the **cfgSave** command.

Refer to the **zoneCreate** command for more information on *name* and *member* specifications.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

When an FCS policy is enabled, this command can be issued only from the primary FCS switch.

This command is not supported on the Brocade Analytics Monitoring Platform.

Operands

The following operands are required:

"*cfgName*"

Specify a name for the zone configuration in double quotation marks. A zone configuration name can either begin with a letter or number and can consist of letters, numbers, hyphen (-), underscore (_), dollar ($), or caret (^) characters. Names are case-sensitive. For example, "Cfg_1" and "cfg_1" are different zone configurations. Blank spaces are ignored.

The dollar sign ($) must be prefixed with a backslash (\) while using it in the command prompt.

"*member*"

Specify a zone member or list of zone members to be added to the configuration. The list must be enclosed in double quotation marks. Members must be separated by semicolons. The zone configuration member list must have at least one member. Empty member lists are not allowed.

Examples

To create a configuration containing three zones:

```
switch:admin> cfgcreate "USA_cfg",  \
"Purple_zone;Blue_zone;Green_zone"
```

See Also

cfgAdd, cfgClear, cfgDelete, cfgDisable, cfgEnable, cfgRemove, cfgSave, cfgShow

cfgDelete

Deletes a zone configuration.

Synopsis

cfgdelete "*cfgName*"

Description

Use this command to delete a zone configuration.

This command changes the Defined Configuration (see **cfgShow**). For the change to become effective, enable the configuration with the **cfgEnable** command. For the change to be preserved across switch reboots, save the configuration to nonvolatile memory with the **cfgSave** command.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

When an FCS policy is enabled, this command can be issued only from the primary FCS switch.

Operands

The following operand is required:

"*cfgName*"

Specify a name for the zone configuration to be deleted. The name must be enclosed in double quotation marks.

Refer to the **cfgCreate** command for more information on name and member specifications. The dollar sign ($) must be prefixed with a backslash (\) while using it in the command prompt.

Examples

To delete a zone configuration:

switch:admin> **cfgdelete "USA_cfg"**

See Also

cfgClear, cfgDisable, cfgEnable, cfgRemove, cfgSave, cfgShow

cfgDisable

Disables a zone configuration.

Synopsis

```
cfgdisable [-force | -f]
```

Description

Use this command to disable the current zone configuration. The fabric returns to non-zoning mode, a mode in which all devices can see each other.

This command ends and commits the current zoning transaction buffer to both volatile and nonvolatile memory. If a transaction is open on a different switch in the fabric when this command is run, the transaction on the other switch is automatically aborted. A message displays on the other switches to indicate that the transaction was aborted.

If the default zone access mode is "No Access", then this command becomes equivalent to **cfgEnable "d_efault_Cfg"**. Refer to **defZone** help for information on zone access configuration.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

When an FCS policy is enabled, this command can be issued only from the primary FCS switch.

Operands

This command has the following operand:

-force | -f

Disables the zone configuration without confirmation. This operand is optional.

Examples

To disable the current zone configuration:

```
switch:admin> cfgdisable
You are about to disable zoning configuration. This
action will disable any previous zoning configuration.
Do you want to disable zoning configuration? \
    (yes, y, no, n): [no] y
```

To disable the current zone configuration with the **-force** option:

```
switch:admin> cfgdisable -force
You have disabled zoning configuration. This
action disabled any previous zoning configuration enabled.
Note: The above operation was performed without user prompting
      due to using the '-force' option.
```

See Also

cfgClear, cfgEnable, cfgSave

cfgEnable

Enables a zone configuration.

Synopsis

cfgenable "*cfgName*" [**-force** | **-f**]

Description

Use this command to enable a zone configuration. The command builds the specified zone configuration. It checks for undefined zone names, zone alias names, or other inconsistencies, by expanding zone aliases, removing duplicate entries, and then installing the effective configuration.

If the build fails, the previous state is preserved (zoning remains disabled, or the previous effective configuration remains in effect). If the build succeeds, the new configuration replaces the previous configuration. Refer to the **cfgShow** command for a description of the defined and effective configurations.

If there are open transactions in the fabric, only single transaction can be saved. Use the **cfgtransshow --opentrans** command to view the list of all the domains in the fabric with open transactions.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

When an FCS policy is enabled, this command can be issued only from the primary FCS switch.

Operands

This command has the following operands:

"*cfgName*"

Specifies the name of the zone configuration. The name must be enclosed in double quotation marks.

Refer to the **cfgCreate** command for more information on name and member specifications. The dollar sign ($) must be prefixed with a backslash (\) while using it in the command prompt.

-force | -f

Enables the zone configuration without confirmation. This operand is optional.

Examples

To enable the zone configuration USA_cfg:

```
switch:admin> cfgenable "USA_cfg"
You are about to enable a new zoning configuration.
This action will replace the old zoning configuration with the
current configuration selected. If the update includes changes
to one or more traffic isolation zones, the update may result in
localized disruption to traffic on ports associated with
the traffic isolation zone changes
Do you want to enable 'USA_cfg' configuration  \
    (yes, y, no, n): [no] y
zone config "USA_cfg" is in effect
Updating flash ...
```

To enable the zone configuration USA_cfg when there are open transactions in the fabric:

```
switch:admin> cfgenable "USA_cfg"
You are about to enable a new zoning configuration.
This action will replace the old zoning configuration with the
current configuration selected. If the update includes changes
to one or more traffic isolation zones, the update may result in
localized disruption to traffic on ports associated with
the traffic isolation zone changes
Multiple open transactions are pending in this fabric. Only one
transaction can be saved.Please abort all unwanted transactions
using the cfgtransabort command. Use the cfgtransshow --opentrans
command to display a list of domains with open transactions
switch:admin> cfgtransabort 271010736
switch:admin> cfgenable "USA_cfg"
You are about to enable a new zoning configuration.
This action will replace the old zoning configuration with the
current configuration selected. If the update includes changes
to one or more traffic isolation zones, the update may result in
localized disruption to traffic on ports associated with
the traffic isolation zone changes
Do you want to enable 'USA_cfg' configuration  \
    (yes, y, no, n): [no] y
zone config "USA_cfg" is in effect
Updating flash ...
```

To enable the zone configuration USA_cfg with **-force** option:

```
switch:admin> cfgenable "USA_cfg" -force
You have enabled a new zoning configuration.
This action replaced the old zoning configuration with the
current configuration selected. If the update includes changes
to one or more traffic isolation zones, the update may result in
localized disruption to traffic on ports associated with
the traffic isolation zone changes.
Note: The above operation was performed without user prompting
      due to using the '-force' option.
```

See Also

cfgClear, cfgDisable, cfgSave, cfgShow

cfgRemove

Removes a member from a zone configuration.

Synopsis

cfgremove "*cfgName*","*member[; member...]*"

Description

Use this command to remove one or more members from an existing zone configuration. If all members are removed, the zone configuration is deleted.

This command changes the Defined Configuration (see **cfgShow**). For the change to become effective, enable the configuration with the **cfgEnable** command. For the change to be preserved across switch reboots, save the configuration to nonvolatile memory with the **cfgSave** command.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

When an FCS policy is enabled, this command can be issued only from the primary FCS switch.

Operands

The following operands are required:

"*cfgName*"

Specify a name for the zone configuration, enclosed in double quotation marks.

Refer to the **cfgCreate** command for more information on name and member specifications. The dollar sign ($) must be prefixed with a backslash (\) while using it in the command prompt.

"*member*"

Specify a zone member or a list of zone members to be removed from the configuration. The list must be enclosed in double quotation marks. Members must be separated by semicolons.

Examples

To remove a zone from a configuration:

```
switch:admin> cfgremove "Test_cfg", "bluezone"
```

See Also

cfgClear, cfgDelete, cfgDisable, cfgEnable, cfgSave, cfgShow, cfgTransAbort, cfgTransShow

cfgSave

Saves the zone configuration to nonvolatile memory.

Synopsis

```
cfgsave [-force | -f]
```

Description

Use this command to save the current zone configuration. This command writes the defined configuration and the name of the effective configuration to nonvolatile memory in all switches in the fabric.

The saved configuration is automatically reloaded at power on, and, if a configuration was in effect at the time it was saved, the same configuration is reinstalled with an automatic **cfgEnable** command.

Because the saved configuration is reloaded at power on, only valid configurations are saved. The **cfgSave** command validates the effective configuration by performing the same tests as the **cfgEnable** command. If the tests fail, an error message is displayed and the configuration is not saved.

This command ends and commits the current transaction. If a transaction is open on a different switch in the fabric when this command is run, the transaction on the other switch is automatically aborted. A message displays on the other switches to indicate that the transaction was aborted.

If there are open transactions in the fabric, only single transaction can be saved. Use the **cfgtransshow --opentrans** command to view the list of all the domains in the fabric with open transactions.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

When an FCS policy is enabled, this command can be issued only from the primary FCS switch.

Operands

This command has the following operand:

-force | -f

Saves the zone configuration without confirmation. This operand is optional.

Examples

To save a zone configuration:

```
switch:admin> cfgsave
WARNING!!!
```

```
The changes you are attempting to save will render the
Effective configuration and the Defined configuration
inconsistent. The inconsistency will result in different
Effective Zoning configurations for switches in the fabric if
a zone merge or HA failover happens. To avoid inconsistency
it is recommended to commit the configurations using the
cfgenable command.
Do you want to save Defined zoning configuration
     only?  (yes, y, no, n): [no]y
```

To save a zone configuration if there are multiple open transactions:

```
switch:admin> cfgsave
You are about to save the Defined zoning configuration. This
action will only save the changes on Defined configuration.
Multiple open transactions are pending in this fabric. Only one
transaction can be saved.Please abort all unwanted transactions
using the cfgtransabort command. Use the cfgtransshow --opentrans
command to display a list of domains with open transactions
Do you want to save the Defined zoning configuration only?  (yes, y,
no, n): [no] n
switch:admin> cfgtransabort 271010736
switch:admin> cfgsave
You are about to save the Defined zoning configuration. This
action will only save the changes on Defined configuration.
If the update includes changes to one or more traffic isolation
zones, you must issue the 'cfgenable' command for the changes
to take effect.
Do you want to save the Defined zoning configuration only?  (yes, y,
no, n): [no] y
```

To save a zone configuration with **-force** option:

```
switch:admin> cfgsave -force
You have force saved the Defined zoning configuration. This
action only saved the changes on Defined configuration.
If the update includes changes to one or more traffic isolation
zones, you must issue the 'cfgenable' command for the changes
to take effect.
Note: The above operation was performed without user prompting
     due to using the '-force' option.
```

See Also

cfgClear, cfgDelete, cfgDisable, cfgEnable, cfgRemove, cfgShow, cfgTransAbort, cfgTransShow

cfgShow

Displays zone configuration information.

Synopsis

```
cfgshow [--ic] [-verbose]["pattern"] [, mode]
cfgshow --transdiffs [-verbose]
cfgshow --transdiffsonly [-verbose]
cfgshow --verbose
cfgshow --help
```

Description

Use this command to display zone configuration information.

If no operand is specified, all zone configuration information (both defined and effective) is displayed. If the local switch has an outstanding transaction, this command displays the most recently edited zone configuration that has not yet been saved. If the local switch has no outstanding transaction, this command displays the committed zone configuration.

If a pattern is specified, only matching configurations are displayed.

- The **defined configuration** is the complete set of all zone objects that have been defined in the fabric. There can be multiple zone configurations defined, but only one can be enabled at a time. There might be inconsistencies in the definitions, zones, or aliases that are referenced but not defined, or there might be duplicate members. The defined configuration is the current state of the administrator input.

- The **effective configuration** is the single zone configuration that is currently enabled. The devices that an initiator sees in the fabric are based on this configuration. The effective configuration is built when a specific zone configuration is enabled and all error checking has been completed successfully.

Use the **--transdiffs** and **--transdiffsonly** options to view changes in the current transaction.

The command output displays changes in the current transaction by the following notations:

- An asterisk(*) before any tag indicates a change in that zone, zone configuration, alias or any other entity in the zone configuration.

- A plus(+) before any entity indicates that it is a newly added entity.

- A minus(-) before any entity indicates that it is a deleted entity.

When this command is executed after a zoning transaction was aborted on the local switch, it displays the following warning message: "Warning: Current Zoning Transaction was aborted. Reason code = Zone Config update received."

When default zoning is enabled with "No Access" mode, "No Effective configuration: (No Access)" is displayed.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

The following operands are optional:

--ic

Displays all zone configuration names for a given pattern without case distinction.

Refer to the **cfgCreate** command for more information on name and member specifications. The dollar sign ($) must be prefixed with a backslash (\) while using it in the command prompt.

"*pattern*"

A regular expression that matches zone configuration names. The pattern must be enclosed in quotation marks and can contain the following:

Question mark (?)

Matches any single character

Asterisk (*)

Matches any string of characters.

Range

Matches any character within the range. Ranges must be enclosed in square brackets, for example, [0-9] or [a-f].

mode

Specify **0** to display the contents of the transaction buffer (the contents of the current transaction), **1** to display the contents of committed defined database, and **2** to display the contents of effective zone configuration. The default value is 0.

-verbose

Displays the property members of peer zones along with the default **cfgShow** command output.

--transdiffs

Displays changes in the current transaction.

-verbose

> Displays the property members of peer zones along with the default **--transdiffs** command output.

--transdiffsonly

> Displays only the changes in the current transaction.

-verbose

> Displays the property members of peer zones along with the default **--transdiffsonly** command output.

--verbose

> Displays the property members of peer zones along with the default **cfgShow** command output.

Examples

> To display all zone configurations that start with "Test":

```
switch:admin> cfgshow "Test*"
cfg:    Test1 Blue_zone
cfg:    Test_cfg Red_zone; Blue_zone
```

> To display all zone configurations that start with "Test", regardless of the case:

```
switch:admin> cfgshow -ic "Test*"
cfg:    Test1 Blue_zone
cfg:    TEST2_cfg Red_zone; Blue_zone
```

> To display all zone configuration information:

```
switch:admin> cfgshow
Defined configuration:
cfg:    USA1     Blue_zone
cfg:    USA_cfg Red_zone; Blue_zone
zone:   Blue_zone
        1,1; array1; 1,2; array2
zone:   Red_zone
        1,0; loop1
alias: array1  21:00:00:20:37:0c:76:8c; \
     21:00:00:20:37:0c:71:02
alias: array2  21:00:00:20:37:0c:76:22; \
     21:00:00:20:37:0c:76:28
alias: loop1   21:00:00:20:37:0c:76:85; \
     21:00:00:20:37:0c:71:df

Effective configuration:
cfg:    USA_cfg
zone:   Blue_zone
         1,1
         21:00:00:20:37:0c:76:8c
```

```
                    21:00:00:20:37:0c:71:02
                    1,2
                    21:00:00:20:37:0c:76:22
                    21:00:00:20:37:0c:76:28
zone:   Red_zone
                    1,0
                    21:00:00:20:37:0c:76:85
                    21:00:00:20:37:0c:71:df
```

To display only configuration names:

```
switch:admin> cfgshow "*"
cfg:    USA1    Blue_zone
cfg:    USA_cfg Red_zone; Blue_zone
```

To display changes in the current transaction:

```
switch:admin> cfgshow --transdiffs
Defined configuration:
cfg:    fabric_cfg Blue_zone

zone:   Blue_zone
                    1,1; array1; 1,2; array2

*zone:  green_zone
                    -1,1; 1,2; +6, 15

*zone: +red_zone
                    5,1; 4,2

alias: array1  21:00:00:20:37:0c:76:8c; \
    21:00:00:20:37:0c:71:02
                    alias: array2  21:00:00:20:37:0c:76:22; \
    21:00:00:20:37:0c:76:28

Effective configuration:
cfg:    fabric_cfg
zone:   Blue_zone
                    1,1
                    21:00:00:20:37:0c:76:8c
                    21:00:00:20:37:0c:71:02
                    1,2
```

To display only the changes in the current transaction:

```
switch:admin> cfgshow --transdiffsonly
*zone:  -Blue_zone
                    21:00:00:20:37:0c:76:8c
                    21:00:00:20:37:0c:71:02


*zone:  green_zone
                    1,1; -1,2;+5,4;+ 21:00:00:20:37:0c:76:55

*zone:  +red_zone
                    5,4; 5,6
```

To display the property members of peer zones:

```
switch:admin> cfgshow --verbose
Defined configuration:
Defined configuration:
cfg:          c2            peer_zone3; peer_zone5; peer_zone7
zone:   peer_zone1        00:02:00:00:00:02:01:01; test1; edit123;
alias67
zone:   peer_zone2          00:02:00:00:00:03:00:01;
30:08:00:05:33:88:e3:f3;
                            30:08:00:05:33:88:e3:f4;
30:08:00:05:33:88:e3:f5
zone:   peer_zone3          00:02:00:00:00:03:01:02; edit123;
alias67; test1
zone:   peer_zone5          00:02:00:00:00:03:03:06; alias67;
edit123; test1
zone:   peer_zone7        00:02:00:00:00:02:01:02; edit123; alias67

Effective configuration:
cfg:          c2
zone:   peer_zone3
                            00:02:00:00:00:03:01:02
                            30:08:00:05:33:88:e3:f5
                            30:08:00:05:33:88:e3:f6
                            30:08:00:05:33:88:e3:f8
                            30:08:00:05:33:88:e3:f7
                            30:08:00:05:33:88:e3:fa
                            30:08:00:05:33:88:e3:fc
zone:   peer_zone5
                            00:02:00:00:00:03:03:06
                            30:08:00:05:33:88:e3:f5
                            30:08:00:05:33:88:e3:f6
                            30:08:00:05:33:88:e3:f8
                            30:08:00:05:33:88:e3:f7
                            30:08:00:05:33:88:e3:fa
                            30:08:00:05:33:88:e3:fc
zone:   peer_zone7
                            00:02:00:00:00:02:01:02
                            7,6
                            7,7
                            7,4
                            7,5
                            7,10
                            7,11
```

See Also

cfgClear, cfgDelete, cfgDisable, cfgEnable, cfgRemove, cfgSave, cfgTransAbort, cfgTransShow

cfgSize

Displays zone database size details.

Synopsis

```
cfgsize [integer]
```

Description

Use this command to display the size details of the zone database.

The size details include maximum size, the committed size, and the transaction size of the Zone database in bytes.

Chassis-Wide Committed Zone DB size

Displays the committed zone database size of all partitions.

Zone DB maximum size

Defines the upper limit for the Zone defined configuration, determined by the amount of nonvolatile memory available for storing the defined configuration. The Zone DB maximum size is further reduced due to a message header that is propagated with the zone configuration to all switches in the fabric.

The maximum supported zone database size is 2 MB for chassis based switches and 1 MB for other switches.

Available Zone DB size

Displays the size of the database that is actually available for storage.

Committed size

Displays the size of the defined configuration currently stored in nonvolatile memory.

Transaction size

Displays the size of the uncommitted defined configuration. This value will be nonzero if the defined configuration is being modified by Telnet, API, and so forth; otherwise it is 0.

Refer to the **cfgShow** help page for a description of defined and effective zone configurations.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

In Virtual Fabric environments, the zone database size of all partitions taken together cannot exceed 2 MB for chassis based switches and 1 MB for other switches. Exceeding the zone

database size limit can result in unexpected behavior. Note that in Virtual Fabric mode, the zone database limit is enforced per partition, but not chassis-wide.

Operands

The following operand is optional:

integer

If a nonzero integer is specified, the size of the nonvolatile memory allocated for the zone database is displayed. The zone database includes both the defined and effective configurations. The database size is displayed in bytes.

Examples

To display the zone database on a Brocade 6510

```
switch:admin> cfgsize

Chassis-Wide Committed Zone DB size - 1086 bytes
Zone DB max size - 1045274 bytes
Available Zone DB size - 1044188 bytes
      committed - 74
     transaction - 0
```

See Also

cfgShow, zoneHelp

cfgTransAbort

Aborts the current zoning transaction.

Synopsis

cfgtransabort [*token*]

Description

Use this command to abort the current zoning transaction without committing it. All changes made since the transaction was started are removed and the zone configuration database is restored to the state before the transaction was started.

If a transaction is open on a different switch in the fabric when this command is run, the transaction on the other switch remains open and unaffected.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

When an FCS policy is enabled, this command can be issued only from the primary FCS switch.

Operands

When invoked without an operand, this command aborts the current transaction. The following operand is optional:

token

Specify the token ID of the transaction to be aborted. Use the **cfgTransShow** command to obtain the token ID of a transaction.

Examples

To abort the current transaction:

switch:admin> **cfgtransabort**

See Also

cfgClear, cfgDelete, cfgDisable, cfgEnable, cfgRemove, cfgSave, cfgShow, cfgTransShow

cfgTransShow

Displays information about the current zoning transaction.

Synopsis

```
cfgtransshow
cfgtransshow --opentrans
cfgtransshow --help
```

Description

Use this command to display the ID of the current zoning transaction. In addition, the command provides information on whether or not the transaction can be aborted. The transaction cannot be aborted if it is an internal zoning transaction.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

When an FCS policy is enabled, this command can be issued only from the primary FCS switch.

Operands

This command has the following operands:

--opentrans

Displays local open transaction token details and the list of domains with open transactions.

--help

Displays the command usage.

Examples

To display the current transaction:

```
switch:admin> cfgtransshow
There is no outstanding zone transaction

switch:admin> cfgclear
Do you really want to clear all configurations?  \
   (yes, y, no, n): [no] y
Clearing All zoning configurations...

switch:admin> cfgtransshow
Current transaction token is 271010736
It is abortable
```

To display the current transaction and the list of domains with open transactions:

```
switch:admin> cfgtransshow --opentrans
Current transaction token is 0x3109
It is abortable

Transactions Detect: Capable


Current Open Transactions
Domain List:
-------------------------
 1 2 3 4
```

See Also

cfgClear, cfgDelete, cfgDisable, cfgEnable, cfgRemove, cfgSave, cfgShow, cfgTransAbort

chassisBeacon

Sets chassis beaconing mode.

Synopsis

```
chassisbeacon [mode]
```

Description

Use this command to enable or disable beaconing on a chassis. Chassis beaconing can be used to locate a failing chassis in a group of chassis. Use the **portBeacon** command to locate a failing port, and use the **switchBeacon** command to locate a failing (logical) switch.

When beaconing mode is turned on, the port LEDs flash green at various rates across the chassis. The beaconing continues until you turn it off.

Beaconing mode takes over the port LEDs. The normal flashing LED pattern associated with an active, faulty, or disabled port is suppressed, and only the beaconing pattern is shown. Other commands are still executable and functional. However, if diagnostic frame-based tests such as **portLoopbackTest** are executed, the diagnostic LED pattern is interleaved with the beaconing pattern.

The **chassisBeacon** command is one of the commands that control beaconing. Each command has a clearly defined scope of action:

- The **portBeacon** command enables or disables beaconing on a specified port.

- The **switchBeacon** command enables or disables beaconing on all ports in the current logical switch.

- The **chassisBeacon** command enables or disables beaconing on all ports in the chassis.

- The **portPeerBeacon** command enables or disables beaconing to identify the interconnections between ports.

The actions of the beaconing commands are independent and mutually exclusive. For example, if you enabled beaconing on the logical switch and you want to enable beaconing on the entire chassis, you must first disable switch beaconing with the **switchBeacon** command before you can use the **chassisBeacon** command to enable beaconing on the entire chassis. Likewise, existing **portBeacon** settings remain unaffected if you enable or disable beaconing on the switch or on the chassis. Failure to disable existing beaconing commands before using a different type of beaconing may cause the commands to interfere with each other in unexpected ways.

On a Brocade X6 Director, enabling chassis beaconing activates beaconing on CP blades also.

To determine whether or not beaconing is enabled or disabled on the switch or chassis, use the **switchBeacon** or **chassisBeacon** command without operands. A value of 0 indicates that the command is disabled, a value of 1 indicates that the command is enabled. Issue the **portBeacon --show**command to display beaconing for a specific port. The **switchShow** command displays the status of the **switchBeacon** command only.

Notes

> The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

> This command has the following operand:
>
> ***mode***
>
>> Specify 1 to enable chassis beaconing mode or 0 to disable beaconing mode. This operand is optional. If no operand is specified, the current value is displayed.

Examples

> To turn chassis beaconing mode on:
>
> ```
> switch:admin> chassisbeacon 1
> Chassis beacon success 1
> ```
>
> To turn beaconing mode off:
>
> ```
> switch:admin> chassisbeacon 0
> Chassis beacon success 0
> ```
>
> To display the chassis beaconing mode:
>
> ```
> switch:admin> chassisbeacon
> Value = 0
> ```

See Also

> portBeacon, switchShow, switchBeacon, portPeerBeacon

chassisCfgPerrThreshold

Configures parity error threshold and fault capability on a blade or switch.

Synopsis

```
chassiscfgperrthreshold --enable [-threshold threshold_value]
chassiscfgperrthreshold --disable
chassiscfgperrthreshold --show
chassiscfgperrthreshold --help
```

Description

Use this command to enable or disable the fault capability on a blade and switch based on the parity error threshold, to set the threshold value for parity errors, or to display the configuration. If the fault capability is enabled, the state of the blade or switch changes to Faulty when the parity errors exceed the threshold value within a time interval of 5 minutes. The default threshold value is 2. You can modify the threshold using the **-threshold** *threshold_value* option.

The configuration is persistent across system reboots and high availability (HA) failover.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--enable

Enables the fault capability on a blade or switch. The default threshold value is 2. The following operand is optional:

-threshold *threshold_value*

Specifies the threshold value for parity errors. The range is from 2 through 100.

--disable

Disables the fault capability on a blade or switch.

--show

Displays the configured threshold value and the current status of the fault capability as enabled or disabled.

--help

Displays the command usage.

Examples

To enable fault capability:

```
switch:admin> chassiscfgperrthreshold --enable
```

To disable fault capability:

```
switch:admin> chassiscfgperrthreshold --disable
```

To enable fault capability and set the threshold value to 76:

```
switch:admin> chassiscfgperrthreshold --enable -threshold 76
```

To display the configuration:

```
switch:admin> chassiscfgperrthreshold --show
Configured Threshold is 76 and the Fault is enabled.
```

See Also

None

chassisDisable

Disables all user ports in a chassis.

Synopsis

chassisdisable [**-force**]

Description

Use this command to disable a Virtual Fabric-aware chassis. All Fibre Channel ports are taken offline. This command prompts for confirmation unless the **-force** option is used. If the chassis is partitioned into logical switches that are part of logical fabrics, the remaining switches in these fabrics reconfigure. As each port is disabled, the front panel LED changes to a slow-flashing amber.

You must disable the chassis before making configuration changes or running offline diagnostic tests. Commands that require the chassis to be disabled generate an error message if invoked while the chassis is enabled. It is not necessary to disable a chassis before rebooting or powering off the switch.

To disable the ports of a single logical switch, use the **switchDisable** command. To disable the ports of a single blade, use the **bladeDisable** command.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

-force

Disables the chassis without confirmation. This operand is optional.

Examples

To disable a chassis:

```
switch:admin> chassisdisable
This command can cause disruption to\
     multiple logical switches.
Are you sure you want to disable all chassis ports now?\
 (yes, y, no, n): [no]y
```

See Also

bladeDisable, bladeEnable, chassisEnable, switchShow, switchDisable, switchEnable, switchCfgPersistentEnable, switchCfgPersistentDisable

chassisDistribute

Distributes IP filter policies.

Synopsis

```
chassisdistribute -db ipfilter -fid target_FID  [-force]
chassisdistribute -db ipfilter -domain target_domain_list [-force]
```

Description

Use this command to manually distribute the IP Filter policy database. The behavior of this command depends on whether Virtual Fabrics are enabled or disabled.

- If Virtual Fabrics are enabled on the originating switch, this command distributes the IP filter policy database to all chassis that are connected through the specified logical switch (FID). If the target chassis has Virtual Fabrics enabled, the IP filter policy database is distributed to all logical switches configured on the target. If Virtual Fabrics are not enabled on the target, the IP filter policy database is distributed to the default logical switch of the target.

- If Virtual fabrics are disabled on the originating switch, the IP filter policy database is distributed to a list of target switches specified by their Domain IDs. If a target domain has Virtual Fabrics enabled, the IP filter policy database is distributed to all logical switches on the target domain. If Virtual Fabrics are not enabled on the target domain, the IP filter policy database is distributed to the default logical switch of the target domain.

This command distributes the entire IP Filter database and overwrites any existing IP Filter policies on the receiving switches. The **chassisDistribute** command does not enforce FCS policy.

The target chassis or switches must be capable of accepting the distribution. The distribution is aborted if one of the connected chassis or domains is configured to reject the distribution. Use the **fddCfg** command to configure the fabric-wide policies that control distribution behavior.

When upgrading from pre-7.2.0 to 7.2.0 or later versions, the RPC port rules will be removed from the IP Filter policy database.

The command output includes the following information:

FID

Indicates whether Virtual Fabrics are enabled or not on the domain that receives the distribution. If Virtual Fabrics are enabled, the FID is displayed, and all logical switches which are part of the chassis are targeted to receive the distribution.

DOMAIN

Displays the Domain ID of the originating switch.

CHASSISWWN

Displays the WWN of the originating or receiving chassis. Displays the originating switch WWN in switches running Fabric OS versions that do not support the chassis WWN feature.

CHASSISNAME

Displays the name of the chassis.

SUPPORTED_DIST

Displays yes if the distribution is supported on the receiving chassis. Displays no if the distribution is not supported.

Notes

This command distributes the IP Filter database only. To distribute other security databases, use the **distribute** command.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

-db ipfilter

Specifies the policy database to be distributed with this command. The only accepted value for **-db** is **ipfilter**. The database name is case insensitive. The legacy notation ("IPFILTER") still works but is not necessary. The following operands are mutually exclusive:

-fid *target_FID*

Specifies the target logical switch for the distribution. The logical switch is identified by its fabric ID (FID). When a FID is specified, the database is distributed to all chassis that are connected to the specified logical switch (FID) and are configured to accept the distribution. This operand is required and valid only when the originating switch is in Virtual Fabric mode.

-domain *target_domain_list*

Specifies a list of target switch domain IDs that should receive the database. The list must be enclosed in double quotation marks; members must be separated by a semicolon. A wildcard (*) may be specified to include all switches in the fabric that support the distribute feature. This operand is required and valid only when Virtual Fabrics are disabled.

-force

Distributes the database without confirmation.

Examples

To distribute the IP Filter policies to all chassis that are connected through the logical fabric 128 and support the distribute feature:

```
switch:admin> chassisDistribute -db ipfilter -fid 128
```

```
FID    DOMAIN    CHASSISWWN         CHASSISNAME SUPPORTED_DIST
 -----------------------------------------------------------
 128     3 10:00:00:05:1e:38:ac:0e  DCX_93              yes
 NON-VF 4 10:00:00:05:1e:39:bd:0f  Brocade300          yes
 128    98 10:00:00:05:1e:41:22:9f  Brocade6510          no

chassisDistribute will distribute the database(s) to \
above topology.
Would you like to continue [Y/N] : y
ChassisDistribute operation succeeded for above topology
```

To distribute the IP Filter policies to all switches in the fabric that support the distribute feature
(Virtual Fabrics are disabled on the evoking switch):

```
switch:admin> chassisDistribute -db ipfilter -domain "*"
FID    DOMAIN     CHASSISWWN        CHASSISNAME SUPPORTED_DIST
 -----------------------------------------------------------
128     3 10:00:00:05:1e:38:ac:0e DCX_93              no
NON-VF 4 10:00:00:05:1e:39:bd:0f Brocade300          yes

128    98 10:00:00:05:1e:41:22:9f Brocade6510         no
ChassisDistribute will distribute the database(s) to \
above topology.
Would you like to continue [Y/N] : y
ChassisDistribute operation succeeded for above topology
```

See Also

distribute, fddCfg

chassisEnable

Enables all user ports in a chassis.

Synopsis

```
chassisenable
```

Description

Use this command to enable a Virtual Fabric-aware chassis. All Fibre Channel ports that passed the power-on self test (POST) are enabled. They may come online if connected to a device, or remain offline if disconnected. Use **chassisEnable** to re-enable the chassis after making configuration changes or running offline diagnostics.

If the chassis is partitioned into multiple logical switches and physically connected to multiple logical fabrics, the logical switches rejoin their fabrics.

As each port is enabled, the front panel LED changes from slow-flashing amber to nonflashing green for online ports, or to nonflashing amber for ports that do not initialize. Disconnected ports remain unlit. Loopback ports slowly flash green when online.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To enable a chassis:

```
switch:admin> chassisenable
```

See Also

bladeDisable, bladeEnable, chassisDisable, switchShow, switchDisable, switchEnable, switchCfgPersistentEnable, switchCfgPersistentDisable

chassisName

Displays or sets the chassis name.

Synopsis

chassisname [*name*]

Description

Use this command to display or change the name associated with the chassis. The configured chassis name appears in all the chassis event RASLog messages.

Use this command without parameters to display the current chassis name. Use this command with the *name* operand to assign a new chassis name.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operand:

name

Specify a new name for the chassis, optionally in double quotation marks. From Fabric OS v8.2.1, a chassis name can include up to 31 characters(supports both pizzabox and chassis devices). A chassis name must begin with a letter, and can consist of letters, numbers, underscore or hyphen characters. Spaces are not permitted.

Examples

To change the chassis name to "dilbert":

```
switch:admin> chassisname dilbert
switch:admin> chassisname
dilbert
```

See Also

switchName

chassisShow

Displays all field replaceable units (FRUs).

Synopsis

```
chassisshow
chassisshow --sort
chassisshow --help
```

Description

Use this command to display the Field Replaceable Unit (FR) header content for each object in the chassis and chassis backplane version. This command displays the following information:

1) The chassis family, for example, X6-4.

2) The backplane version number, in hexadecimal: Chassis Backplane Revision: *xx*

3) The first line of each record contains the object ID. If the FRU is part of an assembly, a brief description is displayed in parentheses.

   a) Object type: CHASSIS, FAN, POWER SUPPLY, SW BLADE (switch), CP BLADE (control processor), WWN (world wide name), or UNKNOWN.

   b) Object number: Slot *nn* (for blades), Unit *nn* (for everything else).

4) FRU header version number: Header Version: *x*

5) Displays the maximum allowed power consumption for a given hardware component: positive for power supplies and negative for power consumers. The combined total maximum allowed power consumption for the entire chassis is shown in the output of the **slotShow -p** command. Power Consume Factor: *-xxx*

6) Displays the real-time power consumption for each FRU that supports real-time power measurement. Only 16Gb blades currently support real time measurement of power being consumed by these blades. When the capability is not supported for a FRU, the line is suppressed. Power Usage (Watts):

7) Factory part number (up to 14 characters): Factory Part Num: *xx-xxxxxx-xx*

8) Factory serial number (up to 12 characters): Factory Serial Num:*xxxxxxxxxx*

9) FRU manufacture date: Manufacture: Day: *dd* Month: *mm* Year: *yyyy*

10) Date of the last FRU header update: Update: Day: *dd* Month: *mm* Year: *yyyy*

11) Cumulative number of days the FRU has been powered on: Time Alive: *dddd* days

12) Time elapsed, in days, since the FRU was last powered on: Time Awake: *dddd* days

13) Externally supplied ID (up to 10 characters): ID: *xxxxxxxxxx*

14) Externally supplied part number (up to 20 characters): Part Num: *xxxxxxxxxxxxxxxxxxxx*

15) Externally supplied serial number (up to 20 characters): Serial Num: *xxxxxxxxxxxxxxxxxxxx*

16) Externally supplied revision number (up to 4 characters): Revision Num: *xxxx*

The output of this command depends on the platforms on which it is executed. On some platforms, for certain FRU types, a few items may not be available. In these cases, the lines are suppressed. Possibly affected lines are 1, 3 through 7, 9, and 11 through 14. In addition, for lines 11 through 14, if there is no data set, these lines are suppressed.

This command displays the power supply input voltage data read from the PS controller in real time. This feature is supported only on the Brocade X6-4, Brocade X6-8, and Brocade G630 platforms.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following optional operand:

--sort

Displays all the field replaceable units(FRUs) in a sorted order.

--help

Displays the command usage.

Examples

To display the FRUs for a DCX 8510-8:

```
switch:user> chassisshow

Chassis Family: DCX8510-8
Chassis Backplane Revision: 0

SW BLADE Slot            : 1
Header Version           : 2
Power Consume Factor     : -180
Power Usage (Watts)      : -286
Factory Part Num         : 60-1002144-02
Factory Serial Num       : BQB0345F00G
Manufacture              : Day: 9 Month: 11 Year: 2010
Update                   : Day: 19 Month: 2 Year: 2011
Time Alive               : 41 days
Time Awake               : 1 days

SW BLADE Slot            : 2
Header Version           : 2
Power Consume Factor     : -180
Power Usage (Watts)      : -306
Factory Part Num         : 60-1002144-02
Factory Serial Num       : BQB0345F02R
Manufacture              : Day: 21 Month: 11 Year: 2010
```

```
Update                   : Day: 19 Month: 2 Year: 2011
Time Alive               : 41 days
Time Awake               : 1 days

SW BLADE Slot            : 3
Header Version           : 2
Power Consume Factor     : -180
Power Usage (Watts)      : -315
Factory Part Num         : 60-1002144-02
Factory Serial Num       : BQB0345F01N
Manufacture              : Day: 16 Month: 11 Year: 2010
Update                   : Day: 19 Month: 2 Year: 2011
Time Alive               : 39 days
Time Awake               : 1 days
(output truncated)
```

To display the FRUs for a Brocade X6-4 Director:

```
switch:user> chassisshow --sort

Chassis Family:  X6-4
Chassis Backplane Revision: 10

CP BLADE Slot            : 1
Header Version           : 2
Power Consume Factor     : -50W
Factory Part Num         : 60-1003201-03
Factory Serial Num       : DYK0311L00D
Manufacture              : Day:  8  Month:  4  Year: 15
Update                   : Day: 29  Month:  1  Year: 2017
Time Alive               : 425 days
Time Awake               : 0 days
ID                       : BROCADE

CP BLADE Slot            : 2
Header Version           : 2
Power Consume Factor     : -50W
Factory Part Num         : 60-1003201-04
Factory Serial Num       : DYK0318L00N
Manufacture              : Day:  2  Month:  7  Year: 2015
Update                   : Day: 29  Month:  1  Year: 2017
Time Alive               : 361 days
Time Awake               : 0 days
ID                       : BROCADE

SW BLADE Slot            : 3
Header Version           : 2
Power Consume Factor     : -245W
Factory Part Num         : 60-1003200-03
Factory Serial Num       : DYJ0318L007
Manufacture              : Day: 16  Month:  6  Year: 2015
Update                   : Day: 29  Month:  1  Year: 2017
Time Alive               : 230 days
Time Awake               : 0 days
```

```
SW BLADE  Slot          : 4
Header Version          : 2
Power Consume Factor    : -245W
Factory Part Num        : 60-1003584-02
Factory Serial Num      : FDU0346M019
Manufacture             : Day:  2  Month: 12  Year: 2016
Update                  : Day: 29  Month:  1  Year: 2017
Time Alive              : 2 days
Time Awake              : 0 days

CORE BLADE  Slot        : 5
Header Version          : 2
Power Consume Factor    : -244W
Power Usage             : -117W
Factory Part Num        : 60-1003226-11
Factory Serial Num      : DZD3235M039
Manufacture             : Day: 18  Month:  9  Year: 2016
Update                  : Day: 29  Month:  1  Year: 2017
Time Alive              : 4 days
Time Awake              : 0 days

CORE BLADE  Slot        : 6
Header Version          : 2
Power Consume Factor    : -244W
Factory Part Num        : 60-1003226-11
Factory Serial Num      : DZD3240M02D
Manufacture             : Day: 10  Month: 10  Year: 2016
Update                  : Day: 29  Month:  1  Year: 2017
Time Alive              : 4 days
Time Awake              : 0 days

SW BLADE  Slot          : 7
Header Version          : 2
Power Consume Factor    : -245W
Factory Part Num        : 60-1003200-03
Factory Serial Num      : DYJ0318L00K
Manufacture             : Day: 15  Month:  6  Year: 2015
Update                  : Day: 29  Month:  1  Year: 2017
Time Alive              : 329 days
Time Awake              : 0 days

POWER SUPPLY  Unit      : 1
Power Source            : AC
PS Voltage input        : 206.50 V
Fan Direction           : Non-portside Intake
Header Version          : 2
Power Consume Factor    : 2870W
Factory Part Num        : 23-0000161-01
Factory Serial Num      : DUC2M02N3F8
Manufacture             : Day: 15  Month:  1  Year: 2017
Update                  : Day: 26  Month:  9  Year: 2017
Time Alive              : 71 days
```

```
Time Awake             : 3 days

POWER SUPPLY  Unit     : 2
Power Source           : AC
PS Voltage input       : 206.00 V
Fan Direction          : Non-portside Intake
Header Version         : 2
Power Consume Factor   : 2870W
Factory Part Num       : 23-0000161-01
Factory Serial Num     : DUC2M02N3K3
Manufacture            : Day: 15  Month:  1  Year: 2017
Update                 : Day: 20  Month:  8  Year: 2017
Time Alive             : 86 days
Time Awake             : 0 days

FAN  Unit              : 1
Fan Direction          : Non-portside Intake
Header Version         : 2
Power Consume Factor   : -300W
Factory Part Num       : 60-1003203-01
Factory Serial Num     : DYL0305L02J
Manufacture            : Day: 28  Month:  4  Year: 15
Update                 : Day: 29  Month:  1  Year: 2017
Time Alive             : 422 days
Time Awake             : 0 days
ID                     : BROCADE

FAN  Unit              : 2
Fan Direction          : Non-portside Intake
Header Version         : 2
Power Consume Factor   : -300W
Factory Part Num       : 60-1003203-01
Factory Serial Num     : DYL0305L028
Manufacture            : Day: 28  Month:  4  Year: 15
Update                 : Day: 29  Month:  1  Year: 2017
Time Alive             : 425 days
Time Awake             : 0 days
ID                     : BROCADE

WWN  Unit              : 1
System AirFlow         : Not Available
Header Version         : 2
Power Consume Factor   : -1W
Factory Part Num       : 60-1003194-01
Factory Serial Num     : DZH0311L00J
Manufacture            : Day:  9  Month:  4  Year: 15
Update                 : Day: 31  Month:  1  Year: 2016
Time Alive             : 292 days
Time Awake             : 0 days

WWN  Unit              : 2
System AirFlow         : Not Available
Header Version         : 2
```

```
Power Consume Factor  : -1W
Factory Part Num      : 60-1003194-01
Factory Serial Num    : DZH0311L009
Manufacture           : Day:  9  Month:  4  Year: 15
Update                : Day: 14  Month:  9  Year: 2015
Time Alive            : 283 days
Time Awake            : 0 days

Chassis Factory Serial Num: DZZ0312L00G
```

See Also

slotShow

classConfig

Displays RBAC class permissions.

Synopsis

```
classconfig --show class_name | -all | -classlist
classconfig --showcli command
classconfig --showroles class_name
classconfig --help
```

Description

Use this command to display information about role-based access control (RBAC) permissions for one or all meta-object format (MOF) classes, to display permissions for a specified command, or to display the permissions for a specified MOF class.

Fabric OS commands are grouped into feature sets called MOF classes. For example, the commands **ldapCfg**, **passwd**, **passwdCfg**, and **userConfig** are all related to User Management and are therefore grouped together under a MOF class called **UserManagement**.

The pre-defined roles Root, Factory, Admin, User, SwitchAdmin, ZoneAdmin, FabricAdmin, BasicSwitchAdmin, SecurityAdmin and Operator provide a mechanism for further restricting access to commands of a certain class by role-specific permissions. For example, a user with the ZoneAdmin role will have access to the commands under the MOF class Zoning but not to those under the UserManagement class.

The following RBAC permissions are supported in Fabric OS:

- •   O = observe

- •   OM = observe-modify

- •   N = no access

Note that the MOF class level permissions extend to all commands in that class, but not necessarily to each and every command option. For example, a command may have the RBAC class permission of "OM", but a show only option under that command may have the permission "O". At the role level, a certain role may be excluded from viewing the command information, in which case the permission for that role would be "N".

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following optional operand:

--show

Displays RBAC permission information. One of the following operands is required:

***class_name* or -all**

> Displays permissions for a single MOF class or for all classes. The output displays the class name, the CLI commands grouped under the specified class, the command options, and the RBAC class permissions for each command option.

-classlist

> Displays an alphabetical listing of all MOF classes supported in Fabric OS.

--showcli *command*

> Displays the RBAC permissions for the specified command and associated command options. The output displays the command name, the command options, the RBAC class permissions for each command option, the MOF class, and the context restriction for the command in VF mode only. If the length of a row is too long to fit in one line, the strings displayed under RBAC Class and Option column will be split and displayed in two lines.

--showroles *class_name*

> Displays the role permissions the specified MOF class.

--help

> Displays the command usage.

Examples

> To display an alphabetical listing of all MOF classes supported in Fabric OS:

```
switch:admin> classconfig --show -classlist
List of RBAC classes:
  1. AdminDomains
  2. ADSelect
  3. AG
  4. APM
  5. Audit
  6. Authentication
  7. Blade
  8. ChassisConfiguration
  9. ChassisManagement
  10. ConfigManagement
  11. Configure
  12. DCE
  13. Debug
  14. Diagnostics
  15. DMM
  16. EncryptionConfiguration
  17. EncryptionManagement
  18. EthernetConfig
  19. Fabric
  20. FabricDistribution
  21. FabricRouting
```

```
   22. FabricWatch
   23. Factory
   24. FCoE
   25. FICON
   26. FIPSBootprom
   27. FIPSCfg
   28. FirmwareKeyManagement
   29. FirmwareManagement
   30. FRUManagement
   31. HA
   32. IPfilter
   33. IPSec
   34. ISCSI
   35. License
   36. LocalUserEnvironment
   37. Logging
   38. LogSupportsave
   39. ManagementAccessConfiguration
   40. ManagementServer
   41. NameServer
   42. Nocheck
   43. NxPortManagement
   44. PhysicalComputerSystem
   45. PKI
   46. PortMirror
   47. RADIUS
   48. Reboot
   49. Restricted
   50. RoleConfig
   51. RoutingAdvanced
   52. RoutingBasic
   53. Security
   54. SessionManagement
   55. SNMP
   56. Statistics
   57. StatisticsDevice
   58. StatisticsPort
   59. SwitchConfiguration
   60. SwitchManagement
   61. SwitchManagementIPConfiguration
   62. SwitchPortConfiguration
   63. SwitchPortManagement
   64. Topology
   65. USBManagement
   66. UserManagement
   67. WWNCard
   68. Zoning
```

To display the RBAC permissions for the commands included in the UserManagement class:

```
switch:admin> classconfig --show UserManagement

RBAC class Name : UserManagement
```

```
   CLI                       Option                 Permission
   ---------------------------------------------------------
   ldapcfg                   help                   O
   ldapcfg                   maprole                OM
   ldapcfg                   show                   O
   ldapcfg                   unmaprole              OM
   passwd                    OperandPresent         OM
   passwdcfg                 disableadminlockout    OM
   passwdcfg                 enableadminlockout     OM
   passwdcfg                 help                   O
   passwdcfg                 set                    OM
   passwdcfg                 setdefault             OM
   passwdcfg                 showall                O
   userconfig                add                    OM
   userconfig                addad                  OM
   userconfig                addlf                  OM
   userconfig                change                 OM
   userconfig                delete                 OM
   userconfig                deletead               OM
   userconfig                deletelf               OM
   userconfig                showad                 O
   userconfig                showlf                 O
   userconfig                showuser               O
   userrename                                       OM
```

To display the RBAC permissions for the UserManagement class:

```
switch:admin> classconfig --showroles UserManagement
Roles that have access to the RBAC class 'usermanagement' are:

   Role Name                     Permission
   ---------                     ----------
   Admin                             OM
   Factory                           OM
   Root                              OM
   SecurityAdmin                     OM
```

To display the RBAC permissions for a command:

```
switch:admin> classconfig --showcli classconfig
CLI             Option       Permission  RBAC Class      Context
-------------------------------------------------------------
classconfig     help         O           RoleConfig      chassis
classconfig     show         O           RoleConfig      chassis
classconfig     showcli      O           RoleConfig      chassis
classconfig     showroles    O           RoleConfig      chassis
```

To display the RBAC permissions for a command (in the following example, the command option entries are split and displayed in two lines because the length of the rows is too long):

```
switch:admin> classconfig --showcli ag
CLI     Option         Permission   RBAC Class
-------------------------------------------------------
ag      addwwnfailov   OM           AG
        ermapping
```

```
ag      addwwnmappin  OM            AG
        g
ag      addwwnpgmapp  OM            AG
        ing
[...]
```

See Also

roleConfig

cliHistory

Displays switch command history.

Synopsis

```
clihistory
clihistory --show
clihistory --showuser username
clihistory --showall
clihistory --enable -shellbuffer
clihistory --disable -shellbuffer
clihistory --display -shellbuffer
clihistory --help
```

Description

This command saves the following information whenever a command is executed on the switch:

- Timestamp

- Username

- FID (VF mode only)

- IP address of the Telnet session or an Interface name

- Options

- Arguments

This command displays the local CLI command history. The information is saved in the SSHOW_SYS file as part of **supportSave**. The CLI history is saved persistently to compact flash. The maximum number of saved entries for this command is 1680. CLI history records is wrapped after reaching the maximum limit specified.

The CLI history is wrapped and saved in a file that is persistent across reboots and firmware download.

Only the command name is stored in the CLI history for commands that requires password; no arguments are stored.

Use **--enable|--disable -shellbuffer** option to configure the device to record or not to record any CLI entry to the shell CLI buffer.

This command can also be executed on the standby CP.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operand:

--show

> Displays the CLI history of the current user.

--showuser *username*

> Displays the CLI history of the given user.

--showall

> Displays the CLI history of all users.

--enable | --disable

> Enables or disables the shell CLI buffer for CLI history.

--display -shellbuffer

> Displays the status of shell CLI buffer for CLI history.

--help

> Displays the command usage.

Examples

To display the command history on a switch:

```
switch:admin> clihistory
Date & Time                        Message
Fri Sep 19 09:43:53 2014           root, FID 10, console, tracedump
Fri Sep 19 09:43:59 2014           root, FID 10, console, coreshow
Fri Sep 19 09:44:21 2014           root, , console, firmwareshow
Fri Sep 19 09:44:25 2014           root, , console, errdump
switch:admin> firmwaredownload -s -p scp 10.70.4.109,fvt,/dist,pray4green
Server IP: 10.70.4.109, Protocol IPv4
Checking system settings for firmwaredownload...
Failed to access scp://fvt:**********@10.70.4.109//dist/release.plist
switch:admin> clihistory
Date & Time                        Message
Wed May 23 03:39:37 2012           admin, console, firmwaredownload
```

To enable or disable shell buffer for CLI history:

```
switch:admin> clihistory --enable -shellbuffer
CLI history shell CLI buffer is enabled.
switch:admin> clihistory --display -shellbuffer
CLI history buffer is enabled.
switch:admin> clihistory --disable -shellbuffer
CLI history shell CLI buffer is disabled.
switch:admin>  clihistory --display -shellbuffer
```

```
CLI history buffer is disabled.
```

See Also

None

configDefault

Resets the nonpersistent configuration data to factory defaults.

Synopsis

configdefault [**-fid** *FID* | **-all** | **-switch**] [**-force**]

Description

Use this command to reset the nonpersistent configuration settings to their factory default values.

Configuration data is grouped into chassis information and switch information. Each configuration type is managed separately. The behavior of **configDefault** depends on the environment in which the command is executed:

- In a Virtual Fabric environment, when executed without operands, this command resets the switch configuration to default values on the current logical switch only. An Admin with chassis permissions can use additional parameters to reset configuration data for a specified logical switch (**-fid** *FID*) or for all logical switches and the chassis (**-all**). Resetting default FCR configuration data requires base switch to be configured in the chassis.

- In a non-Virtual Fabric environment, when executed without operands, this command resets the switch configuration. When executed with the **-all** operand, **configDefault** resets all of the system's configuration data, including chassis and switch configurations. The **-switch** option resets the switch configuration only. The **-fid** option is not valid.

This command resets nonpersistent configuration parameters only. The following parameters are not affected by this command:

- Ethernet MAC address, IP address, subnet mask, and boot ROM parameters

- IP gateway address

- License keys

- OEM customization

- Product ID and Vendor ID

- SNMP configuration

- System name

- Chassis name

- World wide name

- Zoning configuration (includes aliases, zones, and configurations)

- Security parameters and policies

- User account passwords (includes all user configuration and all built-in accounts)

- Switch PID format

- Ethernet Link Mode

Refer to the help files for **configure** and **configureChassis** help for more information on default values for configuration parameters.

Notes

This command cannot be executed on an enabled switch. You must first disable the switch using **switchDisable** or chassisDisable.

Some configuration parameters are cached by the system. To avoid unexpected system behavior, reboot the system after executing **configDefault**.

Note that **configDefault** does not completely remove all FCIP tunnels and GbE IP address information. This may be an issue when attempting to use the same information to create new tunnels or modify the existing ones.

On Gen6 platforms, this command is blocked if encryption is enabled on ports.

This command should be used with caution on Embedded switches, as it can alter the factory default settings. In addition, not all Embedded switches provide the same support for this command.

The execution of this command is subject to Virtual Fabric restrictions may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

-fid *FID*

> Specifies the Fabric ID of the logical switch for which to reset the configuration. This operand is valid only in Virtual Fabric mode, and the executing account must have chassis permissions.

-all

> Restores all nonpersistent configuration parameters to factory default values (switch and chassis parameters). This command requires chassis permissions.

-switch

> Resets the switch configuration only. This operand is not valid in VF mode.

-force

> Executes the command without confirmation and reboots the switch. This operand is optional.

Examples

To restore all system configuration parameters to default values:

```
switch:admin> configdefault -all
WARNING:  This is a disruptive operation that requires a switch reboot.
Would you like to continue [Y/N]: y
```

```
Executing configdefault...Please wait
Already in Native Mode continuing with configDefault
Committing configuration ... done.
The switch has to be rebooted to allow the changes to take effect.
Switch rebooting .......
Restarting system.
The system is coming up, please wait...
```

To restore all system configuration parameters with **-force** option:

```
switch:admin> configdefault -all -force
Executing configdefault...Please wait
setting the default config on switch sw_6510_79
Already in Native Mode continuing with configDefault
Committing configuration ... done.

The switch has to be rebooted to allow the changes to take effect.
Switch rebooting .......
Restarting system.
The system is coming up, please wait...
```

See Also

snmpConfig, configure, configureChassis, switchDisable, switchEnable

configDownload

Downloads configuration data to the system.

Synopsis

```
configdownload
configdownload [- all ] [-p ftp | -ftp] ["host","user","path"
      [,"passwd"]]
configdownload [- all ] [-p scp | -scp ] [-cra] ["host","user","path"]
configdownload [- all ] [-p sftp | -sftp ] ["host","user","path"]
configdownload [- all ] [-local | -USB | -U ["file"]]
configdownload [-fid FID | -chassis | -all | -switch]
      [-p ftp | -ftp ] ["host","user","path" [,"passwd"]]
configdownload [-fid FID  | -chassis | -all | -switch ]
      [-p scp | -scp ] [-cra] ["host","user","path"]
configdownload [-fid FID  | -chassis | -all | -switch ]
      [-p sftp | -sftp ] ["host","user","path"]
configdownload [-fid FID  | -chassis | -all | -switch]
      [-local | -USB | -U ["file"]]
configdownload [-vf] [-p ftp | -ftp ] ["host","user","path"
      [,"passwd"]]
configdownload [ -vf] [-p scp | -scp ] [-cra] ["host","user","path"]
configdownload [ -vf] [-p sftp | -sftp ] ["host","user","path"]
configdownload [-vf] [-local | -USB | -U ["file"]]
configdownload [-fid FID | -all] -map [-p ftp | -ftp ]
      ["host","user","path" [,"passwd"]]
configdownload [-fid FID | -all] -map [-p scp | -scp ]
      [-cra] ["host","user","path"]
configdownload [-fid FID | -all] -map [-p sftp | -sftp ]
      [-cra] ["host","user","path"]
```

Description

This command downloads configuration parameters to the local system. Two types of configuration files can be downloaded with this command: Virtual Fabric configuration parameters and system configuration parameters. You must download both types of configuration data for the system to behave as expected. You can use FTP or SCP to download configuration files from a remote host, or you can retrieve the configuration files from a predetermined directory on the local system, or from an attached USB device.

Use the **-vf** option to download the Virtual Fabric configuration data. The Virtual Fabric configuration file includes logical switch definitions and Virtual Fabric status (enabled or disabled). The file should be named vf-conf_xxx.txt to distinguish it from the regular system configuration (config.txt). The xxx indicates the platform ID. Virtual Fabric configuration data can only be shared between switches that belong to the same platform type and share the same platform ID. If the platform ID contained in the header of the configuration file does not match the platform ID of the system to which it is downloaded, **configDownload** fails. When you download a vf-conf_xxx.txt file, all attributes defined in this file are downloaded to the system and take effect with the exception of LISL ports. The LISL ports on the system are not affected by this download.

Use the **-all** option to download the system configuration data (which must be downloaded separately from the Virtual Fabric configuration data). It is grouped into chassis information and switch information. Each configuration type is managed separately and the behavior of **configDownload** depends on the environment in which the command is executed and which part of the system configuration you wish to download.

- In a Virtual Fabric environment, when the **configDownload** command is executed without chassis permissions, this command downloads the switch configuration to the current logical switch only. An Admin user with chassis permissions can use additional parameters to perform the following selective configuration downloads:
  - Download the switch configuration to a specified logical switch (**-fid** *FID*).
  - Download the chassis configuration only (**-chassis**).
  - Download the entire configuration including the data for all logical switches and for the chassis (**-all**).

  The interactive version of the command (no operands) prompts for input on only the parameters the user is allowed to execute.

- In a non-Virtual Fabric environment, this command by default downloads the configuration for the default logical switch only. To download the chassis-level configuration only, use the **-chassis** option. To download both the chassis and switch configuration, use the **-all** option. Chassis permissions are required. The **-fid** option is not valid. The **-switch** option is equivalent to issuing the command default (without options).

Perform the following steps to backup and then restore a configuration in a switch using Virtual Fabrics:

1) Run the **configUpload -vf** command followed by the **configUpload -all** command from the old setup.

2) Run the **configDownload -vf** command followed by the **configDownload -all** command in the new setup.

The switch must be disabled for configuration download of all parameters with the exception of SNMP and MAPS.

The following rules apply to configuration download in Virtual Fabric mode:

- When downloading the chassis configuration, the number of logical switches defined in the configuration download must match the number of logical switches currently defined on the switch.

- When downloading the switch configuration, the target FID must be defined in both the configuration download and the current system.

- When downloading the switch configuration from a specified source FID to a target FID, the target FID must be defined on the switch and the source FID and associated configuration must be defined in the configuration download. In addition, downloading an SFID configuration resets the target FID ports without warning. Caution is advised when using this option.

- When downloading all configuration parameters, the number of switches defined in the downloaded configuration file must match the number of switches currently defined on the switch. In addition, the following restrictions apply:
  - The switches must be disabled unless you only wish to download SNMP or MAPS parameters.

- Downloading a configuration file from a system that is not Virtual Fabric-capable to a system in Virtual Fabric mode is not recommended. The configuration is applied to the default switch only, and only to the ports that are part of the default switch.

If an FCS policy is enabled, the following rules and restrictions apply:

- Both [Defined Security Policies] and [Active Security Policies] sections must exist and contain the FCS_POLICY.

- In the [Defined Security Policies] section, at least one member of the FCS_POLICY must be the same as a member in the previous FCS_POLICY.

- In the [Active Security Policies] section, the FCS_POLICY must be exactly the same as the previous FCS_POLICY. Order of members must be maintained.

- After the switch is enabled, if the switch is the primary FCS, then its security and zoning information is propagated to all other switches in the fabric.

- After the switch is enabled, if the switch is a non-FCS or a backup FCS, then its security and zoning information will be overwritten by the primary FCS.

Security parameters and the switch identity cannot be changed by **configDownload**. Parameters such as the switch name and IP address are ignored; they are lines in the configuration file that begin with "boot". Security parameters and version stamp are ignored; they are the lines in the configuration file that begin with "sec".

[License] is only accepted if the boot.mac parameter matches the license ID (WWN) of the switch performing the download; otherwise, it is ignored.

The configuration parameters R_A_TOV, E_D_TOV, WAN_TOV, and MAX_HOPS are interrelated. Assigning a specific value to one or more of these parameters might change the range of allowed values that can be assigned to the other parameters. As a result, you may not be able to set all the values within the range displayed for each parameter. This command validates the modified values of these four parameters and terminates the download operation, if the validation check fails.

This is particularly important when downloading a zoning configuration. Because the new zoning information is added to the current configuration, there might not be any conflicts. If the current zoning configuration is to be replaced, the keyword "clear:" should be inserted into the configuration file immediately before the zoning lines (starting at the line "[Zoning]").

If the configuration file contains the keyword "enable:" followed by a *zone_configuration*, that zoning configuration is enabled in the fabric. If there is no "enable:" keyword in the configuration file or no zoning configuration by that name exists, or if enable fails for any reason (such as dangling aliases), then the following conditions apply:

- The effective configuration remains as it was prior to the configuration download. The "enable:" action is ignored.

- The Defined Configuration changes to reflect the new zoning configuration.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

If the switch is in Access Gateway mode, some of the configuration parameters will take effect only after the switch has been re-enabled with the **switchEnable** command.

F_Port trunking configurations are not saved in the configuration file and will not be restored after a configuration download.

Do not manually edit a configuration file after uploading the file and before downloading the file to a switch. Manual editing bypasses sanity checks for some configuration parameters and results in unpredictable system behavior.

The **configDownload** command prompts for confirmation and issues a notice that "A switch reboot is required for the changes to take effect." A configuration download affects large amount of configuration data, and there is no reliable mechanism to determine, which of these parameters may or may not require a reboot. To ensure that all configuration changes are applied correctly, Brocade strongly recommends that you always reboot the switch after a configuration download.

On Gen6 platforms, this command is blocked if encryption is enabled on ports.

Operands

This command has the following operands:

-p ftp | -ftp or -p scp | -scp or -p sftp | -sftp

Specifies the data transmission protocol as either file transfer protocol (FTP), secure copy protocol (SCP), or secure FTP (SFTP). If no protocol is specified, the protocol defaults to FTP.

-cra

Enables Challenge Response Authentication (CRA). CRA is supported only with the SCP protocol.

-vf

Downloads the Virtual Fabric configuration (vf-conf_xx.txt) instead of the regular system configuration. The vf-con_xx.txt file contains a listing of logical switches configured on the platform specified by the platform ID (xx) and other Virtual Fabric parameters. You cannot use the **-vf** option with any of the system configuration upload options (**-fid**, **-chassis**, **-all**).

-all

Downloads all configuration data, including chassis and switch configuration data.

-fid *FID*

Downloads the switch configuration to a logical switch specified by its fabric ID. This operand is valid only in a Virtual Fabric environment and requires chassis permissions.

-chassis

Downloads the chassis configuration only.

-switch

Downloads the switch configuration only. This operand is valid only in non-VF mode.

-map

>   Downloads the port-to-area addressing mode configuration files.

"*host*"

>   Specifies the name or the IP address of the external host, from which to download the
>   configuration. IPv4 and IPv6 addresses are supported. To be able to mention the FTP
>   server by name, you need to set up two DNS servers with **dnsConfig**. Quotation marks
>   are optional.

"*user*"

>   Specifies the login name for the external host. Quotation marks are optional. The user
>   name can include upto 64 characters. It must begin with a letter and spaces are not
>   permitted. The characters that do not support are tilde (~), single quotation mark ('),
>   exclamation mark (!), number sign (#), dollar sign($), percentage (%), caret (^), amper-
>   sand(&), asterisk(*), plus sign (+), equals sign (=), pipe (|), parenthesis (), curly braces {},
>   square brackets [], double quotation mark ("), colon (:), comma (,), question mark (?),
>   semicolon (;), greater than (>), and less than (<). Use at (@) or backslash (\\) in username
>   to separate username and domain.

"*path*"

>   Specifies the file name and path of the configuration file. When used with the **-map** option,
>   this parameter specifies a folder that contains all port-to-area mapping files. Absolute
>   path names may be specified using a forward slash (/). Relative path names search for
>   the file in the login account's home directory on UNIX hosts and in the directory on which
>   the FTP server is running on Windows hosts. This operand is valid only when the file is
>   downloaded from an external host. Quotation marks are optional.

"*passwd*"

>   Specifies the account password. Quotation marks are optional.

-local

>   Downloads a specified configuration file from a predetermined directory on the local
>   chassis.

-USB | -U

>   Downloads a specified configuration file from a predetermined directory on an attached
>   USB device.

"*file*"

>   Specifies the name of the configuration file to be downloaded. This parameter can be
>   used only with the **-local** or **-USB** option, each of which retrieves files from a predeter-
>   mined directory on the local chassis or on an attached USB device. Therefore, subdirec-
>   tories and absolute path names are not permitted. Quotation marks are optional.

Diagnostics

The configuration download may fail for one or more of the following reasons:

- The switch has not been disabled. Disabling the switch is not necessary for configuration files containing only certain SNMP or MAPS parameters. You can run **configDownload** first without disabling the switch, and if there is at least one changed parameter outside of SNMP or MAPS, you are prompted to disable the switch before proceeding.

- The host name is not known to the switch.

- The host IP address cannot be contacted.

- You do not have permission on the host.

- You are running a script that prints something at login.

- The file does not exist on the host.

- The file is not a switch configuration file.

- The FTP server is not running on the host.

- The configuration file contains errors.

- The configuration file's logical switch definitions do not match the definitions on the target switch.

Examples

To download the switch configuration file interactively to the current logical switch from a local directory (no chassis permissions):

```
switch:admin> configdownload
Protocol (scp, ftp, sftp, local) [ftp]:
Server Name or IP Address [host]: 192.168.163.233
User Name [user]: admin
Path/Filename [<home dir>/config.txt]:
Section (all|chassis|FID# [all]):
                  *** CAUTION ***

This command is used to download a backed-up configuration
for a specific switch.  If using a file  from a  different
switch, this file's configuration  settings will  override
any current switch settings.   Downloading a configuration
file, which was uploaded  from a different type of switch,
may cause the switch to fail.

A switch reboot is required for the changes to take effect.

Please make sure all the switches are disabled by
using chassisdisable command. Downloading configuration
to an online switch may result in some configuration not
being downloaded to that switch.

configDownload operation may take several minutes
```

```
to complete for large files.
Do you want to continue [y/n]: y
Password: *******
Activating configDownload: Switch is disabled
configDownload complete: All config parameters are downloaded
```

To download the switch configuration data to the current logical switch from an external FTP server (no chassis permissions):

```
switch:admin> configdownload -ftp 192.168.38.245, \
     jdoe,config.txt,password
```

To download all system configuration data for the chassis and all logical switches (requires chassis permissions):

```
switch:admin> configdownload -all -ftp 192.168.38.245, \
     jdoe,config.txt,password
```

To download the switch configurations to a logical switch with FID 8 from an attached USB device (requires chassis permissions):

```
switch:admin> configdownload -fid 8 -USB config.txt
```

To download the switch configurations belonging to a logical switch with FID 4 to a logical switch with FID 8 from an attached USB device (requires chassis permissions):

```
switch:admin> configdownload -fid 8 -sfid 4  \
     -USB config_fid8.txt
```

To download the Virtual Fabric configuration file using secure FTP:

```
switch:admin> configdownload -vf -p sftp \
     10.32.248.119,jdoe,/temp/vf-conf_66.txt,mypassword
```

See Also

configDefault, configList, configShow, configUpload, configure, configRemove

configList

Lists uploaded configuration files.

Synopsis

```
configlist -local | -USB | -U
```

Description

This command displays a list of names, sizes, and creation dates of configuration files saved on the local chassis or on an attached USB device. These files are created when the **configUpload** command is executed with the **-local** or the **-USB** option.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

-local

Displays the list of configuration files on the local chassis.

-USB | -U

Displays the list of configuration files on the attached USB device.

Examples

To display a list of configuration files stored on the local chassis:

```
switch:admin> configlist -local
config.txt          25679      2007 Jan 02 15:16
config2.txt         25679      2007 Jan 06 15:16
next_cfg.txt        20977      2007 Jan 18 15:16
```

See Also

configDownload, configUpload, configShow, configRemove

configRemove

Deletes a saved configuration file.

Synopsis

```
configremove -local | -USB | -U [file]
```

Description

This command deletes a configuration file that was previously saved to the local chassis or to an attached USB device by using the **configUpload** command.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

-local

Removes a configuration file that was previously created by **configUpload -local** from the local chassis.

-USB | -U

Removes a configuration file that was previously created by **configUpload -USB** from an attached USB device.

file

Specifies the configuration file to be removed. If the *file* option is omitted, the command prompts for a file name.

Examples

To remove a configuration file from the local chassis:

```
switch:admin> configremove -local first_config.txt
```

To remove a configuration file from an attached USB device without specifying a filename:

```
switch:admin> configremove -USB
File Name [config.txt]: second_config.txt
```

See Also

configDownload, configUpload, configList, configShow

configShow

Displays system configuration settings.

Synopsis

```
configshow
configshow [-all | -fid FID | -chassis | -switch] |
        [-local | -USB | -U] [file] [-pattern "pattern"]
```

Description

Use this command to display system configuration settings. Some but not all of these parameters are set by the **configure** and **configureChassis** commands.

Configuration data is grouped into chassis information and switch information. Each configuration type is managed separately. The behavior of **configShow** depends on the environment in which the command is executed:

• In a Virtual Fabric environment, when executed without operands, this command displays the switch configuration for the current logical switch. An Admin with chassis permissions can use additional parameters to display configuration data for a specified logical switch (**-fid** *FID*), for the chassis (**-chassis**), or for all logical switches and the chassis (**-all**).

• In a non-Virtual Fabric environment, when executed without operands, this command displays the switch configuration. When executed with the **-all** operand, **configShow** displays all of the system's configuration data, including chassis and switch configuration data. The **-chassis** option displays the chassis configuration only. The **-switch** option displays the switch configuration only. The **-fid** option is not valid.

Notes

Not all values displayed are applicable to all system models and configurations.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

The following operands are optional:

-pattern "*pattern***"**

Specifies a text string, enclosed in double quotation marks, that limits the output of the command to only those entries that contain the pattern. Use of wildcards and other common regular expression operators is not supported. Some configuration settings do not display when filtered. When in doubt, use the command without the **-pattern** operand. Executing **configShow -pattern** without further operands is not recommended and can cause unspecified behavior.

-all

> Displays all configuration data including chassis and switch configuration.

-fid *FID*

> Displays configuration data for a logical switch specified by its fabric ID. This option is valid only in a Virtual Fabric environment and requires chassis permissions

-chassis

> Displays configuration data for the chassis only. This option is valid only in a Virtual Fabric environment and requires chassis permissions

-switch

> Displays the switch configuration only. This option is valid only in a Non-Virtual Fabric environment.

-local [*file***]**

> Displays the content of a configuration file that was previously created by **configUpload** and stored on the chassis. The output can be optionally filtered by **-pattern** "*pattern*". If *file* is omitted, the command prompts for a file name. The output format when **-local** is specified matches that of **configUpload** and contains a superset of the information provided when **-local** is not specified.

-USB | -U [*file***]**

> Displays the content of a configuration file that was previously created by **configUpload** and stored on an attached USB device. The output can be optionally filtered by **-pattern** "*pattern"*. If *file* is omitted, the command prompts for a file name. The output format when **-USB** is specified matches that of **configUpload** and contains a superset of the information provided when **-USB** is not specified.

Examples

To display all configuration data on a Virtual Fabric-enabled system:

```
switch :admin> configshow -all
[Configuration upload Information]
Configuration Format = 4.0
Minimum Compatible Format = 3.0
Excluding Format = 0.0
date = Fri Jan 12 07:01:59 2018
FOS version = v8.2.0
Number of LS = 2
[Chassis Configuration Begin]

[fcRouting]
fcRoute.backboneFabricId:100
fcRoute.fcrState:2
fcRouteParam.maxLsanCount:3000
```

```
fcRoute.port.8.xportAdmin:DISABLED
fcRoute.port.8.fabricId:4
fcRoute.port.8.ratov:10000
fcRoute.port.8.edtov:2000
fcRoute.port.8.frontConfigDid:160
fcRoute.port.8.portType:400
fcRoute.port.8.portMode:0
fcRoute.port.8.autoElp:7
fcRoute.port.9.xportAdmin:DISABLED
fcRoute.port.9.fabricId:5
fcRoute.port.9.ratov:10000
fcRoute.port.9.edtov:2000
fcRoute.port.9.frontConfigDid:160
fcRoute.port.9.portType:400
fcRoute.port.9.portMode:0
fcRoute.port.9.autoElp:7
fcRouteParam.port.8.rportCost:0
fcRouteParam.port.9.rportCost:0
fcRoute.xlate.persistxdState:1
fcRouteParam.lsan.tagCnt:0

[Chassis Configuration]
passwdcfg.minlength:8
passwdcfg.lowercase:0
passwdcfg.uppercase:0
passwdcfg.digits:0
passwdcfg.punctuation:0
passwdcfg.history:1
passwdcfg.minpasswordage:0
passwdcfg.maxpasswordage:0
passwdcfg.warning:0
passwdcfg.lockoutthreshold:0
passwdcfg.lockoutduration:30
passwdcfg.adminlockout:0
passwdcfg.repeat:1
passwdcfg.sequence:1
passwdcfg.status:0
fips.mode:0
fips.selftests:0
ipfilter.0.name:default_ipv4
ipfilter.0.numofrules:12
ipfilter.0.rule.1:0,0x23,0,0,6,22
ipfilter.0.rule.10:0,0x23,0,0,17,123
ipfilter.0.rule.11:0,0x63,0,0,6,600,1023
ipfilter.0.rule.12:0,0x63,0,0,17,600,1023
ipfilter.0.rule.2:0,0x23,0,0,6,23
ipfilter.0.rule.3:0,0x23,0,0,6,897
ipfilter.0.rule.4:0,0x23,0,0,6,898
ipfilter.0.rule.5:0,0x23,0,0,6,111
ipfilter.0.rule.6:0,0x23,0,0,6,80
ipfilter.0.rule.7:0,0x23,0,0,6,443
ipfilter.0.rule.8:0,0x23,0,0,17,161
ipfilter.0.rule.9:0,0x23,0,0,17,111
```

```
ipfilter.0.state:3
ipfilter.0.type:0
ipfilter.1.name:default_ipv6
ipfilter.1.numofrules:12
ipfilter.1.rule.1:0,0x23,0,0,6,22
ipfilter.1.rule.10:0,0x23,0,0,17,123
ipfilter.1.rule.11:0,0x63,0,0,6,600,1023
ipfilter.1.rule.12:0,0x63,0,0,17,600,1023
ipfilter.1.rule.2:0,0x23,0,0,6,23
ipfilter.1.rule.3:0,0x23,0,0,6,897
ipfilter.1.rule.4:0,0x23,0,0,6,898
ipfilter.1.rule.5:0,0x23,0,0,6,111
ipfilter.1.rule.6:0,0x23,0,0,6,80
ipfilter.1.rule.7:0,0x23,0,0,6,443
ipfilter.1.rule.8:0,0x23,0,0,17,161
ipfilter.1.rule.9:0,0x23,0,0,17,111
ipfilter.1.state:3
ipfilter.1.type:1
(output truncated)
```

To filter the content to display only the password configuration:

```
switch :admin> configshow -all -pattern "passwdcfg"
passwdcfg.minlength:8
passwdcfg.lowercase:0
passwdcfg.uppercase:0
passwdcfg.digits:0
passwdcfg.punctuation:0
passwdcfg.history:1
passwdcfg.minpasswordage:0
passwdcfg.maxpasswordage:0
passwdcfg.warning:0
passwdcfg.lockoutthreshold:0
passwdcfg.lockoutduration:30
passwdcfg.adminlockout:0
passwdcfg.repeat:1
passwdcfg.sequence:1
passwdcfg.status:0
```

To display switch configuration data for FID 128:

```
switch :admin> configshow -fid 128
[Switch Configuration Begin : 0]
SwitchName = dcx_fid30_128
Fabric ID = 128

[Boot Parameters]
boot.name:dcx_fid30_128
boot.ipa:10.38.34.130
boot.mac:10:00:00:05:1e:40:62:58
boot.device:eth0
boot.gateway.ipa:10.38.32.1

[Configuration]
```

```
acl.clear:0
ag.port.nfportfailback:0x0
ag.port.nfportfailover:0x0
ag.port.nfporttopo.0:0x0
ag.port.nfporttopo.1:0x0
ag.port.nfporttopo.10:0x0
ag.port.nfporttopo.11:0x0
ag.port.nfporttopo.12:0x0
ag.port.nfporttopo.13:0x0
ag.port.nfporttopo.14:0x0
ag.port.nfporttopo.15:0x0
ag.port.nfporttopo.16:0x0
ag.port.nfporttopo.17:0x0
ag.port.nfporttopo.18:0x0
ag.port.nfporttopo.19:0x0
ag.port.nfporttopo.2:0x0
ag.port.nfporttopo.20:0x0
(output truncated)
```

See Also

configure, configureChassis, configDownload, configUpload, configList, configRemove, diagDisablePost, diagEnablePost, ipAddrShow, licenseShow

configUpload

Uploads system configuration data to a file.

Synopsis

```
configupload
configupload [-all] [-p ftp | -ftp] ["host","user","path"
     [,"passwd"]]
configupload [-all] [-p scp | -scp] [-cra] ["host","user","path"]
configupload [-all] [-p sftp | -sftp] ["host","user","path"]
configupload [-all] [-force] [-local | USB |-U] ["file"]
configupload [-fid FID | -chassis | -all | -switch]
     [-p ftp | -ftp]["host","user","path" [,"passwd"]]
configupload [-fid FID | -chassis | -all | -switch]
     [-p scp| -scp] [-cra] ["host","user","path"]
configupload [-fid FID | -chassis | -all | -switch]
     [-p sftp | -sftp]["host","user","path"]
configupload [-fid FID | -chassis | -all] | -switch]
     [-force] [-local | USB | -U] ["file"]
configupload [-vf] [-p ftp | -ftp] ["host","user","path"
     [,"passwd"]]
configupload [-vf] [-p scp | -scp] [-cra] ["host","user","path"]
configupload [-vf] [-p sftp | -sftp] ["host","user","path"]
configupload [-vf] [-force] [-local | USB |-U] ["file"]
configupload [-fid FID | -all] -map [-p ftp | -ftp ]
     ["host","user","path" [,"passwd"]]
configupload [-fid FID | -all] -map [-p scp | -scp ]
     [-cra] ["host","user","path"]
configupload [-fid FID | -all] -map [-p sftp | -sftp ]
     [-cra] ["host","user","path"]
```

Description

This command uploads configuration data to a file. Two types of configuration files can be uploaded with this command: Virtual Fabric configuration parameters and system configuration parameters.

Use the **-vf** option to upload Virtual Fabric configuration parameters. The Virtual Fabric configuration includes logical switch definitions and Virtual Fabric status (enabled or disabled). The file should be named vf-conf_xxx.txt to distinguish it from the regular system configuration (config.txt). The xxx indicates the platform ID specified in the header of the configuration file. The platform ID is the same as the first three digits of the "switchType" parameter displayed by **switchShow**. Virtual Fabric configuration data can only be shared between switches that belong to the same platform type and share the same platform ID. Refer to **configDownload** help for more information on the Virtual Fabric configuration.

The system configuration data is uploaded separately. It is grouped into chassis information and switch information. Each configuration type is managed separately and the behavior of **configUpload** depends on the environment in which the command is executed and which part of the system configuration you wish to upload.

- • In a Virtual Fabric environment, when executed without chassis permissions, this command uploads the current logical switch configuration only. An Admin user with chassis permissions can use additional parameters to perform the following selective configuration uploads:

  – Upload the switch configuration of a specified logical switch (**-fid** *FID*).

  – Upload the chassis configuration only (**-chassis**).

  – Upload the entire system configuration including the data for all logical switches and for the chassis (**-all**).

  – Upload the switch configuration only in Non-VF mode(**-switch**).

  The interactive version of the command (no operands) prompts for input on only the parameters the user is allowed to execute.

- • In a non-Virtual Fabric environment, this command by default uploads the configuration for the default logical switch only. To upload the chassis-level configuration only, use the **-chassis** option. To upload both the chassis and switch configuration, use the **-all** option. Chassis permissions are required. The **-fid** option is not valid. The **-switch** option is equivalent to issuing the command default (without options).

Perform the following steps to backup and then restore a configuration in a switch using Virtual Fabrics:

1) Run the **configUpload -vf** command followed by the **configUpload -all** command from the old setup.

2) Run the **configDownload -vf** command followed by the **configDownload -all** command in the new setup.

You can use the file transfer protocol (FTP), the secure copy protocol (SCP), or secure FTP (SFTP) to upload configuration files to an external host, or you can save the configuration in a predetermined directory on the local chassis or on an attached USB device. If the specified file already exists, this command prompts you to overwrite the file. Specify **-force** to overwrite the file without confirmation. When the local chassis is chosen as the destination, the resulting file is written to both primary and secondary partitions, and on enterprise-class platforms, to both Active and Standby Control Processors (CPs).

Refer to the *Brocade Fabric OS Administration Guide* for information on backward compatibility and on the content of the configuration file.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

F_Port trunking configurations are not saved in the configuration file and will not be restored after a configuration download.

Do not manually edit a configuration or a vf-conf.xx file after uploading the file and before downloading the file to a switch. Manual editing bypasses sanity checks for some configuration parameters and results in unpredictable system behavior.

Operands

This command has the following operands:

-p ftp | -ftp or -p scp | -scp or -p sftp | -sftp

Specifies the data transmission protocol as either file transfer protocol (FTP), secure copy protocol (SCP), or secure FTP (SFTP). If no protocol is specified, the protocol defaults to FTP.

-cra

Enables Challenge Response Authentication (CRA). CRA is supported only with the SCP protocol.

-vf

Uploads the Virtual fabric configuration to a file. You must specify a filename when uploading this file. It is recommended to name this file vf-conf_xx.txt (where xx indicates the platform ID) to distinguish this file from the system configuration (config.txt). Use **switchShow** to determine the platform ID of the system. The platform ID in the header of the configuration file is the same as the first two digits of the switchType parameter in the **switchShow** output. You cannot use the **-vf** option with any of the regular configuration upload options (**-fid**, **-chassis**, **-all**).

-fid *FID*

Uploads switch configuration data from a logical switch specified by its fabric ID. This parameter is valid only in a Virtual Fabric environment and requires chassis permissions.

-chassis

Uploads chassis configuration only.

-all

Uploads all system configuration data including chassis and switch configuration for all logical switches.

-switch

Uploads the switch configuration only. This operand is not valid in VF mode.

-map

Uploads the port-to-area addressing mode configuration files.

"*host*"

Specifies the name or the IP address of the external host to which to upload the configuration. To be able to mention the FTP server by name, you need to set up one or more DNS servers with **dnsConfig**. Quotation marks are optional.

"*user*"

Specifies the login name for the external host. Quotation marks are optional. The user name can include upto 64 characters. It must begin with a letter and spaces are not

permitted. The characters that do not support are tilde (~), single quotation mark ('), exclamation mark (!), number sign (#), dollar sign($), percentage (%), caret (^), amper-sand(&), asterisk(*), plus sign (+), equals sign (=), pipe (|), parenthesis (), curly braces {}, square brackets [], double quotation mark ("), colon (:), comma (,), question mark (?), semicolon (;), greater than (>), and less than (<). Use at (@) or backslash (\\) in username to separate username and domain.

"*path*"

Specifies the file name and path of the configuration file. When used with the **-map** option, this parameter specifies a folder that contains all port-to-area mapping files. Absolute path names may be specified using a forward slash (/). Relative path names upload the file to the login account's home directory on UNIX hosts and into the directory on which the FTP server is running on Windows hosts. This operand is valid only when the file is uploaded to an external host. Quotation marks are optional.

"*passwd*"

Specifies the account password. Quotation marks are optional.

-local

Uploads a specified configuration file to a predetermined directory on the local chassis. This option requires a file name.

-USB |-U

Uploads a specified configuration file to a predetermined directory on an attached USB device. This option requires a file name.

"*file*"

Specifies the file name. Quotation marks are optional. This parameter is valid only with the **-local** or **-USB** options, each of which stores files in a predetermined directory on the local chassis or on an attached USB device. Therefore, subdirectories and absolute path names are not permitted.

-force

Overwrites an existing file without confirmation. This parameter is valid only with the **-local** or **-USB** options.

When invoked without operands or without "*host*" or "*file*" parameters, **configUpload** runs in interactive mode.

Diagnostics

The configuration upload may fail for one or more of the following reasons:

• The host name is not known to the switch.

• The host IP address cannot be contacted.

- • The user does not have permission on the host.

- • The FTP server is not running on the host.

Examples

To upload the switch configuration interactively from a switch that is not enabled for Virtual Fabrics:

```
switch:admin> configupload
Protocol (scp, ftp, sftp, local) [ftp]: sftp
Server Name or IP Address [host]: 192.168.38.245
User Name [user]: jdoe
File Name [<home dir>/config.txt]:
Section (all|chassis|switch [all]):
Password: ******

configUpload complete: All config parameters are uploaded
```

To upload the switch configuration that belongs to a logical switch with FID 100:

```
switch:admin> configupload
Protocol (scp, ftp, sftp, local) [ftp]: sftp
Server Name or IP Address [host]: 10.32.220.100
User Name [user]: jdoe
File Name [<home dir>/config.txt]: config.fid100.txt
Section (all|chassis|FID# [all]): 100
Password: ******

configUpload complete: All config parameters are uploaded
```

To upload the configuration for the entire chassis to a local file from the command line forcing an overwrite:

```
switch:admin> configupload -chassis -local  \
     -force config.txt

configUpload complete: All config parameters are uploaded
```

To upload the configuration for the current logical switch to an external FTP server:

```
switch:admin> configupload -ftp 192.168.38.245, \
     jdoe,config.txt,password
```

To upload all system configuration data to an external FTP server:

```
switch:admin> configupload -all -ftp  \
     192.168.38.245,jdoe,config.txt,password
```

To upload the system configuration file for a logical switch with FID 8 to an attached USB device:

```
switch:admin> configupload -fid 8 \
     -USB config.txt
```

To upload the Virtual Fabric configuration of the current platform to an external FTP server:

```
switch:admin> configupload -vf -p ftp  \
     10.32.248.119,jdoe,/temp/vf-conf.66.txt,password
```

See Also

configDefault, configDownload, configShow, configList, configRemove, configure, configureChassis

configure

Changes switch configuration settings.

Synopsis

```
configure
configure --query [-module module_name]
      [-key key_name]
configure --show [-module module_name]
      [-key key_name]
configure --set [-module module_name]
      [-key key_name] [-value value]
configure --default [-module module_name]
      [-key key_name]
```

Description

Use this command to change switch configuration settings.

The command switches to interactive mode if no command option (**--query**, **--show**, **--set**, or **--default**) is provided.

Configuration data is grouped into chassis information and switch information. Each configuration type is managed separately. For information on file format and specific parameters contained in each section, refer to the **configUpload** help page.

The behavior of the **configure** command depends on the environment in which the command is executed:

•   In a Virtual Fabric environment, the **configure** command sets switch configuration parameters for the current and few chassis-wide configurations. If a switch or chassis is configured with multiple logical switches, you must configure each logical switch separately. Use the **setContext** command to change the current logical switch context.

•   In a non-Virtual Fabric environment, the **configure** command sets switch configuration parameters.

To configure chassis-wide parameters, use the **configureChassis** command.

The following switch configuration parameters can be set with the **configure** command:

•   Switch fabric parameters

•   Virtual channel parameters

•   F_Port login parameters

•   Zoning operation parameters

•   Remote State Change Notifications (RSCN) transmission mode

•   Arbitrated Loop parameters

•   System Services settings

•   Portlog Events enable or disable settings

To access all parameters controlled by this command, you must disable the switch using the **switchDisable** command. If executed on an enabled switch, only a subset of attributes are configurable. Menu displays may vary depending on the hardware platform.

The **configure** command runs in interactive mode and presents you with a series of hierarchical menus. Each top-level menu and its associated submenus consist of a text prompt, a selection of valid values, and a default value (in brackets).

The following keys control the execution of the command:

Return

> When entered at a prompt with no preceding input, the command accepts the default value (if applicable) and moves to the next prompt.

Interrupt (Ctrl-C)

> Aborts the command immediately and ignores all changes made.

End-of-file (Ctrl-D)

> When entered at a prompt with no preceding input, terminates the command and saves changes made.

The following parameters can be modified with the **configure** command:

Fabric Parameters

Fabric settings control the overall behavior and operation of the fabric. Some of these settings, such as the domain, are assigned automatically and may differ from one switch to another in a given fabric. Other parameters, such as buffer-to-buffer credit or timeout values, can be modified to suit specific applications or operating environments but must be in agreement among all switches to allow formation of the fabric.

The following fabric settings can be modified (* = multiplication symbol)

```
Field                         Type       Default Range
_____
Domain                        Number     1       1-239
Enable 8-bit
Dynamic Area Mode             Boolean    0       0 or 1
WWN Based persistent PID      Boolean    no      yes/no
D-Port Parameters             Boolean    on      on/off
Dynamic D-Port                Boolean    on      on/off
On-Demand D-Port              Boolean    on      on/off
RDP Polling Cycle             Number     1       0 to 24
Allow XISL Use                Boolean    yes     yes/no
Remote Fosexec                Boolean    on      on/off
High Integrity Fabric Mode    Boolean    on      on/off
Display FDMI Host Name        Boolean    on      on/off
Location ID                   Number     0       0 to 4
Disable FID Check             Boolean    no      yes/no
Enable a 256 Area Limit       Number     0       0 to 2
R_A_TOV                       Number     10000   E_D_TOV * 2
                                                 to 120000
```

```
E_D_TOV                      Number    2000    1000 to
                                               R_A_TOV/2
WAN_TOV                      Number    0       0 to R_A_TOV/4
MAX_HOPS                     Number    7       7 to 19
Data Field Size             Number    2112    256 to 2112
Sequence Level Switching    Boolean   0       0 or 1
Disable Device Probing      Boolean   0       0 or 1
Suppress Class F Traffic    Boolean   0       0 or 1
Per-frame Route Priority    Boolean   0       0 or 1
Long Distance Fabric        Boolean   0       0 or 1
BB Credit                    Number    16      1 to 27
Disable FID Check           Boolean   yes     yes/no
Insistent Domain ID Mode    Boolean   no      yes/no
Disable Default PortName    Boolean   no      yes/no
Dynamic Portname            Boolean   no      yes/no
Edge hold time              Number    220     80 to 500
F-Port Device Update Mode   Boolean   no      yes/no
```

Fabric parameters are defined as follows:

Domain

The domain number uniquely identifies a switch in a fabric. This value is automatically assigned by the fabric. The range is 1-239.

Enable 8-bit Dynamic Area Mode

When enabled, this feature supports Dynamic Area Mode in default partitions on the Brocade DCX 8510-8 and DCX 8510-4. Dynamic Area Mode is disabled by default. When enabled, Dynamic Area Mode supports both static and dynamic area assignment. Use the **portAddress** command to perform a static assignment of an area to a given port. In Dynamic Area Mode, areas are dynamically assigned to the ports (up to a 255 limit). Port area assignments are persistent; however, disabling Dynamic Area Mode with **configure** resets the area assignments. This feature is configurable only on the default switch.

Enabling Dynamic Area Mode fails under one or more of the following conditions:

- The number of ports in the default partition exceeds 255.

- An AP blade with FL ports is present in the chassis (Brocade Encryption blade or FCoE 10-24).

WWN Based persistent PID

When enabled, this feature supports both dynamic and static WWN-based PID assignment. In dynamic PID binding, the first area assigned to a device when it logs in is bound to the device WWN and remains persistent through subsequent logins. Every time the device logs into the switch, it is guaranteed to get the same PID. Alternately, you can use the **wwnAddress** command to create a static WWN-based PID assignment. In either case, the WWN-based persistent PID feature must be enabled through **configure**. The feature is disabled by default; it is dependent on Dynamic Area Mode being enabled.

D-Port Parameters

Disables or enables the D_Port parameters on the switch.

Dynamic D_Port

Disables or enables Dynamic D_Port mode configuration on the switch. By default, Dynamic D_Port mode is ON. When Dynamic D_Port mode is ON, the port may dynamically go into D_Port mode based on external request from remote HBA or device port. After the D_Port tests are complete, the port may automatically switch to operate as an F_Port. This option is not supported in AG mode.

On Demand D_Port

Disables or enables On-Demand D_Port mode configuration on the switch. By default, On-Demand D_Port mode is OFF.

RDP Polling Cycle

Displays the Switch Driver timer routine for polling. The switch need not be disabled to configure this variable.

Allow XISL Use

An extended interswitch link (XISL) is an interswitch link (ISL) that connects the logical switch to the base switch and carries traffic for multiple logical fabrics. This feature is supported only on Virtual Fabric-aware platforms under the following conditions: Virtual Fabrics must be enabled on the switch, and the switch cannot be a base switch. In addition, on the Brocade DCX 8510-8 and DCX 8510-4 the switch cannot be a default switch or include interchassis link (ICL) ports. This feature is enabled by default (yes=enabled). On the Brocade 6510 default switch, the feature is disabled by default (no=disabled). The XISL feature is supported on the Brocade extension blade (FX8-24).

You do not need to disable the logical switch before changing the value of this parameter. Turning off XISL use requires confirmation because all LISLs will be removed upon execution. If the logical switch is enabled and is part of an edge fabric connected to an FCR, this parameter cannot be turned on. If the logical switch is disabled or it is not yet part of an edge fabric, this parameter can be turned on. However, execution may cause edge fabric segmentation if the EX_Port connected to the edge fabric is disabled while the logical switch is enabled or connected to the edge fabric.

Location ID

The Location ID parameter affects routing calculations, and should remain set to the default value of 0 for normal use. Do not change the value unless explicitly instructed to do so by a Brocade Support engineer.

Disable FID Check

If fabric ID (FID) check is disabled, the fabric ignores the Fabric Identifier conflict with the neighboring switch during fabric formation. By default, FID check is enabled. If the fabric detects a FID conflict, it disables the E_Port with a "Fabric ID conflict" message. This

parameter is configurable only if the switch is Virtual Fabric-aware and Virtual Fabric is enabled on the switch.

Enable 256 Area limit

The 256 area limit allows the partition to be configured for 8-bit addressing rather than the default 10-bit addressing. Each port in this partition is given a unique area represented by the middle 8 bits of the PID. Valid values include the following:

0

No limit is imposed on the area. This is the default value. The partition is configured for 10-bit addressing and supports up to 1800 ports.

1

The unique area assignments begin at zero regardless of where the port is physically located. This allows FICON users to make use of high port count port blades with port indexes greater than 256.

2

The unique area assignments are based on the port index. This mode does not allow FICON users to make use of ports with an index greater than 256 (high ports of a high port count blade), but this mode is compatible with domain-index zoning. This parameter is configurable only if the switch is Virtual Fabric-aware and Virtual Fabric is enabled on the switch.

R_A_TOV

The resource allocation time out value specified in milliseconds. This variable works with the variable E_D_TOV to determine switch actions when presented with an error condition.

Allocated circuit resources with detected errors are not released until the time value has expired. If the condition is resolved prior to the time out, the internal time-out clock resets and waits for the next error condition.

E_D_TOV

Error detect time out value specified in milliseconds. This timer is used to flag a potential error condition when an expected response is not received within the set time limit. If the time for an expected response exceeds the set value, then an error condition occurs.

WAN_TOV

Wide area network time out value specified in milliseconds. This timer is the maximum frame time out value for a WAN, if any, interconnecting the Fibre Channel islands.

MAX_HOPS

Maximum hops is an integer that denotes the upper limit on the number of hops a frame might have to traverse to reach any destination port from any source port across the fabric.

Note that the R_A_TOV, E_D_TOV, WAN_TOV, and MAX_HOPS configuration parameters are interrelated. Assigning a specific value to one or more of these parameters can change the range of allowed values that can be assigned to the other parameters. As a result, you may not be able to set all the values within the range displayed against each parameter. To reduce problems, the configuration utility validates the modified parameter values and prompts you to re-enter some values, if the validation check fails.

Data Field Size

The data field size specifies the largest possible value, in bytes, for the size of a type 1 (data) frame. The switch advertises this value to other switches in the fabric during construction of the fabric as well as to other devices when they connect to the fabric. Setting this parameter to a value smaller than 2112 might result in decreased performance.

Sequence-Level Switching

When sequence-level switching is set to 1, frames of the same sequence from a particular source are transmitted as a group. When this feature is set to 0, frames are transmitted interleaved among multiple sequences.

Under normal conditions, sequence-level switching should be disabled for better performance. However, some host adapters have performance issues when receiving interleaved frames from multiple sequences. When there are such devices attached to the fabric, sequence-level switching should be enabled.

Disable Device Probing

When disable device probing is set to 1, devices that do not register with the Name Server will not be present in the Name Server data base. Set this mode only if the switch's N_Port discovery process (PLOGI, PRLI, INQUIRY) causes an attached device to fail.

Suppress Class F Traffic

By default, the switch can send Class F frames. When this option is turned on, Class F traffic is converted to Class 2 traffic before being transmitted.

Per-frame Route Priority

In addition to the eight virtual channels used in frame routing priority, support is also available for per-frame-based prioritization when this value is set. When Per-frame Route Priority is set to 1, the virtual channel ID is used in conjunction with a frame header to form the final virtual channel ID.

Long Distance Fabric

When this mode is set to 1, ISLs in a fabric can be up to 100 km long. The exact distance level is determined by the per-port configuration on the E_Ports of each ISL. Both E_Ports in an ISL must be configured to run the same long-distance level; otherwise, the fabric will be segmented.

An Extended Fabrics license is required to set this mode.

BB Credit

The buffer-to-buffer (BB) credit represents the number of buffers available to attached devices for frame receipt. The range of allowed values varies depending on other system settings (see Unicast-only Operation). Refer to the *Brocade Fabric OS Administration Guide* for more information on platform-specific BB Credit limitations.

Insistent Domain ID Mode

When this mode is set, the switch attempts to acquire from the fabric the domain number programmed in its "Switch Fabric Settings." If the operation fails, the switch will segment from the fabric. You must disable the switch before configuring this parameter.

Disable Default PortName

When this mode is set, the switch does not generate a default port name.

Display FDMI Host Name

When this mode is set, the switch displays the FDMI Host name. By default this feature is in OFF state.

Dynamic Portname

When enabled, this feature dynamically assigns port name with various fields such as switch name, port type, port index, and alias name. Dynamic Portname and Display FDMI Host Name features are mutually exclusive.

Remote Fosexec feature

The remote fosexec configuration is bi-directional. The configuration is checked when sending any fosexec request to a remote switch and also when receiving the request from a remote switch. Thus, both the sending and receiving switched must be configured with fosexec ON. By default remote fosexec feature is in OFF state.

High Integrity Fabric Mode

Disables or enables the system to check for FMS mode and all existing HIF parameters present in the switch. By default this feature is in OFF state.

Edge hold time

Configures the maximum time a frame can wait after it is received on the ingress port and before it is delivered to the egress port. If the frame waits in the egress buffer for more

than the configured hold time, the switch drops the frame, replenishes sender's credit, and increments the counters er_tx_c3_timeout and er_rx_c3_timeout on the TX and RX ports respectively. The frame-timeout indicates a slow draining or a congestion or bottle-neck in the fabric. Decreasing hold time on the edge switches may reduce frame drop counts in the core switches. This parameter is stored persistently in the configuration file. You can configure edge hold time on both default and logical switch.

The edge hold time configuration is a chip-based value and the configuration varies between 8Gb/s-capable, 16Gb/s-capable, and 32Gb/s-capable platforms. An 8Gb/s-capable platform provides one register to store the edge hold time value and any change in this value will affect all ports in the chip. Therefore, the edge hold time configuration will not be changed for 8Gb/s-capable platform ports in a logical switch. The 8Gb/s-capable platform ports in a logical switch take the default edge hold time value (220 milliseconds) or the value configured in the default switch. Both 16Gb/s and 32Gb/s-capable platforms provide four registers to store the edge hold time configuration and therefore each port in a chip can be configured one of the four values.

The edge hold time parameter is enabled by default with a value of 220 milliseconds. The following are the three predefined edge hold time values:

80

Low edge hold time (in milliseconds).

220

Medium edge hold time (in milliseconds). This is the default value.

500

High edge hold time (in milliseconds).

User Defined

A user-defined value may be defined in the range of 80-500 milliseconds in increments of one. This value is only applicable to the default switch.

In a logical switch, the edge hold time configuration is updated only for 16Gb/s-capable ports. If 8Gb/s-capable ports are present in the logical switch, the SWCH-1025 RASLog message is triggered to indicate that 8Gb/s-capable ports are present and the edge hold time configuration will not change for these ports.

F-Port Device Update Mode

When enabled, this feature provides the ability to update NS entries when the base devices perform logout. This option can only be changed when a switch is disabled. In Fabric OS prior to 7.3.0, the details of devices logged in with FLOGI (base devices) with AL_PA 0x40 and 0xC0 are not propagated to NS or FCP unless the devices are registered with NS. Since they cannot be probed, devices with these AL_PAs must initiate NS registration. If they do register with NS and then later logout, there can be multiple LUNs losing access during login time because the logged out base device entry is not removed from NS. Furthermore, the logged out base device cannot login to the fabric again. Enabling this update mode ensures NS and login database consistency.

Virtual Channel Settings

VC Priority specifies the class of frame traffic given priority for a virtual channel. The switch enables fine-tuning for a specific application by configuring the parameters for eight virtual channels. The first two virtual channels are reserved for switch internal functions and are not available for modification.

The default virtual channel settings have already been optimized for switch performance. Changing the default values can improve switch performance but can also degrade performance. Do not change these settings without fully understanding the effects of the changes.

The values for virtual channel settings are as follows:

```
Field                  Default   Range
_____
VC Priority 2          2         2 to 3
VC Priority 3          2         2 to 3
VC Priority 4          2         2 to 3
VC Priority 5          2         2 to 3
VC Priority 6          3         2 to 3
VC Priority 7          3         2 to 3
```

F_Port Login Parameters

Specifies the F_Port login parameters. The following F_Port login settings are configurable. Unless there are issues with F_Port staging, do not change default values. (* = multiplication symbol)

```
Field                Type     Default            Range
_____
Maximum logins       Number   For directors:     1 to
per switch                    16 * the max number 126 * the max
                              of physical ports
Logins per second    Number   0                  0 to 100
Login stage interval
(milli-seconds)      Number   0                  0 to 10000
Stage FDISC logins
with busy rejects:   Number   0                  1 to 255
Enforce FLOGI/FDISC
  login:             Number   0                  0 to 1
MAX num. of FLOGIs
  allowed            Number   100                0 to 100
```
Maximum logins per switch

Sets a switch-wide limit on allowed logins.

The following three parameters are related to staged F_Port logins by FLOGI requests and virtual device logins by FDISC(SID==0) requests.

Logins per second

Specifies the number of logins the switch accepts per second in staged F_Port bring up.

Login stage interval

Specifies the stage interval in staged F_Port bring up.

Stage FDISC logins with busy reject:

This parameter, if nonzero, enables staging of FDISC logins by rejecting the FDISC requests with "logical busy", when the requests are more than the number of configured "logins per second". It also specifies the number of FDISC requests that will always be accepted first without reject.

Enforce FLOGI/FDISC login

Setting this flag allows a second F_Port login (FLOGI/FDISC login) in the event of two devices attempting to log in with the same PWWN. In default mode (zero) the first FLOGI/FDISC login takes precedence over the second. When the mode is set to 1, the second FLOGI/FDISC login takes precedence over the first. All modes are for NPIV and non-NPIV F-Ports. When mode is set to 2, on FLOGI login the first FLOGI takes precedence. On FDISC login, the second FDISC takes precedence. For more information, refer to "Configure FLOGI-time handling of duplicate PWWNs" section in the *Brocade Fabric OS Administration Guide*. You must disable the switch to change this parameter.

MAX num. of FLOGIs allowed

Specifies the number of FLOGIs the port can accept per second. The default value is 100. When the FLOGI limit is reached, the port will be fenced.

Zoning Operation Parameters

The following zoning operation parameter can be modified.

Disable NodeName Zone Checking

Specify 1 to disable using node WWN when specifying nodes in the zone database. Specify 0 to enable using node WWN when specifying nodes in the zone data. The default value is 0. This value must be set to 1 for interpretability.

Local TI Filtering

Specify **on** to enforce TI zone rules on the local devices. The default value is **off**. You must first disable the switch using the **switchDisable** command before enabling this feature.

RSCN Transmission Mode

The RSCN transmission modes and values are as follows:

End-device RSCN Transmission Mode

Values are as follows:

0

RSCN only contains single PID

1

RSCN contains multiple PIDs (Default)

2

Fabric addresses RSCN

Domain RSCN to End-device

Values are as follows:

0

Disabled. No domain RSCN is sent to the end-device for the switch IP address or name change.

1

Enabled. Domain RSCN is sent to the end-device for the switch IP address or name change.

Arbitrated Loop Parameters

Arbitrated Loop Parameter and their values are as follows:

Send FAN frames?

Specifies that fabric address notification (FAN) frames be sent to public loop devices to notify them of their node ID and address. When set to 1, frames are sent; when set to 0, frames are not sent. The default value is 1.

Enable CLOSE on OPEN received?

If this is set, a CLS is returned immediately to an OPN if no buffers are available. This is required for TachLite. The valid range is 0 to 4. The default value is 0.

Always send RSCN?

Following the completion of loop initialization, a remote state change notification (RSCN) is issued when FL_Ports detect the presence of new devices or the absence of preexisting devices. When set to 1, an RSCN is issued upon completion of loop initialization, regardless of the presence or absence of new or preexisting devices. When set to 0, an RSCN is not sent (default).

System Services Settings

The values for the System Services settings are as follows:

Disable RLS probing

Enables or disables the read link status (RLS) probing. Performed by the FCP daemon, RLS probing reads the link error block from the device. This extended link services command is defined by the FC standards. Refer to the FC standards for information. RLS probing is enabled by default, meaning "Disable RLS probing" is "off". "on" disables RLS probing.

Portlog Events Enable/Disable Settings

These settings determine whether or not various types of port events are logged.

Each event type displayed on the screen is enabled by default ("on"). When disabled, this event is not logged by the port log.

Application Attributes

A number of application attributes are configurable.

Management Port Ingress Rate limiting

You must execute **configure** command from the default FID to make Management Port Ingress Rate limiting option available.

This setting is supported only on the Brocade X6 Directors from Fabric OS v8.2.1 or later.

```
switch:admin> FID128> configure

Not all options will be available on an enabled switch.
To disable the switch, use the "switchDisable" command.

Configure...

  Fabric parameters (yes, y, no, n): [no]
  D-Port Parameters (yes, y, no, n): [no]
  RDP Polling Cycle(hours)[0 = Disable Polling]: (0..24) [1]
  System services (yes, y, no, n): [no] y
    Management Port Ingress Rate limiting (on, off): [on]
```

Notes

The maximum per port login limit is no longer configurable with this command. Use the **portcfgNPIVPort --setloginlimit** command to configure this parameter on a per port basis.

The Telnet interface is no longer configurable with this command. Use the **ipFilter** command to enable or disable the Telnet interface.

The SNMP attributes are no longer configurable with this command. Use the **snmpConfig --set seclevel** command to configure SNMP attributes.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--query

> Displays all configuration key information that supports the non-interactive mode. The information includes a list of configuration module ID or key ID.

-module *module_name*

> Queries all configuration key information for a specific configuration module.

–key *key_name*

> Queries specific configuration key information. Use partial configure key string to query
> a group of configure keys. For example, **-key** *fab* displays keys like fabric.domain,
> fabric.ididmode, fabric.rdp_poll_cycle, etc.

--show

> Displays all configuration key value that supports the non-interactive mode.

-module *module_name*

> Displays configuration key value for the entire configuration module.

-key *key_name*

> Displays partial configuration key, this option displays all the configuration key name
> matching the provided key string.

--set

> Sets up the configuration value for the specified values.

–value *value*

> Sets up the configuration value, displays the configuration key value matching the
> provided key string.

--default

> Sets the configuration value to the predefined default value. If the default value is defined,
> the runtime key value is updated with the default value and the configure DB persistent
> storage too is updated else the runtime key value is removed and the configure DB
> persistent value alone is updated.

Examples

> To enable XISL use on a logical switch with FID 20:

```
switch:admin> setcontext 20

switch:admin> switchdisable

switch:admin> configure
Configure...

Fabric parameters (yes, y, no, n): [no] y

    Domain: (1..239) [1]
    Enable a 256 Area Limit
      (0 = No,
       1 = Zero Based Area Assignment,
       2 = Port Based Area Assignment): (0..2) [0] 1
```

```
        WWN Based persistent PID (yes, y, no, n): [no]
Allow XISL Use (yes, y, no, n): [yes]yes
R_A_TOV: (4000..120000) [10000]
E_D_TOV: (1000.. 5000) [2000]
WAN_TOV: (0..30000) [0]
MAX_HOPS: (7..19) [7]
Data field size: (256..2112) [2112]
Sequence Level Switching: (0..1) [0]
Disable Device Probing: (0..1) [0]
Suppress Class F Traffic: (0..1) [0]
Per-frame Route Priority: (0..1) [0]
Long Distance Fabric: (0..1) [0]
BB credit: (1..27) [16]
Disable FID Check (yes, y, no, n): [no]
Insistent Domain ID Mode (yes, y, no, n): [no]
Disable Default PortName (yes, y, no, n): [no]
Display FDMI Host Name (yes, y, no, n): [no]
Edge Hold Time(Low(80ms), Medium(220ms), High(500ms)
  UserDefined(80-500ms): (80..500) [500]
Remote Fosexec feature: (on, off): [on]
High Integrity Fabric Mode (yes, y, no, n): [no]
Virtual Channel parameters (yes, y, no, n): [no]
F-Port login parameters (yes, y, no, n): [no]
D-Port Parameters (yes, y, no, n): [no] yes
  Dynamic D-Port (on, off): [on]
  On Demand D-Port (on, off): [on]
RDP Polling Cycle(hours)[0 = Disable Polling]: (0..24) [1]
Zoning Operation parameters (yes, y, no, n): [no]
RSCN Transmission Mode (yes, y, no, n): [no]
Arbitrated Loop parameters (yes, y, no, n): [no]
System services (yes, y, no, n): [no]
Portlog events enable (yes, y, no, n): [no]

switch:admin> switchenable
```

To enable Dynamic Area Mode on the default partition of the Brocade DCX:

```
switch:admin> switchdisable
switch:admin> configure
Configure...

Change fabric parameters? Y
    Domain: (1..239) [160]
    Enable 8 bit Dynamic Area Mode
      (0 = No,
       1 = Zero Based Area Assignment): (0..1) [0] 1
    R_A_TOV: (4000..120000) [10000]
    E_D_TOV: (1000..5000) [2000]
    WAN_TOV: (0..30000) [0]
    MAX_HOPS: (7..19) [7]
    Data field size: (256..2112) [2112]
    Sequence Level Switching: (0..1) [0]
    Disable Device Probing: (0..1) [0]
    Suppress Class F Traffic: (0..1) [0]
```

```
      Per-frame Route Priority: (0..1) [0]
      Long Distance Fabric: (0..1) [0]
      BB credit: (1..27) [16]
      Disable FID Check (yes, y, no, n): [no]
Insistent Domain ID Mode (yes, y, no, n): [no]
Disable Default PortName (yes, y, no, n): [no]
Edge Hold Time(Low(80ms), Medium(220ms), High(500ms),
  UserDefined(80-500ms): (80..500) [500]
Remote Fosexec feature: (on, off): [on]
High Integrity Fabric Mode (yes, y, no, n): [no]
Virtual Channel parameters (yes, y, no, n): [no]
F-Port login parameters (yes, y, no, n): [no]
D-Port Parameters (yes, y, no, n): [no] yes
  Dynamic D-Port (on, off): [on]
  On Demand D-Port (on, off): [on]
RDP Polling Cycle(hours)[0 = Disable Polling]: (0..24) [1]
Zoning Operation parameters (yes, y, no, n): [no]
RSCN Transmission Mode (yes, y, no, n): [no]
Arbitrated Loop parameters (yes, y, no, n): [no]
System services (yes, y, no, n): [no]
    Disable RLS probing (on, off): [on]
    Eth Rate Limiting (on, off): [off] on
Portlog events enable (yes, y, no, n): [no]
```

To display all supported configuration keys non-interactive functions:

```
switch:admin> configure --query
Description:Describes the system login timeout information
Context    :CHASSIS
Module     :DIAG
Key        :system.login.timeout
RBAC       :Audit
Default    :0
Range      :0-99999
+++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Description:Defines the CPU load threshold parameter above
which the switch will stop polling the sfps
Context    :CHASSIS
Module     :EM
Key        :system.cpuLoad
RBAC       :SessionManagement
Default    :121
Range      :N/A
+++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Description:Describes the domain identification number of the switch
Context    :SWITCH, SwitchDisable
Module     :FABR
Key        :fabric.domain
RBAC       :Configure
Default    :1
Range      :1-239
CLI        :configure
```

```
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
+
Description:Describes the mode of IDID
Context    :SWITCH, SwitchDisable
Module     :FABR
Key        :fabric.ididmode
RBAC       :Configure
Default    :0
Range      :0-1
CLI        :configure
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
++
Description:Describes the value of RDP Poll Cycle
Context    :SWITCH, SwitchDisable
Module     :FABR
Key        :fabric.rdp_poll_cycle
RBAC       :Configure
Default    :1
Range      :0-24
CLI        :configure
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
++
Description:Describes xisl use is on or off
Context    :SWITCH
Module     :SWCH
Key        :switch.xisluse
Description:Describes the system login timeout information
Context    :CHASSIS
Module     :DIAG
Key        :system.login.timeout
RBAC       :Audit
Default    :0
Range      :0-99999
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
+++
Description:Defines the CPU load threshold parameter above which the
switch will stop polling the sfps
Context    :CHASSIS
Module     :EM
Key        :system.cpuLoad
RBAC       :SessionManagement
Default    :121
Range      :N/A
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
+++
Description:Describes the domain identification number of the switch
Context    :SWITCH, SwitchDisable
Module     :FABR
Key        :fabric.domain
RBAC       :Configure
Default    :1
Range      :1-239
CLI        :configure
```

```
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
++++
Description:Describes the mode of IDID
Context    :SWITCH, SwitchDisable
Module     :FABR
Key        :fabric.ididmode
RBAC       :Configure
Default    :0
Range      :0-1
CLI        :configure
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
++++
Description:Describes the value of RDP Poll Cycle
Context    :SWITCH, SwitchDisable
Module     :FABR
Key        :fabric.rdp_poll_cycle
RBAC       :Configure
Default    :1
Range      :0-24
CLI        :configure
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
++++
Description:Describes xisl use is on or off
Context    :SWITCH
Module     :SWCH
Key        :switch.xisluse
RBAC       :Configure
Default    :0
Range      :0-1
CLI        :configure
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
++++
Description:Defines whether the name of the uploaded config file should
have the switch name and the date appended to it
Context    :CHASSIS
Module     :CHS
Key        :cfgload.cfgfile_suffix
RBAC       :Configure
Default    :0
Range      :0-1
CLI        :configurechassis
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
+++++
Description:Defines whether the firmware sync should have happen when
the
standby CP is plugged in the chassis
Context    :CHASSIS
Module     :CHS
Key        :cfgload.firmware_sync
RBAC       :Configure
Default    :0
Range      :0-1
CLI        :configurechassis
```

```
+++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
++++++
Description:Specifies cmd line invocation if -p protocol is present
Context    :CHASSIS
Module     :SEC
Key        :cfgload.secure
RBAC       :Configure
Default    :0
Range      :N/A
CLI        :configureChassis
+++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
+++++++
```

See Also

configDefault, configShow, configureChassis, ipAddrSet, portCfgLongDistance, switchDisable, switchEnable, upTime

configureChassis

Changes chassis-level system configuration settings.

Synopsis

```
configurechassis
```

Description

Use this command to modify chassis-level system configuration settings.

Configuration data is grouped into chassis information and switch information. Each configuration type is managed separately.

Use the **configure** command to modify switch configuration parameters. Use the **configureChassis** command to modify the following chassis configuration parameters:

- Cfgload attributes

- Custom Attributes

- System settings

- fos attributes

- Web Tools attributes

- Secure Socket Layer (SSL) attributes

This command requires chassis permissions in both Virtual Fabric and non-Virtual Fabric environments.

The **configureChassis** command interactively presents a hierarchical menu. Each top-level heading and its associated subheadings consist of a text prompt, a selection of valid values, and a default value (in brackets).

The following keys control the execution of the command:

Return

When entered at a prompt with no preceding input, the command accepts the default value (if applicable) and moves to the next prompt.

Interrupt (Ctrl-C)

Aborts the command immediately and ignores all changes made.

End-of-file (Ctrl-D)

When entered at a prompt with no preceding input, terminates the command and saves changes made.

The following parameters can be modified with the **configureChassis** command:

Cfgload Attributes

Configures configuration upload and download parameters.

Enforce secure Config Upload/Download

Enables (yes) or disables (no) secure configuration upload or download. The default value is "no.

Add Suffix to the uploaded file name

Appends a suffix to the uploaded configuration file. The suffix includes the chassis name and a time stamp in the *yyymmdd_hhmmss* format. Refer to the example section for an illustration. This feature is disabled by default.

Do you want to enable auto firmwaresync

Enables the firmware from the active CP to synchronize automatically to the standby CP.

Custom Attributes

The following custom attributes can be modified.

config Index

OEM custom configuration. The range is 0 through 10000. The default is 0. This attribute is for internal use only.

System attributes

The following system-related parameters are configurable on a Virtual Fabric-aware switch.

system.blade.bladeFaultOnHwErrMsk

If this field is set to a value other than 0, then any nonfatal HW ASIC data parity error causes the problem blade to be powered off. The valid range is 0x0 to 0xffff. The default value is 0x0.

system.cpuLoad

Sets a threshold to define internally when the CPU is busy. The default threshold is 121, which represents a CPU instantaneous load average of 1.21 in the or top command. The range is 10 to 121 (representing CPU load thresholds of .10 to 1.21).

system.i2cTurboCnfg

Configures the i2c driver that manages processing of the i2c interrupts. The I2C Turbo mode is enabled (Setting 1) by default on all 16G platforms running Fabric OS v7.0 or later. The mode is disabled by default for any switches capable of running Fabric OS v6.4x and Fabric OS v6.3x. An upgrade preserves the pre-upgrade configuration. The value shown in brackets is the current value. The following values are supported:

0

Disables the I2C Turbo mode. When the I2C Turbo mode is disabled, every byte received by an i2c interrupt is scheduled for processing by the given task or process. This permits other high priority processes to complete, thereby allowing for possible delay in the receipt of the I2C response message.

1

Enables the I2C Turbo mode for SFP transceivers only. This is the default setting. When the I2C Turbo mode is enabled, every I2C byte received from an SFP transceiver is processed by the interrupt handler itself, thus preventing any higher priority processes from preempting this processing.

2

For internal use only.

system.Enable.bladeAutoRecovery

Enables or disables the blade auto-recovery option. The option is supported only on the Gen 6 chassis.

fos attributes

The following chassis-wide CS_CTL mappings can be modified:

CSCTL QoS Mode

Configures the CS_CTL to virtual channel (VC) mapping. After changing the CS_CTL QoS mode in a chassis, you must run the **slotPowerOff** and **slotPowerOn** commands for all the edge blades; In a fixed-port switch, you must reboot the switch. Because this mode change affects the persistent storage in the switch and chassis, rebooting is required for the new CS_CTL QoS mode to become effective.

0

Clears any previously configured CS_CTL to VC mapping and sets one-to-one mapping between a CS_CTL value and VC number for 8Gb/s-capable and 16Gb/s-capable ASIC. The CS_CTL values are divided into three groups: 1-8 (low priority), 9-16 (medium priority), and 17-24 (high priority). This is the default mode.

1

Sets the CS_CTL to VC mapping to support three CS_CTL values: 1 (low priority), 2 (medium priority), and 3 (high priority). Each CS_CTL value can map to more than one VC depending on the underlying support from ASIC. This is the auto mode. For more information about CS_CTL-based frame prioritization, refer to the *Brocade Fabric OS Administration Guide*.

Chassis SDDQ Limit

Specifies the number of user ports that can be quarantined in the chassis or unit. Valid values are 0 through 32. The default value is 10. The slow drain device quarantine (SDDQ) feature automatically isolates the slow-drain flows to a low priority VC from the existing VC (medium or high) thus freeing up the resources for the regular flows in the existing VC.

vTap and QOS High Priority Zone Compatibility Mode

Enables or disables vTap and QoS high priority zone compatibility mode. If vTap and QoSH compatibility is enabled and affected vTap features are also active on any of the logical switches within the chassis, then vTap/QoSH compatibility cannot be disabled. The vTap features must be deactivated on all the logical switches in the chassis before disabling vTap and QoSH compatibility mode. By default, this mode is disabled.

vTap and Encryption/Compression Coexistence Mode

Enables or disables vTap and Encryption/Compression Coexistence Mode. This mode is supported only on dual chip Gen 5 platforms such as Brocade 6520 and Brocade 8510 devices. The chassis level configuration of vTap and Encryption/Compression Coexistence Mode must be enabled for the Remote Flow Mirroring (RFM) and Encryption/Compression (ECB) to coexist. Also, execute **chassisdisable** followed by **chassisenable** commands to turn on the configuration. By default, this mode is disabled.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To add a suffix to the uploaded file name:

```
switch:admin> configurechassis

Configure...

cfgload attributes (yes, y, no, n): [no] y

   Enforce secure config Upload/Download (yes, y, no, n): [no]
   Add Suffix to the uploaded file name (yes, y, no, n): [no] y
   Do you want to enable auto firmwaresync (yes, y, no, n): [no]

Custom attributes (yes, y, no, n): [no]
system attributes (yes, y, no, n): [no]
fos attributes (yes, y, no, n): [no]
ssl attributes (yes, y, no, n): [no]
```

```
webtools attributes (yes, y, no, n): [no]
```

To change the CS_CTL-based frame prioritization to default mode (one-to-one mapping):

```
switch:admin> configurechassis
Configure...

cfgload attributes (yes, y, no, n): [no]
Custom attributes (yes, y, no, n): [no]
system attributes (yes, y, no, n): [no]
ssl attributes (yes, y, no, n): [no]
webtools attributes (yes, y, no, n): [no]
fos attributes (yes, y, no, n): [no] y
  CSCTL QoS Mode (0 = default; 1 = auto mode): (0..1) [1] 0
  Chassis SDDQ Limit: (0..32) [10]
```

To change the slow drain device quarantine limit:

```
switch:admin> configurechassis
Configure...

cfgload attributes (yes, y, no, n): [no]
Custom attributes (yes, y, no, n): [no]
system attributes (yes, y, no, n): [no]
ssl attributes (yes, y, no, n): [no]
webtools attributes (yes, y, no, n): [no]
fos attributes (yes, y, no, n): [no] y
  CSCTL QoS Mode (0 = default; 1 = auto mode): (0..1) [1]
  Chassis SDDQ Limit: (0..32) [10] 20
```

See Also

configDefault, configShow, chassisEnable, chassisDisable, configure, ipAddrSet, portCfgLongDistance, switchDisable, switchEnable, upTime

creditRecovMode

Enables credit loss recovery on back-end ports of 8Gb/s-capable, 16Gb/s-capable, 32Gb/s-capable blades, and time-out based credit loss detection of 8Gb/s-capable front-end ports.

Synopsis

```
creditrecovmode --cfg [off | onLrOnly | onLrThresh]
      [-lrthreshold threshold]
creditrecovmode --fault [edgeblade | coreblade | edgecoreblade]
creditrecovmode --check [slot/]blade_port,VC
creditrecovmode --fe_crdloss [off | on]
creditrecovmode --be_crdloss [off | on]
creditrecovmode --be_losync [off | on]
creditrecovmode --linkreset [slot/]blade_port
creditrecovmode --show
creditrecovmode --help
```

Description

Use this command to enable or disable credit recovery of backend ports and to display the configuration. When this feature is enabled, credit is recovered on backend ports (ports connected to the core blade or core blade backend ports) when credit loss has been detected on these ports. If complete loss of credit on a 8Gb/s-capable backend port causes frame timeouts, a link reset will be performed on that port regardless of the configured setting, even if that setting is **--cfg off**. When used with the **--cfg onLrOnly** option, the recovery mechanism takes the following escalating actions:

- When it detects credit loss, it performs a link reset and logs a RASlog message (RAS Cx-1014).

- If the link reset fails to recover the port, the port reinitializes. A RASlog message is generated (RAS Cx-1015). Note that the port reinitialization does not fault the blade.

- If the port fails to reinitialize, the port is faulted. A RASlog message (RAS Cx-1016) is generated.

- If a port is faulted and there are no more online backend ports in the trunk, the core blade is faulted. (Note that the port blade will always be faulted.) A RASlog message is generated (RAS Cx-1017).

When used with the **--cfg onLrThresh** option, recovery is attempted through repeated link resets and a count of the link resets is kept. If the threshold of more than the configured threshold value (using the **-lrthreshold** option) per hour is reached, the blade is faulted (RAS Cx-1018). Note that regardless of whether the link reset occurs on the port blade or on the core blade, the port blade is always faulted.

The **onLrOnly** and **onLrThresh** options activate link reset for both credit loss and loss of synchronization. The **be_crdloss** option activates link reset for credit loss only. The **be_losync** option activates link reset for loss of synchronization only.

If you suspect complete credit loss on a particular virtual channel (VC) on a particular backend port, use the **--check** option to examine that particular backend port and VC for credit loss. If the command detects complete credit loss, it reports the information. If, in addition, you have

enabled link resets on backend ports, this command will perform a link reset on the link in an attempt to recover from the problem. You must explicitly initiate this check and it is a one-time operation. In other words, this command does not continuously monitor for credit loss in the background. Detection of credit loss takes 2 to 7 seconds, after which the results of the operation are displayed. A link reset also generates a RASlog message.

For more information on the RASlog messages, refer to the *Brocade Fabric OS Message Reference Manual.*

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

This command is supported only on backend ports of 8Gb/s-capable, 16Gb/s-capable, and 32Gb/s-capable blades.

The **--check** option is supported only on modular switches, and only on links between 8Gb/s-capable backend ports or the 8Gb/s-capable to 16Gb/s-capable backend ports. AP blades are not supported.

The **--fe_crdloss** option is supported only on 8Gb/s-capable front-end interswitch link (ISL) ports.

Operands

This command has the following operands:

--cfg

Configures credit recovery for backend ports. Use one of the following required recovery options to configure credit recovery:

onLrOnly

Enables the backend port recovery feature in link reset mode.

onLrThresh

Enables the backend port recovery feature in link reset threshold mode.

off

Disables the backend port credit recovery feature.

-lrthreshold *threshold*

Specifies the link reset threshold value. The default value is 2. Note that the threshold value set using this option will apply only when the recovery mode is **onLrThresh**.

--fault

Configures the blade fault option. Valid values are as follows:

edgeblade

> The edge blade alone is faulted when the link reset threshold is reached.

coreblade

> The core blade alone is faulted when the link reset threshold is reached.

edgecoreblade

> The edge blade is faulted the first two times the link reset threshold value is reached. If the threshold value is reached the third time, the core blade is faulted.

--fe_crdloss

> Configures time-out based credit loss detection of 8Gb/s-capable front-end ISL links. This feature is disabled by default.

off

> Disables credit loss detection on 8Gb/s-capable front-end ports.

on

> Enables credit loss detection on 8Gb/s-capable front-end ports.

--be_crdloss

> Activates link reset when credit loss occurs on backend ports. This feature is disabled by default.

off

> Disables link reset for credit loss on backend ports.

on

> Enables link reset for credit loss on backend ports.

--be_losync

> Activates link reset when loss of synchronization occurs on backend ports. This feature is disabled by default.

off

> Disables link reset for loss of synchronization on backend ports.

on

> Enables link reset for loss of synchronization on backend ports.

-check

> Performs the on-demand detection of credit loss on a given backend port and VC. This operand is optional and exclusive; when you specify this option you cannot use the **--cfg** options at the same time. You must specify a port and a VC, separated by a comma. A space before the comma is not permitted.

slot/*blade_port*

> Specifies the backend port that is to be examined for credit loss. The port number must be the blade port number, because this is a backend port. The blade port number can be located in the "Bpt" column output of the **bladePortMap** command. Note that the **blade-portmap** command requires root permissions.

VC

> Specifies the Virtual Channel number. The valid range is from 1 through 31. VC 0 is invalid.

--linkreset *slot*/*blade_port*

> Performs a link reset on the specified front-end or back-end blade port. The blade port number can be located in the "Bpt" column output of the **bladePortMap** command. The **bladeportmap** command requires root permissions. The **--linkreset** option is not supported on Ethernet ports.

--show

> Displays the backend port credit recovery configuration as enabled or disabled. In addition, the output indicates whether link reset mode or link reset threshold mode is configured.

--help

> Displays the command usage.

Examples

> To enable backend port credit loss recovery with the link reset only option and to display the configuration:

```
switch:admin> creditrecovmode --cfg onLrOnly
switch:admin> creditrecovmode --show
Internal port credit recovery is Enabled with LrOnly
C2 FE Complete Credit Loss Detection is Enabled
```

> To enable backend port credit loss recovery with the link reset threshold option and to display the configuration:

```
switch:admin> creditrecovmode --cfg onLrThresh
switch:admin> creditrecovmode --show
Internal port credit loss recovery is Enabled with LrThresh
C2 FE Complete Credit Loss Detection is Enabled
```

To disable backend port credit loss recovery and to display the configuration:

```
switch:admin> creditrecovmode --cfg off
switch:admin> creditrecovmode --show
Internal port credit loss recovery is Disabled
C2 FE Complete Credit Loss Detection is Enabled
```

To configure a fault option and to display the configuration:

```
switch:admin> creditrecovmode --fault edgecoreblade
switch:admin> creditrecovmode --show
Internal port credit recovery is Disabled
Back end port Loss of Sync's Link Reset is Enabled with LrThresh
LR threshold (currently activated): 2
Fault Option : EDGECOREBLADE
C2 FE Complete Credit Loss Detection is Disabled
```

To disable credit loss detection on 8Gb/s-capable front-end ports:

```
switch:admin> creditrecovmode --fe_crdloss off
switch:admin> creditrecovmode --show
Internal port credit loss recovery is Disabled
C2 FE Complete Credit Loss Detection is Disabled
```

To examine a backend port for credit loss:

```
switch:admin> creditrecovmode --cfg off
switch:admin> creditrecovmode --check 2/32,1
Started Credit loss Detection on slot 2 port 32 VC 1.
Please wait....
Detected credit loss.
Link Reset performed.
```

To activate credit loss and loss of sync detection with link reset and set link reset threshold value to 10:

```
switch:admin> creditrecovmode --cfg onLrThresh --lrthreshold 10
switch:admin> creditrecovmode --show
Internal port credit recovery is Enabled with LrThresh
Back end port Loss of Sync's Link Reset is Enabled with LrThresh
LR threshold (currently activated): 10
Fault Option : COREBLADE
C2 FE Complete Credit Loss Detection is Disabled
```

To disable link reset for credit loss alone:

```
switch:admin> creditrecovmode --be_crdloss off
switch:admin> creditrecovmode --show
Internal port credit recovery is Disabled
Back end port Loss of Sync's Link Reset is Enabled with LrThresh
LR threshold (currently activated): 2
Fault Option : COREBLADE
C2 FE Complete Credit Loss Detection is Disabled
```

To enable link reset for loss of sync alone:

```
switch:admin>  creditrecovmode --be_losync on
switch:admin> creditrecovmode --show
Internal port credit recovery is Enabled with LrThresh
```

```
Back end port Loss of Sync's Link Reset is Enabled with LrThresh
LR threshold (currently activated): 2
Fault Option : COREBLADE
C2 FE Complete Credit Loss Detection is Disabled
```

See Also

None

dataTypeShow

Displays sample data stream types used in some diagnostic commands.

Synopsis

datatypeshow [**-seed** *value*]

Description

Use this command to display sample data stream types used in diagnostic commands. There are 25 different sample data types. The command displays an example of each data stream.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operand:

-seed *value*

Specify the data pattern seed value. This operand is optional. The default value is 0.

Examples

To display sample data streams you can use with diagnostics:

```
switch:admin> datatypeshow

Pattern    type       example

BYTE_FILL   1      15 15 15 15 15 15 15 15 15 15 15 15 15 15 15 15
WORD_FILL   2       0015  0015  0015  0015  0015  0015  0015  0015
QUAD_FILL   3  00000015      00000015      00000015      00000015
BYTE_NOT    4  15 ea 15 ea 15 ea 15 ea 15 ea 15 ea 15 ea 15 ea
WORD_NOT    5   0015  ffea  0015  ffea  0015  ffea  0015  ffea
QUAD_NOT    6  00000015      ffffffea      00000015      ffffffea
BYTE_RAMP   7  15 16 17 18 19 1a 1b 1c 1d 1e 1f 20 21 22 23 24
WORD_RAMP   8   0015  0016  0017  0018  0019  001a  001b  001c
QUAD_RAMP   9  00000015      00000016      00000017      00000018
BYTE_LFSR  10  1c 38 71 e3 c6 8d 1a 34 68 d0 a0 41 82 04 09 12
RANDOM     11  14 5b 52 66 77 c5 bc 76 5a 6e d3 e2 de 3b 6b 40
CRPAT      12  bc bc 23 47 6b 8f b3 d7 fb 14 36 59 bc bc 23 47
CSPAT      13  7f 7f 7f 7f 7f 7f 7f 7f 7f 7f 7f 7f 7f 7f 7f 7f
CHALF_SQ   14  b5 b5 b5 b5 b5 b5 b5 b5 b5 b5 b5 b5 b5 b5 b5 b5
CQTR_SQ    15  d9 26 d9 26 d9 26 d9 26 d9 26 d9 26 d9 26 d9 26
RDRAM_PAT  16  ff 00 ff 00 ff 00 ff 00 ff 00 ff 00 ff 00 ff 00
jCRPAT     17  be d7 23 47 6b 8f b3 14 5e fb 35 59 be d7 23 47
```

```
jCJTPAT      18  7e 7e 7e 7e 7e 7e 7e 7e 7e 7e 7e 7e 7e 7e 7e 7e
jCSPAT       19  7f 7f 7f 7f 7f 7f 7f 7f 7f 7f 7f 7f 7f 7f 7f 7f
PRED_RAND    20  00000015    11111126    22222237    33333348
SMI_TEST     21  00000015    ffffffea    00000015    ffffffea
CJPAT        22  7e 7e 7e 7e 7e 7e 7e 7e 7e 7e 7e 7e 7e 7e 7e 7e
QUAD_NOTP    23  00000015    fffffffa    00000015    fffffffa
JSPAT        24  7e 7e 7e 7e 7e 7e 7e 7e 9e f8 50 81 e7 50 aa c9
JTSPAT       25  7e 7e 7e 7e 7e 7e 7e 7e 9e f8 50 81 e7 50 aa c9
```

See Also

None

```
jCJTPAT      18  7e 7e 7e 7e 7e 7e 7e 7e 7e 7e 7e 7e 7e 7e 7e 7e
jCSPAT       19  7f 7f 7f 7f 7f 7f 7f 7f 7f 7f 7f 7f 7f 7f 7f 7f
```

date

Displays or sets the switch date and time.

Synopsis

date ["*newdate*"]

Description

Use this command to display or set the date and time. All switches maintain current date and time in flash memory. Date and time are used for logging events. Normal switch operation does not depend on the date and time; a switch with incorrect date values continues to function properly.

This command sets a common date and time for the entire fabric. A change in date or time to one switch is forwarded to the principal switch and distributed to the fabric. It may take up to 64 seconds for the switches in the fabric to be synchronized. However, if an FCS policy is enabled, this command can be executed only on the Primary FCS switch, and only the primary FCS switch can distribute the time stamp to all other switches in the fabric.

If Virtual Fabrics are enabled, the date is set for the entire chassis, including all logical switches.

The date specified is always the local switch time, taking into account daylight saving time and the time zone setup of the switch. Each switch takes care of converting the GMT time distributed fabric-wide to its local time. Refer to **tsTimeZone** for more information on time zone support.

If the switch is operating in FICON Management Server mode (**fmsMode**), setting the date is subject to the director clock alert mode (DCAM). If DCAM is 1, the operator issues a warning that the switch date is about to change. The operator then prompts to confirm the change with a yes or no response.

Notes

This command becomes read-only if external NTP synchronization is enabled. For more information, refer to **tsClockServer**.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operand:

"*newdate*"

Specify the new date and time enclosed in double quotation marks. this operand is optional; if omitted, the current date and time is displayed. Date and time are specified as a string in the *mmddhhmmyy* format.

mm

Specifies the month. Valid values are 01 to 12.

dd

Specifies the date. Valid values are 01 to 31.

hh

Specifies the hour. Valid values are 00 to 23.

mm

Specifies the minutes. Valid values are 00 to 59.

yy

Specifies the year, valid values are 00 to 37 and 70 to 99. Year values from 70 to 99 are interpreted as 1970 to 1999; year values from 00 to 37 are interpreted as 2000 to 2037.

Examples

To display the current date and time and then modify it:

```
switch:admin> date
Tue Oct 22 14:05:10 UTC 2013
switch:admin> date "1022140613"
Tue Oct 22 14:06:00 UTC 2013
```

See Also

errShow, portLogShow, tsClockServer, tsTimeZone, upTime

dbgShow

Displays current values of debug and verbosity levels of the specified module.

Synopsis

dbgshow [*module_name*]

Description

Use this command to display the current values of debug and verbosity levels of the specified module. If no module name is specified, this command displays a listing of all modules along with debug and verbosity levels.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operand:

module_name

Specifies the name of the module for which you want to view the debug and verbosity levels. Module names are case-sensitive. This operand is optional.

Examples

To display information about a specific module named NS:

```
switch:admin> dbgshow NS
Module NS,      debug level = 1, verbose level = 1
```

See Also

setDbg

defZone

Sets or displays the default zone access mode.

Synopsis

```
defzone [--noaccess | --allaccess | --show]
```

Description

Use this command to display or set the Default Zone access mode. Setting the Default Zone mode initializes a zoning transaction (if one is not already in progress), and create reserved zoning objects.

A default zone controls device access when zoning is not enabled. When a user-specified zoning configuration is not enabled, Default Zone is in effect, allowing access to all devices. When a user-specified zone configuration is enabled, it overrides the Default Zone access mode.

Notes

This command must be issued from the primary FCS switch.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Zone object names beginning with the **d_efault_** prefix are reserved for default zoning use. Editing of these objects is not permitted. Therefore, **cfgShow** does not display the names of these objects.

If **d_efault_Cfg** is the effective zone configuration, both **cfgShow** and **cfgActvShow** do not display **d_efault_Cfg** as the effective zone configuration.

Operands

This command has the following operands:

--noaccess

Sets the default zone access mode to No Access, initializes a zoning transaction (if one is not already in progress), and creates the reserved zoning objects equivalent to the following zoning commands:

- cfgCreate "d_efault_Cfg","d_efault_Zone"

- zoneCreate "d_efault_Zone","00:00:00:00:00:00:00:01"

A **cfgSave**, **cfgEnable**, or **cfgDisable** command must be issued after issuing this command to commit the changes and distribute them to the fabric; for example:

- defzone --noaccess

- cfgsave

An audit log record is generated for each execution of this command.

When No Access default zone is activated, the following conditions apply:

- If the current effective zone configuration is disabled with the **cfgDisable** command, the local switch converts this command to the equivalent of **cfgEnable "d_efault_Cfg"**.

- If zoning receives a **cfgDisable** command from a remote switch that does not support default zoning, zoning rejects the **cfgDisable** command in the second phase of RCS because the remote switch does not convert the **cfgDisable** command to **cfgEnable "d_efault_Cfg"**.

--allaccess

Sets the default zone access mode to All Access, initiates a zoning transaction (if one is not already in progress), and deletes the reserved zoning objects by performing the equivalent to the following zoning commands:

- cfgDelete "d_efault_Cfg"

- zoneDelete "d_efault_Zone"

A **cfgSave**, **cfgEnable**, or **cfgDisable** command must be performed subsequent to the use of this command to commit the changes and distribute them to the fabric. If a **cfgSave** is performed and the fabric is already in the No Access default zone state, a **cfgDisable** is sent to the fabric. For example:

- defzone --allaccess

- cfgsave

An audit log record is generated for each use of this command.

--show

Displays the current state of the default zone access mode.

Examples

To create a default zone configuration:

```
primaryfcs:admin> cfgactvshow
    Effective configuration:
      No Effective configuration

primaryfcs:admin> defzone --noaccess

primaryfcs:admin> cfgsave

primaryfcs:admin> defzone --show
Default Zone Access Mode
committed - No Access
transaction - No Transaction
```

```
primaryfcs:admin> cfgactvshow
      Effective configuration:
        No Effective configuration: (No Access)
```

See Also

        None

deviceLogin

Allows administrator to manage the port groups connected to the FI. Displays the port group information along with manual re-balance of the port group.

Synopsis

```
devicelogin --show
devicelogin --rebalance [wwn]
```

Description

Specifying the RE_BALANCE action used causes MAPS to rebalance device logins among the ports in a port group that is connected to a neighbor port aggregator (FI). The rebalance operation will selectively move some of the logins from heavily loaded ports to lightly loaded ports in an effort to balance the logins across the port group.

Use this command to display or rebalance the device logins in a port group manually, for example, during a maintenance window or during low system activity.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

The nodename WWN is a required parameter when using the rebalance option.

This feature is only supported with Cisco UCS connected FC ports.

Operands

This command has the following operands:

--show

Displays the list of port aggregator and its device distribution across the ports. A list of ports directly connected to the port aggregator is identified by the node WWN, which you specify as a parameter to the command If the nodename *WWN* is not specified, information for all port groups is displayed.

--rebalance [*wwn*]

Tells MAPS to take an action to rebalance the device logins among the ports that are directly connected to the port aggregator identified by the node WWN, specified as first parameter to the command. You must use the node *wwn* as a mandatory parameter when using the **--rebalance** option (operand).

Examples

To display the list of the port aggregator and its device distribution across the ports:

```
switch:admin> devicelogin --show
```

```
Node WWN                    |State          |Ports Count |Ports (Number
of devices |
------------------------------------------------------------------
-----------
20:80:8c:60:4f:f7:ed:81 |BALANCED       |3           |50(8), 53(8),
54(7)        |
```

To cause MAPS to try to rebalance the device logins among the ports directly connected to the port aggregator identified by the node *wwn*, specified as the first parameter to the command.

Using **devicelogin --rebalance** produces no output at the CLI prompt. It just performs the **-- rebalance** action.

```
switch:admin> devicelogin --rebalance 20:80:8c:60:4f:f7:ed:81
Node WWN                    |State          |Ports Count |Ports (Number
of devices |
------------------------------------------------------------------
-----------
20:80:8c:60:4f:f7:ed:81 |BALANCED       |3           |50(8), 53(8),
54(7)        |
```

See Also

logicalGroup, mapsConfig, mapsDb, mapsRule, mapsSam

diagClearError

Clears the diagnostics failure status.

Synopsis

diagclearerror [[**--slot**] *slot*] **-all**

Description

Use this command to clear the diagnostics failure status. When used without operands, this command clears all port failure flags.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operand:

--slot *slot*

Specify the slot on which to clear the diagnostics failure status. The default is set to 0 and designed to operate on fixed-port-count products.

-all

If specified, all blades clear.

Examples

To clear the diag software flag:

```
switch:admin> diagclearerror --slot 8
          ERROR: DIAG CLEARERR
Diagnostics Errors Cleared, port: 8/31
Err# 0120041 081F
```

See Also

None

diagDisablePost

Disables the power-on self-test (POST).

Synopsis

```
diagdisablepost
```

Description

Use this command to disable POST. A reboot is not required for this command to take effect. Use the **diagPost** command to display the current POST status, and use **diagEnablePost** to enable POST.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To disable the POST:

```
switch:admin> diagdisablepost
Config update Succeeded
Diagnostic POST is now disabled.
```

See Also

diagEnablePost, diagPost

diagEnablePost

Enables the power-on self-test (POST).

Synopsis

```
diagenablepost
```

Description

Use this command to enable POST. A reboot is not required for this command to take effect. POST includes two phases: POST Phase I mainly tests hardware and POST Phase II tests system functionality.

Use the **diagPost** command to display the current POST status, and use **diagDisablePost** to disable POST.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To enable POST:

```
switch:admin> diagenablepost
Config update Succeeded
Diagnostic POST is now enabled.
```

See Also

diagDisablePost, diagPost

diagHelp

Displays diagnostic command information.

Synopsis

diaghelp

Description

Use this command to display a short description of diagnostic commands.

Use default operands when running diagnostics commands. Non-default settings require detailed knowledge of the underlying hardware and are intended for support personnel only. Contact support if you want to use these operands.

Notes

The **diagHelp** command displays diagnostic commands that may not be available. Execute **help** *command* to verify availability.

Operands

None

Examples

To display diagnostic command information:

```
switch:admin> diaghelp
bpportloopbacktest          Functional test of port via
                            blade processor path.
bpturboramtest              MBIST test for AP blade BP ASICs
ceeportloopbacktest         Functional test of port N->N path.
ceeturboramtest             MBIST test for ASICs
(output truncated)
```

See Also

None

diagPost

Displays the diagnostic power-on self-test (POST) configuration.

Synopsis

diagpost

Description

Use this command to display the current POST configuration. Use **diagEnablePost** or **diagDisablePost** to modify the POST configuration.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To display the current POST configuration:

```
switch:admin> diagpost
Diagnostic POST is currently disabled.
```

See Also

None

diagShow

Displays diagnostics status.

Synopsis

```
diagshow
    [--slot number]
    [-post]
    [-port number]
    [-use_bports value]
```

Description

Use this command to display the diagnostics status for the specified list of ports.

Notes

You cannot interrupt the test by pressing the return key (<cr>).

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following optional operands:

--slot *number*

Specify which slot to operate on. If this option is not specified, the default slot 0 is used. The default slot is designed to operate on fixed-port-count products. By default, this command displays information for all user ports in the system. Default slot 0 is not valid in a chassis system.

-post

Displays the status of the last run power-on self-test (POST) on the specified slot. This operand is supported only on 32Gb/s-capable platforms.

-port *number*

Displays status of the specified user slot. This is the default behavior if the **-post** option is not specified.

-use_bports *value*

If this value is nonzero, this command displays the diagnostics status for the blade ports specified in **-use_bports**; otherwise, the command displays information for the user ports specified in **-uports**. The default value is 0.

Examples

To display diagnostic status on a switch blade:

```
switch:admin> diagshow
Slot#        Switch Type        ID   Status  Rev#   Blade     Post Status

0      Fixed Configuration Switch  171   ENABLED  2.0   FX8-24    POST
PASSED
(output truncated)
```

See Also

itemList

diagStatus

Displays currently running diagnostic tests.

Synopsis

diagstatus [*slotnumber*]

Description

Use this command to display currently running diagnostic test names.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operand:

slotnumber

Specifies the slot number to display diagnostic test names. If omitted, information for all blades in the system is displayed.

Examples

To display currently running diagnostic tests:

```
switch:user> diagstatus
Diagnostic status for slot: 1.
Diag executing "NONE"
Diagnostic status for slot: 2.
Diag executing "NONE"

Diagnostic status for slot: 3.
Diag executing "NONE"
Diagnostic status for slot: 4.
Diag executing "NONE"
(output truncated)
```

See Also

None

distribute

Distributes data to switches in a fabric.

Synopsis

```
distribute -p policy_list -d switch_list
```

Description

Use this command to distribute data to a specified list of switches in the fabric. The distributed data must be from the list of currently supported policy sets:

SCC

Switch Connection Control Policy

DCC

Device Connection Control Policy

PWD

Password Database and Password Configuration Policy

AUTH

E_Port and F_Port Authentication Policy

FCS

Fabric Configuration Server Policy

Each supported database has a switch-local configuration parameter that controls whether the database can be distributed and accepts distributions. Use the **fddCfg** command to view and modify these parameters.

Notes

IP Filter policies cannot be distributed with the **distribute** command. Use the **chassisDistribute** command.

The password database received from a switch running pre-v8.2.0 firmware will be rejected by a Virtual Fabric-enabled v8.2.0 or later chassis if it has more than one logical switch.

This command is not supported on the Brocade Analytics Monitoring Platform.

If FCS policy is enabled, only primary FCS switch can distribute the data.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

-p *policy_list*

Specify the list of policy sets, also called security databases, to be distributed. *policy_list* is a semicolon-separated list. Valid values include SCC, DCC, PWD, AUTH, and FCS.

-d *switch_list*

Specify the list of switches that should receive the data distribution. The *switch_list* is a semicolon-separated list of one of the following:

- Switch domain IDs

- Switch names

- Switch WWNs

A wildcard (*) may be specified to include all switches in the fabric that support the **distribute** feature.

Examples

To distribute the Switch Connection Control Policy and Device Connection Control Policy to domains 3 and 5 in the fabric:

```
switch:admin> distribute -p "SCC;DCC" -d "3;5"
```

To distribute the Switch Connection Control Policy, Fabric Configuration Server Policy, and Password database to all domains in the fabric that support the **distribute** feature:

```
switch:admin> distribute -p "SCC;FCS;PWD" -d "*"
Wildcard domains are:
1 3 5
```

To distribute the FCS policy, and the Password database to all domains and attached AGs in the fabric that support the **distribute** feature:

```
switch:admin> distribute -p "FCS;PWD" -d "*"
```

To distribute the AUTH and FCS policies to all switches in the fabric:

```
switch:admin> distribute -p "AUTH;FCS" -d "*"
```

To distribute the AUTH and SCC policies to domains 1 and 3 in the fabric:

```
switch:admin> distribute -p "AUTH;SCC" -d "1;3"
```

See Also

fddCfg

dlsReset

Disables Dynamic Load Sharing (DLS).

Synopsis

dlsreset

Description

Use this command to disable Dynamic Load Sharing.

If DLS is turned off, load sharing calculations are used only to place new routes. Once placed, existing routes are never moved from one output E_Port to another, unless the original output E_Port is no longer a recognized path to the remote domain. Optimal balance is rarely achieved with this setting. Refer to the **dlsSet** help page for a full description of load sharing options, including the Lossless feature and the E_Port Balance Priority feature.

The behavior of this command depends on the routing policies configured on the switch:

- If a port-based routing policy is in place, DLS is disabled by default, and **dlsReset** returns the DLS setting to default. This command resets the Lossless, and the E_Port Balance Priority features along with the DLS feature and returns a message stating that "DLS is not set".

- If an exchange-based routing policy is in place, DLS is always enabled. It cannot be disabled and the **dlsReset** command fails. The command generates a message stating that "DLS is enabled and cannot be changed with the current routing policy". If Lossless is enabled, the feature remains enabled until you disable it with the **dlsSet --disable -lossless** command. If E_Port Balance Priority is enabled, the feature remains enabled until you disable it with the **dlsset --disable -eportbal** command.

- If DLS is already disabled, the command output confirms the disabled status: "DLS is not set (unchanged)."

- If two-hop lossless DLS is enabled while DLS is disabled, the command output shows the message: "Two-hop lossless requires LosslessDLS be enabled prior to enabling."

Refer to **aptPolicy** for information on routing policies.

Notes

The Lossless feature is not supported on GbE ports and FCoE ports. On unsupported platforms, this command exits with an appropriate message.

On platforms that do not support the E_Port Balance Priority feature, the command output indicates that the feature is not supported.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To disable the Dynamic Load Sharing option on a switch with a port-based routing policy and DLS enabled:

```
switch:admin> dlsreset
DLS is not set
```

To execute **dlsReset** on a switch with an exchange-based routing policy and DLS enabled:

```
switch:admin> dlsreset
DLS is enabled and cannot be changed with the current routing policy
```

See Also

aptPolicy, dlsSet, dlsShow

dlsSet

Enables Dynamic Load Sharing (DLS) without frame loss.

Synopsis

```
dlsset
dlsset --enable -lossless
dlsset --enable -eportbal
dlsset --enable -twohop
dlsset --disable -lossless
dlsset --disable -eportbal
dlsset --disable -twohop
dlsset --rebalance
dlsset --rebalance -all
dlsset --help
```

Description

Use this command to enable or disable lossless Dynamic Load Sharing (DLS) in the event of a fabric change, to configure DLS without frame loss, and to display the DLS configuration.

Use this command to enable or disable the E_Port Balance Priority feature. Enabling E_Port balancing causes the E_Port load to be even across all E_Ports to the same domain. E_Port balancing is disabled by default.

Dynamic load sharing optimizes the utilization of the interswitch links (ISLs) by rebalancing the paths going over the ISLs whenever there is a fabric event that may result in a sub-optimal utilization of the ISL. Dynamic rebalancing can be triggered by any one of the following events:

•   A change in the fabric occurs.

•   A local E_Port (including trunk ports) goes up or down.

•   A local Fx_Port goes down.

When used without operands, this command enables Dynamic Load Sharing on a switch (legacy DLS behavior). Frames may be lost during reroute operations. If the switch has an exchanged-based routing policy, DLS is enabled by default and this command fails with the following message: "DLS is enabled and cannot be changed with the current routing policy."

During the load sharing recomputation, existing routes may be moved to maintain optimal load balance. Frame loss is unavoidable when a port goes down. To prevent frames from being lost during this operation, you can enable DLS without frame loss by issuing this command with the **--enable -lossless** option.

Dynamic load sharing without frame loss is supported in logical fabrics and is configured per logical switch. However, there is a potential impact on other logical switches because they share the same hardware. Chassis permissions are required to configure DLS in a logical fabric environment.

For example, assume a chassis is partitioned as follows: logical switch LS1 consists of ports 1/0-1/5, and logical switch LS2 consists of ports 1/6-1/10. Lossless is enabled on logical switch LS1. Because the ports 1/0-1/10 share the same chip, traffic in LS2 is affected whenever traffic

for LS1 on ports 1/0-1/5 is rebalanced. The impact on LS2 depends on the configuration on LS2:

•   If the Lossless feature is enabled on LS1, traffic pauses and resumes without frame loss on both switches at the same time.

•   If the Lossless feature is disabled on LS1, traffic on LS2 is not affected.

Notes

For switches running Fabric OS v7.1.0 or later, you can enable Lossless (or enable Fabric Management Server mode) when XISL is enabled and enable XISL when Lossless or Fabric Management Server mode is enabled.

When you downgrade from Fabric OS v7.1.x to Fabric OS v7.0.x the following rules apply: If Lossless (or Fabric Management Server mode) and XISL use are not enabled at the same time, firmware download can be executed. If both of them are enabled, firmware download is rejected with an error message.

If the active control processor (CP) runs Fabric OS v7.1.x or later, and the standby CP runs Fabric OS v7.0.x and if both Lossless (or Fabric Management Server mode) and XISLs are enabled, High Availability synchronization will fail. Otherwise, standby CP will synchronize with the active CP. After the synchronization of the active and standby CP, enabling Lossless (or Fabric Management Server mode), when XISL is enabled, is rejected with an error message. Enabling XISL, when Lossless (or Fabric Management Server mode) is enabled, is also rejected with an error message.

Use the **configure** command to disable XISL use.

Lossless is supported with both exchange-based and port-based routing policies. Behavior depends on the kind of policy configured and concurrent IOD settings. Refer to the *Brocade Fabric OS Administration Guide* for information on how to optimize your configuration. Refer to the **aptPolicy** help page for more information on routing policies.

The Lossless feature is not supported on GbE ports and FCoE. On unsupported platforms, this command exits with an appropriate message.

When the E_Port Balance Priority feature status is changed using **--enable -eportbal** or **--disable -eportbal**, the status of the DLS and Lossless features remains unchanged. The E_Port Balance Priority feature is supported only on multi-ASIC platforms like Brocade 6520, DCX 8510-8, and DCX 8510-4.

Two-hop Lossless DLS is not supported over LISLs.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

--enable -lossless

Enables the Lossless feature. Frame loss is reduced while the path is rerouted. If DLS is set on the switch, this command adds the Lossless feature to the existing DLS legacy mode. If DLS is not set on the switch, this command enables both DLS and the Lossless feature. The Lossless feature is disabled by default in Gen 5 switches; it is enabled by default in Gen 6 switches.

--disable -lossless

> Disables the previously enabled Lossless feature. Execution of this command is equiva-lent to the legacy **dlsSet** command. Dynamic load balancing is enforced but not without frame loss. DLS (legacy mode) continues to be enabled after Lossless is disabled. Use **dlsReset** to disable DLS completely.

--enable -eportbal

> Enables the E_Port Balance Priority feature. The E_Port load is rebalanced when topology changes occur, such as an E_Port going offline and then online. If DLS is disabled on the switch, it remains disabled with this command.

--disable -eportbal

> Disables the E_Port Balance Priority feature.

--enable -twohop

> Enables two-hop lossless DLS. When enabled, this enhancement coordinates route updates of the switches in the fabric such that the intermediate switches have performed their route rebalancing updates for the new path prior to an upstream switch attempting to use that new path. The Lossless feature must be enabled to perform route updates. Two-hop lossless DLS is disabled by default.

--disable -twohop

> Disables the previously enabled two-hop lossless DLS.

--rebalance

> Rebalances the E_Port load on a logical switch, without waiting for a topology change to occur.

--rebalance -all

> Rebalances the E_Port load on all logical switches, without waiting for a topology change to occur.

--help

> Displays the command usage.

Examples

> DLS configuration commands on a switch with an exchange-based policy:

```
switch:admin> aptpolicy
Current Policy: 3 0(ap)

 3 0(ap) : Default Policy
 1: Port Based Routing Policy
 3: Exchange Based Routing Policy
```

```
                       0: AP Shared Link Policy
                       1: AP Dedicated Link Policy

switch:admin> dlsshow

DLS is set by default with current routing policy

DLS is set with Lossless enabled

E-port Balance Priority is not set

switch:admin> dlsreset

DLS is enabled and cannot be changed with the current routing policy

switch:admin> dlsset

DLS is enabled and cannot be changed with the current routing policy

switch:admin> dlsset --enable -lossless

Lossless is set

switch:admin> dlsset --disable -lossless

Lossless is not set

switch:admin> dlssshow

DLS is set by default with current routing policy

E-port Balance Priority is not set
```

DLS configuration commands on a switch with a port-based policy:

```
switch:admin> dlsshow

DLS is set by default with current routing policy

DLS is set with Lossless enabled

E-port Balance Priority is not set

switch:admin> dlsreset

DLS is not set

switch:admin> dlsshow

DLS is not set

E-port Balance Priority is not set

switch:admin> dlsset --enable -lossless
```

```
DLS and Lossless are set

switch:admin> dlsshow

DLS is set with Lossless enabled

switch:admin> dlsset

Lossless is set (unchanged)

switch:admin> dlsset --disable -lossless

Lossless is not set

switch:admin> dlsshow

DLS is not set

E-port Balance Priority is not set
```

To attempt to enable Lossless while XISL use is enabled:

```
switch:admin> dlsset --enable -lossless

Lossless option cannot be enabled when XISL use is allowed.
Please disable the switch with 'switchdisable' and run \
 'configure' to disallow XISL use before enabling Lossless.
```

To enable the E_Port Balance Priority:

```
switch:admin> dlsset --enable -eportbal
E-port Balance Priority is set
```

To disable the E_Port Balance Priority:

```
switch:admin> dlsset --disable -eportbal
E-port Balance Priority is not set
```

To rebalance the E_Port load on a switch:

```
switch:admin> dlsset --rebalance
Route rebalance successful
```

To rebalance the E_Port load on all switches:

```
switch:admin> dlsset --rebalance -all
Route rebalance all successful
```

See Also

aptPolicy, dlsReset, dlsShow, iodReset, iodSet, iodShow, uRouteShow, topologyShow

dlsShow

Displays the setting of Dynamic Load Sharing (DLS).

Synopsis

```
dlsshow
```

Description

Use this command to display information about Dynamic Load Sharing configuration settings on the switch. Depending on the configuration, the command output displays one of the following messages:

- **DLS is set with Lossless enabled** - DLS is enabled with the Lossless feature. Load sharing is recomputed with every change in the fabric, and existing routes can be moved to maintain optimal balance. In Lossless mode, no frames are lost during this operation.

- **DLS is set with Lossless disabled** - DLS is enabled without the Lossless feature. Load sharing is reconfigured with every change in the fabric, and existing routes can be moved to maintain optimal balance. No attempt is made to prevent frames from being lost while load sharing is recomputed.

- **DLS is not set with Lossless disabled** - DLS is disabled and the Lossless option is disabled. Existing routes are never moved to maintain optimal balance. If the Lossless option was enabled before you disabled DLS, it is now disabled as well. This means, frame loss is not prevented during a load sharing recomputation.

- **DLS is set with Two-hop Lossless enabled** - DLS is enabled with Lossless and two-hop lossless DLS.

- **DLS is set with Lossless enabled, Two-hop Lossless disabled** - DLS with Lossless is enabled and the two-hop lossless DLS feature is disabled.

Refer to **dlsSet** for a description of load sharing.

This command also displays the status of the E_Port Balance Priority feature on the switch. If the feature is enabled, the message "E-port Balance Priority is set" displays. If the feature is disabled, the message "E-port Balance Priority is not set" displays.

Notes

The Lossless feature is not supported on GbE ports and FCoE ports. On unsupported platforms, this command exits with an appropriate message.

On platforms that do not support the E_Port Balance Priority feature, the command output indicates that the feature is not supported.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To display the current DLS and E_Port Balance Priority configuration on a switch with port-based routing:

```
switch:admin> dlsshow
DLS is set with Lossless enabled.
E_Port Balance Priority is set.
```

See Also

None

dnsConfig

Sets, displays, or removes domain name service (DNS) parameters.

Synopsis

```
dnsconfig
dnsconfig --add -domain name -serverip1 ipaddr -serverip2 ipaddr
dnsconfig --delete
dnsconfig --show
dnsconfig --help
```

Description

Use this command to display, set, or remove the domain name service parameters.

The domain name service parameters are the domain name and the name server IP address for primary and secondary name servers. The **dnsconfig** command displays IPv4 and IPv6 addresses.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--add

Sets the DNS configuration.

-domain *name*

Specifies the DNS domain name.

-serverip1 *ipaddr*

Specifies the DNS primary server IP address. The IP address can be an IPv4 or IPv6 address.

-serverip2 *ipaddr*

Specifies the DNS secondary server IP address. The IP address can be an IPv4 or IPv6 address.

--delete

Removes the DNS configurations.

--show

>Displays the current DNS configuration.

--help

>Displays the command usage.

Examples

>To set the DNS parameters for the system:

```
switch:admin> dnsconfig

Enter option
1 Display Domain Name Service (DNS) configuration
2 Set DNS configuration
3 Remove DNS configuration
4 Quit
Select an item: (1..4) [4] 2

Enter Domain Name: [] domain.com
Enter Name Server IP address in dot notation: [] \
    123.123.123.123
Enter Name Server IP address in dot notation: [] \
    123.123.123.124
DNS parameters saved successfully

Enter option
1 Display Domain Name Service (DNS) configuration
2 Set DNS configuration
3 Remove DNS configuration
4 Quit
Select an item: (1..4) [4] 4
```

>To configure the DNS domain name, DNS server address:

```
switch:admin> dnsconfig --add -domain www.cp0.com \
    -serverip1 192.168.1.1 -serverip2 192.168.201.1
DNS parameters saved successfully.
```

>To delete the DNS configurations:

```
switch:admin> dnsconfig --delete
DNS parameters removed successfully.
```

>To display the DNS configurations:

```
switch:admin> dnsconfig --show
Domain Name Server Configuration Information

_____
Domain Name           = www.cp0.com
Name Server IP Address = 192.168.1.1
Name Server IP Address = 192.168.201.1
```

See Also

configDownload, configUpload, firmwareDownload, ipAddrSet, ipAddrShow

enclosureShow

Displays attributes of the switch enclosure.

Synopsis

```
enclosureshow attribute
```

Description

Use this command to display attributes of the switch enclosure, including the vendor-specific enclosure identifier and the identifier of the enclosure interface to which the switch is attached.

This command applies to products that are embedded in a blade server or storage chassis. Most options are platform-specific. Options that do not apply to a platform are identified with a "Not supported on this platform" message.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operand:

attribute

Specifies the enclosure attribute. Valid attributes include the following:

id

The vendor-specific enclosure identifier.

modelname

The vendor-specific enclosure model name.

slotid

The identifier of the enclosure interface to which the switch is attached.

rackname

The name assigned by the enclosure manager to the rack.

rackid

The serial number assigned by the enclosure manager to the rack.

enclosurename

> The name assigned by the enclosure manager to the enclosure.

enclosureid

> The serial number assigned by the enclosure manager to the enclosure.

connname

> The product name used by the enclosure manager for the switch model.

connaddr

> The connector address used by the enclosure manager for this switch (indicates the physical position of the switch in the enclosure).

connid

> The serial number of the switch used by the enclosure manager (not to be confused with the Factory Serial Number).

conntype

> The connector type used by the enclosure manager for this model of switch.

connloc

> The switch location within the enclosure.

connpres

> Information about the presence of the switch that is used by the enclosure manager.

connfuse

> Information about whether or not the switch has a fuse.

uuid

> The Universal Unique ID for the switch if visible to the enclosure manager.

mmmacaddr

> The enclosure manager's Ethernet MAC Address.

snmpports

> The SNMP agent and trap ports if visible to the enclosure manager.

Examples

To display the identifier of the enclosure interface to which the switch is attached:

```
switch:admin> enclosureShow slotid
Bay 4
```

See Also

chassisShow

errClear

Clears all error log messages for all switch instances on this Control Processor (CP).

Synopsis

```
errclear
```

Description

Use this command to clear all internal and external error log messages for all switch instances on the CP where the command is executed. For products with a single processor, all error log messages are cleared. For products that contain multiple processors, this command can be executed on either control processor. It clears the error log only on the CP where the command is executed. For example, to clear the error log on the standby CP, issue **errclear** on the standby CP.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To clear the error log messages:

```
switch:admin> errclear
```

See Also

errDump, errShow

errDelimiterSet

Sets the error log start and end delimiters for messages sent to the console and syslog.

Synopsis

```
errdelimiterset
    [-s "start_delimiter_string"]
    [-e "end_delimiter_string"]
```

Description

Use this command to set the error log start and end delimiters for log messages sent to the console and syslog. An empty string clears the start and the end delimiters (including the colon) so that they are not displayed.

When used without operands, this command displays the existing **errDelimiterSet** configuration. The delimiter configuration is stored persistently.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Start and end delimiters are displayed only at the console; they are not displayed in a Telnet session or in the RASLog.

Operands

This command has the following operands:

-s "*start_delimiter_string*"

> Specifies an alphanumeric string for the start delimiter. The string can be up to 10 characters long and must be enclosed in double quotation marks. This operand is optional.

-e "*end_delimiter_string*"

> Specifies the alphanumeric string for the end delimiter. The string can be up to 10 characters long and must be enclosed in double quotation marks. This operand is optional.

Examples

To display the start and end delimiters:

```
switch:admin> errdelimiterset
delimiter start string: <none>
delimiter end string: <none>
```

To change the start and end delimiters (with sample output):

```
switch:admin> errdelimiterset -s "Start" -e "End"
switch:admin> errdelimiterset
```

```
delimiter start string: Start
delimiter end string: End
```

Sample output:

```
Start2003/03/10-09:54:03, [NS-1002], 1035,, ERROR,
 SWITCH43, Name Server received an invalid request
 from device 10:02:32:A3:78:23:23:End
```

See Also

errDump, errFilterSet, errShow

errDump

Displays the error log without pagination.

Synopsis

errdump [**--all**]
errdump [**--count** *number*]
errdump [**--reverse**]
errdump [**--severity** *severity*]
errdump [**--slot** *slotnum*]
errdump [**--attribute** *attribute*]
errdump [**--message** *msgID*]
errdump [**--start** *YYYY/MM/DD-HH:MM:SS*]
errdump [**--stop** *YYYY/MM/DD-HH:MM:SS*]
errdump [**--help**]

Description

Use this command to dump external error log messages without any page breaks. When executed without operands, this command prints all error messages for the logical switch context in which the command is executed.

The output of this command is unique for each control processor (CP). On dual CP systems this command must be executed on each CP to obtain a complete record.

Specify both **--start** and **--stop** operands to display messages within a time period. Specify the **--start** operand alone to display messages from a specific time to the end of the log. Specify the **--stop** operand alone to display messages from the beginning of the log to the specified time.

The following information is displayed in each message:

Start delimiter

Delimiter string for the start of a message.

Timestamp

Timestamp for the message.

Message ID

Message identifier.

External sequence number

Sequence number for the message.

Security audit flag

Security audit message displayed as AUDIT.

Severity

Severity of the message. Valid values include INFO, WARNING, ERROR, and CRIT-ICAL.

Switch name

Switch name for the generator of this message, or "chassis".

Message

Message body.

End delimiter

Delimiter string for the end of a message.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--all

Displays messages for the entire chassis for a user with chassis permissions. This operand is optional; if omitted, the messages for the current logical switch context are displayed.

--count *number*

Displays messages based on count value.

--reverse

Displays messages in reversed order. This operand is optional; if omitted, the messages display in chronological order.

--severity *severity*

Displays messages based on severity.

CRITICAL

Displays critical messages.

ERROR

Displays error messages.

WARNING

> Displays warning messages.

INFO

> Displays informational messages.

--slot *slotnum*

> Displays messages based on slot.

--attribute *attribute*

> Displays messages with the given attribute. Valid attributes values are ALL and FFDC.

--message *msgID*

> Displays all raslog messages based on the message ID.

--start *YYYY/MM/DD-HH:MM:SS*

> Displays messages from the given start time. The value of the time is related to the raslog storage time.

--stop *YYYY/MM/DD-HH:MM:SS*

> Display messages that are logged up to the given end time.

--help

> Displays command usage.

Examples

> To display the error log for the chassis:

```
switch:admin> errdump --all
Fabric OS: v8.0.1

2015/12/17-22:29:17, [SEC-1203], 9036, CHASSIS, INFO,\
   Spir_67, Login information : Login successful via \
   TELNET/SSH/RSH. IP Addr: 10.106.7.62

2015/12/17-22:29:17, [ZONE-1022], 9037, CHASSIS, INFO, \
   Spir_67, The effective configuration has changed to meh.

2015/12/17-22:29:17, [FABR-1001], 9041, CHASSIS, WARNING, \
   Spir_67, port 0, incompatible Long distance mode.

2015/12/17-22:29:17, [LOG-1000], 9043, CHASSIS, INFO, \
   Spir_67, Previous message repeated 1 time(s)
(output truncated)
```

To display messages for a slot:

```
switch:admin> errdump --slot 4
Fabric OS: v8.0.1

2015/06/19-03:26:44, [HAM-1004], 31, SLOT 4 | CHASSIS, INFO, \
   pluto_19, Processor rebooted - Reboot.

2015/06/19-03:26:44, [SULB-1003], 32, SLOT 4 | CHASSIS, INFO, \
   pluto_19, Firmwarecommit has started.

2015/06/19-03:26:44, [IPAD-1001], 33, SLOT 4 | CHASSIS, INFO, \
   pluto_19, CP/1 IPv6 manual fe80::224:38ff:fe1b:4400 DHCP Off.

2015/06/19-03:29:15, [IPAD-1000], 48, SLOT 4 | CHASSIS, INFO, \
   pluto_19, CP/0 Ether/0 IPv6 autoconf
   fd00:60:69bc:816:205:1eff:fe84:3f49/64 tentative DHCP Off.

2015/06/19-03:29:15, [IPAD-1000], 51, SLOT 4 | CHASSIS, INFO, \
   pluto_19, CP/1 Ether/0 IPv6 autoconf
   fd00:60:69bc:816:205:1eff:fe84:4aa1/64 tentative DHCP Off.
```

To display messages based on severity:

```
switch:admin> errdump --severity WARNING
Fabric OS: v8.0.1

2015/06/18-20:24:52, [SULB-1001], 2, SLOT 5 | CHASSIS, WARNING, \
   pluto_19, Firmwaredownload command has started.

2015/06/18-20:36:08, [FSSM-1003], 6, SLOT 5 | CHASSIS, WARNING, \
   pluto_19, HA State out of sync.

2015/06/18-20:36:11, [FABR-1001], 8, SLOT 5 | FID 128, WARNING, \
   sw0, port 268, ESC detected Fabric ID conflict with neighbor \
   (FID 10).

2015/06/18-20:36:11, [FABR-1001], 9, SLOT 5 | FID 128, WARNING, \
   sw0, port 281, ESC detected Fabric ID conflict with neighbor \
   (FID 20).

2015/06/18-20:36:11, [FABR-1001], 10, SLOT 5 | FID 128, WARNING, \
   sw0, port 265, ESC detected Fabric ID conflict with neighbor\
    (FID 1).
```

To display messages based on attributes:

```
switch:admin> errdump --attribute FFDC
Fabric OS: v8.0.1

2015/06/19-03:58:42, [LOG-1001], 81, SLOT 5 | FFDC | CHASSIS, \
   WARNING, pluto_19, A log message was dropped
```

To display messages based on count value:

```
switch:admin> errdump --count 3
```

```
Fabric OS: v8.0.1

2015/06/18-20:23:09, [LOG-1003], 1, SLOT 5 | CHASSIS, INFO, \
    pluto_19, The log has been cleared.

2015/06/18-20:24:52, [SULB-1001], 2, SLOT 5 | CHASSIS, WARNING, \
    pluto_19, Firmwaredownload command has started.

2015/06/18-20:24:52, [SULB-1036], 3, SLOT 5 | CHASSIS, INFO, \
    pluto_19, The current Version: Fabric OS v8.0.1
```

To display raslog messages based on a message ID:

```
switch:admin> errdump --message SEC-1203
Fabric OS: v8.0.1

2015/11/21-11:06:21, [SEC-1203], 19, FID 128, INFO, switch, \
    Login information: Login successful via TELNET/SSH/RSH. \
     IP Addr: 10.70.12.104

2015/11/21-12:32:40, [SEC-1203], 20, FID 128, INFO, switch, \
    Login information: Login successful via TELNET/SSH/RSH. \
     IP Addr: 172.26.1.93

2015/11/22-10:27:41, [SEC-1203], 21, FID 128, INFO, switch, \
    Login information: Login successful via TELNET/SSH/RSH. \
     IP Addr: 10.70.4.109
```

To display messages from specified time to the end of the log:

```
switch:admin> errdump --start 2015/10/10-2042:06
Fabric OS: v8.0.1
2015/10/10-20:42:06, [XTUN-1997], 16, CHASSIS, WARNING,
ch3456789012345678901234, \
    FTRACE buffer 0 on slot 1 dp 2 has been triggered.
2015/10/10-20:42:06, [PLAT-1001], 17, CHASSIS, INFO,
ch3456789012345678901234, \
    CP0 resetting other CP (double reset may occur).
2015/10/10-20:42:06, [XTUN-1997], 18, CHASSIS, WARNING,
ch3456789012345678901234, \
    FTRACE buffer 0 on slot 1 dp 2 has been triggered.
2015/10/10-20:42:07, [PLAT-1001], 19, CHASSIS, INFO,
ch3456789012345678901234, \
    CP0 resetting other CP (double reset may occur).
2015/10/10-20:42:07, [XTUN-1997], 20, CHASSIS, WARNING,
ch3456789012345678901234, \
    FTRACE buffer 0 on slot 1 dp 2 has been triggered.
2015/10/10-20:42:07, [PLAT-1001], 21, CHASSIS, INFO,
ch3456789012345678901234, \
    CP0 resetting other CP (double reset may occur).
```

To display messages from beginning of the log to the specified time:

```
switch:admin> errdump --stop 2015/10/10-20:42:05
Fabric OS: v8.0.1
```

```
2015/10/10-20:41:58, [LOG-1003], 1, CHASSIS, INFO,
ch345678901234567890 1234, \
    The log has been cleared.
2015/10/10-20:42:05, [XTUN-1997], 2, CHASSIS, WARNING,
ch345678901234567890 1234, \
    FTRACE buffer 0 on slot 1 dp 2 has been triggered.
2015/10/10-20:42:05, [PLAT-1001], 3, CHASSIS, INFO,
ch345678901234567890 1234, \
    CP0 resetting other CP (double reset may occur).
2015/10/10-20:42:05, [XTUN-1997], 4, CHASSIS, WARNING,
ch345678901234567890 1234, \
    FTRACE buffer 0 on slot 1 dp 2 has been triggered.
2015/10/10-20:42:05, [PLAT-1001], 5, CHASSIS, INFO,
ch345678901234567890 1234, \
    CP0 resetting other CP (double reset may occur).
2015/10/10-20:42:05, [XTUN-1997], 6, CHASSIS, WARNING,
ch345678901234567890 1234, \
    FTRACE buffer 0 on slot 1 dp 2 has been triggered.
2015/10/10-20:42:05, [PLAT-1001], 7, CHASSIS, INFO,
ch345678901234567890 1234, \
    CP0 resetting other CP (double reset may occur).
```

To display messages within a time period:

```
switch:admin> errdump --start 2015/10/10-20:42:06 --stop 2015/10/10-20:42:07
Fabric OS: v8.0.1
2015/10/10-20:42:06, [XTUN-1997], 8, CHASSIS, WARNING, \
    ch345678901234567890 1234, FTRACE buffer 0 on slot 1 \
     dp 2 has been triggered.
2015/10/10-20:42:06, [PLAT-1001], 9, CHASSIS, INFO, \
    ch345678901234567890 1234, CP0 resetting other CP \
     (double reset may occur).
2015/10/10-20:42:06, [XTUN-1997], 10, CHASSIS, WARNING, \
    ch345678901234567890 1234, FTRACE buffer 0 on slot 1 \
     dp 2 has been triggered.
2015/10/10-20:42:07, [PLAT-1001], 19, CHASSIS, INFO, \
    ch345678901234567890 1234, CP0 resetting other CP \
     (double reset may occur).
2015/10/10-20:42:07, [XTUN-1997], 20, CHASSIS, WARNING, \
    ch345678901234567890 1234, FTRACE buffer 0 on slot 1 \
     dp 2 has been triggered.
2015/10/10-20:42:07, [PLAT-1001], 21, CHASSIS, INFO, \
    ch345678901234567890 1234, CP0 resetting other CP \
     (double reset may occur).
```

See Also

errDelimiterSet, errFilterSet, errShow

errFilterSet

Sets a filter for an error log destination.

Synopsis

errfilterset [**-d** *destination*][**-v** *severity*]

Description

Use this command to set a filter for an error log destination. A filter is set based on the severity level of the messages.

When used without operands, this command displays the filters that are currently in configured.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

-d *destination*

Specifies the destination for the filter. The string **console** is the only valid value at this time.

-v *severity*

Specifies the minimum severity level of the message to pass through the filter. Valid values are INFO, WARNING, ERROR, or CRITICAL. Input values are not case-sensitive.

Examples

To display the current filter settings:

```
switch:admin> errfilterset
```

```
console: filter severity = WARNING
```

To set the filter severity level for the console:

```
switch:admin> errfilterset -d console -v warning
```

See Also

errDump, errShow

errModuleShow

Displays all the defined error log modules.

Synopsis

errmoduleshow

Description

Use this command to display a list of all defined error log modules.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To display a list of all defined error log modules:

```
switch:user> errmoduleshow
Module IDs:

  1 KT           2 UT           3 TRCE          4 KTRC
  5 LOG          6 CDR          7 BLPU          8 PISP

  9 PIXE        10 EGR         11 BL           12 PIC
 13 PS          14 RTE         15 AS           16 AUTH
 17 BLDE        18 BLM         19 BPRT         20 CER
 21 CFLD        22 CFMN        23 CHPS         24 CONF
(output truncated)
```

See Also

errDump, errShow

errShow

Displays the error log messages with pagination.

Synopsis

errshow [-a | -r | -t | -o]

Description

Use this command to display external error log messages one at a time. When executed without operands, this command prints the error messages for the logical switch context in which the command is executed. When used with the **-a** option, the command prints the error messages for the entire chassis. The messages are displayed with page breaks. The **-r** operand displays the messages in reversed order.

The output of this command is unique for each Control Processor (CP). On dual CPs this command must be executed on each CP to obtain a complete record.

Specify both **-t** and **-o** operands to display messages within a time period. Specify the **-t** operand alone to display messages from a specific time to the end of the log. Specify the **-o** operand alone to display messages from the beginning of the log to the specified time.

The following information displays in each message:

Start delimiter

Delimiter string for the start of a message.

Timestamp

Timestamp for the message.

Message ID

Message identifier.

External sequence number

Sequence number for the message

Security audit flag

Security audit message displayed as AUDIT.

Severity

Severity of the message. Valid values include INFO, WARNING, ERROR, and CRIT-ICAL.

Switch name

Switch name for the generator of this message, or "chassis".

Message

> Message body.

End delimiter

> Delimiter string for the end of a message.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

-a

> Displays messages for the entire chassis for a user with admin and chassis permissions. This operand is optional; if omitted, the messages for the current logical switch context are displayed.

-r

> Displays messages in reversed order. This operand is optional; if omitted, the messages display in the chronological order.

-t

> Displays messages from the given start time. The value of the time is related to the raslog storage time.

-o

> Display messages that are logged up to the given end time.

Examples

To display the error log for the chassis:

```
switch:admin> errshow -a
Fabric OS: v8.0.1

2015/06/11-10:16:07, [SEC-1203], 261, FID 128, INFO, \
   switch, Login information: Login successful via \
   TELNET/SSH/RSH. IP Addr: 192.0.2.2

[Type <CR> to continue, Q<CR> to stop:

2015/06/11-10:44:13, [TS-1002], 262, FID 128, INFO, \
   switch, External Clock Server used instead of \
```

```
      LOCL: locl: 0x45585400 remote: 0x4c4f434c.

[Type <CR> to continue, Q<CR> to stop:

2015/06/11-11:00:49, [SNMP-1005], 287, FID 128, INFO, \
   switch, SNMP configuration attribute, SNMPv3 Trap \
   Recipient IP Address 6, has changed from [192.0.2.10] \
   to [0.0.0.0].

[Type <CR> to continue, Q<CR> to stop:

2015/06/11-11:00:49, [SNMP-1005], 288, FID 128, INFO, \
   switch, SNMP configuration attribute, SNMPv3 Trap \
   Recipient Severity Level 6, has changed from 4 to 0.

[Type <CR> to continue, Q<CR> to stop:
```

To display messages from specified time to the end of the log:

```
switch:admin> errshow -t 2016/10/31-19:17:23
Fabric OS: v8.0.0
2015/10/31-19:17:25, [IPAD-1000], 15, CHASSIS, INFO, Brocade5300, \
   SW/0 Ether/0 IPv6 autoconf 2012::90/64 DHCP Off.

Type <CR> to continue, Q<CR> to stop:

2015/10/31-19:17:25, [HAM-1004], 16, CHASSIS, INFO, Brocade5300, \
   Processor rebooted - Hareboot.

Type <CR> to continue, Q<CR> to stop:

2015/10/31-19:17:29, [FV-1001], 17, CHASSIS, INFO, switch, \
   Flow Vision daemon initialized.

Type <CR> to continue, Q<CR> to stop:
```

To display messages from beginning of the log to the specified time:

```
switch:admin> errshow -o 2015/10/31-19:01:05
Fabric OS: v8.0.1
2015/10/31-18:59:52, [LOG-1003], 1, CHASSIS, INFO, Brocade5300, \
   The log has been cleared.

Type <CR> to continue, Q<CR> to stop:

2015/10/31-19:00:09, [SEC-1203], 2, FID 128, INFO, switch, \
   Login information: Login successful via TELNET/SSH/RSH. IP Addr:
10.70.12.103

Type <CR> to continue, Q<CR> to stop:

2015/10/31-19:00:10, [SEC-1203], 3, FID 128, INFO, switch, \
   Login information: Login successful via TELNET/SSH/RSH. IP Addr:
10.70.12.103
```

```
Type <CR> to continue, Q<CR> to stop:

2015/10/31-19:00:16, [RAS-1007], 4, CHASSIS, INFO, Brocade5300, \
   System is about to reload.

Type <CR> to continue, Q<CR> to stop:
```

To display messages within a time period:

```
switch:admin> errshow -t 2015/10/31-19:01:06 -o 2015/10/31-19:01:11
Fabric OS: v8.0.1
2015/10/31-19:01:06, [IPAD-1000], 5, CHASSIS, INFO, Brocade5300, \
   SW/0 Ether/0 IPv6 autoconf 2012::90/64 DHCP Off.

Type <CR> to continue, Q<CR> to stop:

2015/10/31-19:01:06, [IPAD-1001], 6, CHASSIS, INFO, Brocade5300, \
   CP/0 IPv6 autoconf fe80::224:38ff:fea5:6200 DHCP not Set.

Type <CR> to continue, Q<CR> to stop:

2015/10/31-19:01:06, [IPAD-1000], 7, CHASSIS, INFO, Brocade5300, \
   SW/0 Ether/0 IPv6 autoconf 2620:100:4:f801:205:33ff:fe00:9b28/64
tentative DHCP Off.

Type <CR> to continue, Q<CR> to stop:

2015/10/31-19:01:06, [HAM-1004], 8, CHASSIS, INFO, Brocade5300, \
   Processor rebooted - Fastboot.

Type <CR> to continue, Q<CR> to stop:

2015/10/31-19:01:06, [IPAD-1000], 9, CHASSIS, INFO, Brocade5300, \
   SW/0 Ether/0 IPv6 autoconf 2620:100:4:f801:205:33ff:fe00:9b28/64
DHCP Off.

Type <CR> to continue, Q<CR> to stop:

2015/10/31-19:01:11, [FV-1001], 10, CHASSIS, INFO, switch, \
   Flow Vision daemon initialized.

Type <CR> to continue, Q<CR> to stop:
```

See Also

errDelimiterSet, errDump, errFilterSet

ethIf

Displays and sets the link operating mode for a network interface.

Synopsis

```
ethif --set interface -auto-negotiate | -an [on | off] -speed [speed] -
duplex [full]
ethif --reseterror interface
ethif --show interface
ethif --help
```

Description

Use this command to set and view the link operating mode for a network interface.

Changing the link mode is not supported for all network interfaces or for all Ethernet network interfaces. On the CP of a Brocade DCX or DCX-4S, this command supports **eth0** and **eth3** as interface parameters. On all other platforms, only **eth0** is supported.

The CP on a Brocade DCX or DCX-4S has two external physical Ethernet management ports, **eth0** and **eth3**. Both interfaces are bonded together to form a single logical interface, **bond0**.

The management port IP addresses are assigned to the logical interface, **bond0**. Link layer Ethernet operations are applied to the physical interfaces, **eth0** and **eth3**.

Ethernet bonding provides link layer redundancy using the active-standby failover model. The two Ethernet ports must be part of the same subnet. By default, all traffic is transmitted over the active Ethernet port, **eth0**. The second Ethernet port, **eth3**, acts as a standby interface and no traffic is transmitted over it. When the active Ethernet port is disconnected, the alternate Ethernet port becomes active. When the system reboots, the Ethernet port **eth0** is always made active if it is connected.

When executed with the **bond0** operand, **ethif --show** displays the active Ethernet port.

When selecting autonegotiation, you can choose the specific link operating modes that are advertised to the link partner. At least one common link operating mode must be advertised by both sides of the link.

When forcing the link operating mode, both sides of the link must be forced to the same mode. The link does not work reliably if one side is set to autonegotiate and the other side is set to forced mode.

Exercise care when using this command. Forcing the link to an operating mode not supported by the network equipment to which it is attached may result in an inability to communicate with the system through its Ethernet interface. It is recommended that this command be used only from the serial console port. When used through an interface other than the serial console port, the command displays a warning message and prompts for verification before continuing. This warning is not displayed and you are not prompted when the command is used through the serial console port.

For dual-CP systems, this command affects only the CP to which you are currently logged in to set the link operating mode on the active CP, you must issue this command on the active CP; to set the link operating mode on the standby CP, you must issue this command on the standby CP. During failover, the link operating mode is retained separately for each CP, because the physical links may be set to operate in different modes.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--set

Sets a link operating mode for a network interface.

interface

Specifies the name of the interface, optionally enclosed in double quotation marks. Valid interfaces include the following:

eth0 | eth3

Displays the link operating mode of the specified interface. The value **eth3** is valid only on the CP of a Brocade DCX or DCX-4S.

bond0

Displays the active Ethernet port. This operand is valid only on the CP of a DCX or a DCX-4S.

-auto-negotiate | -an

Configures auto-negotiation.

on | off

Sets auto-negotiation on or off.

-speed *speed*

Configures the speed. You can configure 1000, 100, or 10 as the speed. Note that 1000Mb/s speed can be configured only when auto-negotiation is on.

-duplex

Configures the capability of operation as full duplex.

--reseterror *interface*

Resets error counters on the network interface. The valid values for *interface* are **eth0** and **eth3**.

--show

Displays the link operating mode for a network interface.

interface

Specifies the name of the interface, optionally enclosed in double quotation marks. Valid interfaces include the following:

eth0 | eth3

Displays the link operating mode of the specified interface. The value **eth3** is valid only on the CP of a Brocade DCX or DCX-4S.

bond0

Displays the active Ethernet port. This operand is valid only on the CP of a DCX or a DCX-4S.

--help

Displays the command usage.

Examples

To set the link operating attributes on a network interface interactively:

```
switch:admin> ethif --set eth0
Exercise care when using this command. Forcing the link to an operating
mode not \
supported by the network equipment to which it is attached, may result
in an \
inability to communicate with the system through its ethernet
interface.

It is recommended that you only use this command from the serial console
port.

Are you sure you really want to do this? (yes, y, no, n): [no] yes
Proceed with caution.
Auto-negotiate (yes, y, no, n): [no] yes Advertise 100 Mbps / \
Full Duplex (yes, y, no, n): [yes] Advertise 10 Mbps / \
Full Duplex (yes, y, no, n): [yes] Committing configuration...done.
```

To set the link operating attributes on a network interface:

```
switch:admin> ethif --set eth0 -an on -speed 100 -duplex full
an:on
speed:100
cap:full
MII_CMD:-A

ADVERTISE:Advertise
DEFMODE:yes
auto:1
MII_MODE:100baseTx-FD,
Committing configuration...done.
```

To reset the link operating attributes on eth0:

```
switch:admin> ethif --reseterror eth0
Statistics cleared for eth0
```

To view the link operating attributes on bond0:

```
switch:admin> ethif --show bond0
bond0 interface:

bond0 includes physical interfaces: eth0 eth3
Currently Active Interface: eth0
Currently Slave Interface: eth3
Link mode: negotiated 1000baseT-FD, link ok
MAC Address: 00:05:1E:86:7B:79

bond0     Link encap:Ethernet  HWaddr 00:05:1E:86:7B:79
          inet addr:10.38.18.135  Bcast:10.38.31.255  Mask:255.255.240.0
            UP BROADCAST RUNNING MASTER MULTICAST  MTU:1500  Metric:1
            RX packets:2373 errors:0 dropped:0 overruns:0 frame:0
            TX packets:56 errors:0 dropped:0 overruns:0 carrier:0
            collisions:0 txqueuelen:0
```

To view the link operating attributes on a network interface:

```
switch:admin> ethif --show eth0
eth0 interface:

Link mode: negotiated 1000baseT-FD, link ok
MAC Address: 00:05:1E:86:7B:79

eth0      Link encap:Ethernet  HWaddr 00:05:1E:86:7B:79
            UP BROADCAST RUNNING SLAVE MULTICAST  MTU:1500  Metric:1
            RX packets:2397 errors:0 dropped:0 overruns:0 frame:0
            TX packets:55 errors:0 dropped:0 overruns:0 carrier:0
            collisions:0 txqueuelen:1000
```

See Also

ipAddrSet, ipAddrShow

extnCfg

Sets the extension mode configuration.

Synopsis

```
extncfg --ve-mode [--slot slot] 10VE | 20VE
extncfg --app-mode fcip | hybrid
extncfg --ge-mode copper | optical
extncfg --config -default | -clear [-slot slot | -all]
extncfg --fwld-prep [-version version] [-abort]
extncfg --auth-error-monitor [enable | disable]
extncfg --show
extncfg --help
```

Description

Use this command to set the extension mode configuration. This command switches the Field Programmable Gate Array (FPGA) images, the VE_Port mappings, or the GbE port availability.

Notes

The execution of this command is disruptive and requires a switch reboot.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--slot *slot*

For chassis-based systems only, specifies the slot number of the port to be configured, followed by a slash (/).

--ve-mode 10VE | 20VE

Switches the VE_Port mode between 10 VE_Ports and 20 VE_Ports. The default VE_Port mode is 10VE.

--app-mode fcip | hybrid

Sets the system extension mode to FCIP or hybrid (FCIP with IPEXT in the Brocade 7810, Brocade 7840, and Brocade SX6 only). The default APP_Port mode is FCIP for the Brocade 7840 and Brocade SX6. Configuring the switch for hybrid mode is disruptive. The switch reboots and loads the hybrid image. The Brocade 7810 supports only hybrid mode, and the device boots into hybrid mode by default and cannot be configured to FCIP mode.

--ge-mode copper | optical

Sets the GbE port availability to copper or optical. Supported only on the Brocade 7810 Extension Switch. Switching between copper or optical ports is nondisruptive and no switch reboot is required.

--config -default

Removes active extension configurations from the specified slot or all slots.

--config -clear

Removes the inactive (stale) extension configurations from the specified slot or all slots. After executing this command, you must run the **slotPowerOff** and **slotPowerOn** commands for the extension blade to clear the configurations completely.

-all

For chassis-based systems only, indicates all slots in the chassis.

--fwld-prep [-version *version*] [-abort]

Prepares the switch for a firmware download to the specified firmware version. The **-version** option is optional. If the version is not specified, this command prepares the switch for a downgrade to the previous Fabric OS version that contains the extension configuration changes.

--fwld-prep [-abort]

Allows the reversal of the previously completed firmware download preparation performed by ESMD.

--auth-error-monitor [enable | disable]

Enables or disables the IPsec Auth Error Monitor. This operand is supported only on the Brocade FX8-24 blade.

--show

Displays the current extension mode configuration.

--help

Displays the command usage.

Examples

To display the current extension mode configuration:

```
switch:admin> extncfg --show
App Mode is FCIP
VE-Mode: configured for 10VE mode.
GE-Mode: Not Applicable.
```

To switch the extension VE-mode configuration:

```
switch:admin> extncfg --ve-mode 20VE
This operation will require a reboot of the switch and will disrupt
any running traffic.
Are you sure you want to proceed? (y/n): y

Operation Succeeded. Rebooting Switch.
```

To switch the extension GE-mode configuration:

```
switch:admin> extncfg --ge-mode copper
Operation Succeeded.

switch:admin> extncfg --show
APP Mode is HYBRID (FCIP with IPEXT)
VE-Mode: Not Applicable.
GE-Mode: configured for Copper mode.
```

To configure the system for hybrid mode:

```
switch:admin> extncfg --app-mode hybrid
This action will configure the system for Hybrid (FCIP/IPExt) mode.

WARNING: This is a disruptive operation that requires a reboot \
    to take effect. Would you like to continue (Y,y,N,n): [ n] y

Operation succeeded. Rebooting the system...

switch:admin> extncfg --show
APP Mode is Hybrid (FCIP with IPEXT)
VE-Mode: configured for 20VE mode.
GE-Mode: Not Applicable.
```

To prepare the switch for firmware download to Fabric OS 8.0.1:

```
switch:admin> extncfg --fwdl-prep -version 8.0.1
Operation Succeeded.
```

To revert the switch from previous firmware download preparation:

```
switch:admin> extncfg --fwdl-prep -version 8.0.1 -abort
```

To enable or disable IPSec Auth error monitor:

```
switch:admin> extncfg --show
IPSec Auth-Error Reset Detection: Disabled
switch:admin> extncfg --auth-error-monitor enable
Operation succeeded.

switch:admin> extncfg --show
IPSec Auth-Error Reset Detection: Enabled
```

See Also

>   **None**

fabRetryShow

Displays the retry count of the fabric commands.

Synopsis

```
fabretryshow
```

Description

Use this command to display the retry count of the fabric commands. For each port, the command output displays counts for the following Switch Internal Link Service (SW_ILS) requests:

ELP

Exchange Link Parameters

EFP

Exchange Fabric Parameters

HA_EFP

Exchange Fabric Parameters used during warm recovery

DIA

Domain Identifier Assigned

RDI

Request Domain Identifier

BF

Build Fabric

FWD

Fabric Controller Forward

EMT

Fabric Controller Mark Timestamp

ETP

Fabric Controller Trunk Parameters

RAID

Return Address Identifier

GAID

Get Address Identifier

ELP_TMR

Used internally for fabric application (not a SW_ISL)

GRE

Get Route Entry

ECP

Exchange Credit Parameters

ESC

Exchange Switch Capabilities

EFMD

Exchange Fabric Membership Data

ESA

Exchange Security Attributes

DIAG_CMD

Diagnostic Command

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To display the retry count of Fabric OS Commands:

```
switch:user> fabretryshow
                         SW_ILS
E_Port ELP  EFP  HA_EFP DIA  RDI  BF   FWD  EMT  ETP  RAID \
```

```
34       0     0     0      0     0     0     0     0     0     0     \
35       0     0     0      0     0     0     0     0     0     0     \

GAID ELP_TMR GRE   ECP   ESC   EFMD ESA   DIAG_CMD

0    0        0     0     0     0     0     0
0    0        0     0     0     0     0     0
```

See Also

      None

fabRetryStats

Displays or manages the retry count of fabric commands.

Synopsis

```
fabretrystats --show
fabretrystats --clear
fabretrystats --help
```

Description

Use this command to view and clear the retry count of the fabric commands. The **--clear** option clears the counters for all the Switch Internal Link Service (SW_ILS) requests. For each E/D_Port, the **--show** option displays the counters for the following Switch Internal Link Service (SW_ILS) requests:

ELP

> Exchange Link Parameters

EFP

> Exchange Fabric Parameters

HA_EFP

> Exchange Fabric Parameters used during warm recovery

DIA

> Domain Identifier Assigned

RDI

> Request Domain Identifier

BF

> Build Fabric

FWD

> Fabric Controller Forward

EMT

> Fabric Controller Mark Timestamp

ETP

> Fabric Controller Trunk Parameters

RAID

Return Address Identifier

GAID

Get Address Identifier

ELP_TMR

Used internally for fabric application (not a SW_ISL)

GRE

Get Route Entry

ECP

Exchange Credit Parameters

ESC

Exchange Switch Capabilities

EFMD

Exchange Fabric Membership Data

ESA

Exchange Security Attributes

DIAG_CMD

Diagnostic Command

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place.
Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--show

Displays the retry count of fabric commands for all E_Ports and D_Ports.

--clear

Clears the retry count of fabric commands.

--help

Displays the command usage.

Examples

To display the retry count of fabric commands:

```
switch:admin> fabretrystats --show
                          SW_ILS
-------------------------------------------------------------\
E/D_Port   ELP    EFP    HA_EFP   DIA    RDI    BF    FWD    EMT \
-------------------------------------------------------------------------
--\
3           1      0      0        0      0      0     0      0 \
12          0      2      0        0      0      0     0      0 \
    ETP    RAID   GAID   ELP_TMR   GRE    ECP    ESC   EFMD   ESA   DIAG_CMD
     0      0      0      0         0      0      0     0      0      0
     0      0      0      0         0      0      0     0      0      0
```

To clear the retry count of fabric commands:

```
switch:admin> fabretrystats --clear
switch:admin> fabretrystats --show
                          SW_ILS
-------------------------------------------------------------\
E/D_Port   ELP    EFP    HA_EFP   DIA    RDI    BF    FWD    EMT \
-------------------------------------------------------------------------
--\
3           0      0      0        0      0      0     0      0 \
12          0      0      0        0      0      0     0      0 \
    ETP    RAID   GAID   ELP_TMR   GRE    ECP    ESC   EFMD   ESA   DIAG_CMD
     0      0      0      0         0      0      0     0      0      0
     0      0      0      0         0      0      0     0      0      0
```

See Also

fabRetryShow, fabStatsShow

fabricLog

Displays (all users) or manipulates (admin) the fabric log.

Synopsis

```
fabriclog -s | --show [dport]
fabriclog -c | --clear [dport]
fabriclog -d | --disable [dport]
fabriclog -e | --enable [dport]
fabriclog -t | --failstop dport
fabriclog -h | --help
```

Description

Use this command to display, clear, disable, or enable the fabric log. When used with the **--show** option, this command displays the following information:

Time Stamp

Time of the event in the following format *HH:MM:SS:MS*.

Input and *Action

Fabric log message. An asterisk (*) in the message indicates an action. The link reset information is indicated by LR_IN and LR_OUT. LR_IN indicates a link reset on the remote switch, whereas LR_OUT indicates a link reset on the local switch.

S

Current switch state. Valid switch states include the following:

FO

Build Fabric (BF) received.

F1

Reconfigure Fabric (RCF) is not supported.

F2

Exchange Fabric Parameters (EFP) is waiting for last Accept Frame (ACC) from flood.

F3

Flood EFPs.

D0

The switch is the principal switch.

D1

The principal switch is sending Domain ID Assigned (DIA).

D2

The principal switch is waiting for Request Domain ID (RDI).

D3

The principle switch is processing the RDI.

A0

The switch is not the principal switch.

A1

The non-principal switch is sending a DIA.

A2

The non-principal switch is waiting for an RDI.

A3

The non-Principal switch is processing an RDI.

S0

The switch is in offline state.

P

Port state. Port states include the following:

PO

The port is offline.

P1

The port is online.

P2

Exchange Link Parameters (ELP) Accept Frame (ACC) received.

P3

Link reset occurred on master or E_Port.

I0

Trunk Initiator: Exchange Mark Timestamp (EMT) sent.

I1

Trunk Initiator: Exchange Trunking Parameters (ETP) Accept Frame (ACC) received.

I2

Trunk Initiator: ETP sent.

I3

Trunk Initiator: Link reset occurred.

I4

Trunk Initiator: Link reset done on slave.

T0

Trunk Target: EMT received.

T1

Trunk Target: ETP received.

T2

Trunk Target: Link reset.

T3

Trunk Target: Link reset done on slave.

LD

Dynamic long distance ECP sent or received.

ESC

Exchange Switch Capabilities (ESC) state between P2 and P3.

Sn

Next switch state. Refer to switch states for valid states.

Pn

Next port state. Refer to port states for valid states.

Port

Port number, if applicable, or NA

Xid

OXID (Exchange ID) Port number, if applicable, or NA

Refer to the FC-SW-5 specification for more information on the port and switch states logged by this command.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

-s | --show [dport]

Displays the fabric log. Optionally displays the D_Port logs only.

-c | --clear [dport]

Clears the fabric log. Optionally clears the D_Port logs only.

-d | --disable [dport]

Disables the fabric log. By default, the fabric log is enabled. Optionally disables the D_Port logs only.

-e | --enable [dport]

Enables the fabric log. Optionally enables the D_Port logs only.

-t | --failstop dport

Disables D_Port logs on the first D_Port test failure. This option is cleared automatically when the D_Port fabric log is enabled.

-h | --help

Displays the command usage.

Examples

To display the fabric log:

```
switch:admin> fabriclog -s
```

```
Time Stamp      Input and *Action                          S, P   Sn,Pn
Port  Xid
====================================================================
===============
Switch 0; Thu Feb 23 06:55:59 2012 GMT (GMT+0:00)
06:55:59.661357 *Fss Init                                  NA,NA  NA,NA
NA    NA
06:55:59.661606 *Initiate State                            NA,NA  F2,NA
NA    NA
06:55:59.963652 Expd1 0x00000000 0000ffff ffffffff ffffffff F2,NA
F2,NA  0    NA
06:56:03.242214 Rcv FSS_RECOV_COLD                          F2,NA  F2,NA
NA    NA
06:56:03.242264 D-port Offline Skip Cnt 1(inst = 1)        F2,NA  F2,NA
NA    NA
06:58:44.880675 SCN LR_PORT (0);g=0x22; LR_IN              A2,P0  A2,P0
41    NA
07:00:12.107354 D-port Offline Skip Cnt 1(inst = 4)        F2,NA  F2,NA
NA    NA
07:00:12.640790 SCN LR_PORT (0);g=0x0; LR_OUT              F2,P0  F2,P0
11    NA
07:00:12.772930 SCN Port Online;g=0x0;                     F2,P0  F2,P1
11    NA
(output truncated)
```

To display the cleared fabric log:

```
switch:admin> fabriclog -s
Time Stamp  Input and *Action     S, P   Sn,Pn  Port  Xid
=========================================================
Number of entries: 0
Max number of entries: 64
```

See Also

None

fabricName

Configures fabric name and displays the fabric name parameter.

Synopsis

```
fabricname --set fabric_name
fabricname --clear
fabricname --show
fabricname --help
```

Description

Use this command to display the name of the fabric.

With Virtual Fabrics it is not uncommon to have multiple fabrics in a single chassis. These logical fabrics are identified by their Fabric ID.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operand:

--set *fabric_name*

Configures the fabric name to the string provided by the argument, which length can be from 1 to 128 characters.

--clear

Clears the fabric name that was already set.

--show

Displays the fabric name. If a fabric name is not configured, an appropriate message is displayed.

--help

Displays the command usage.

Examples

To set fabric name:

```
switch:user> fabricname --set newfabric
Fabric Name set to "newfabric"
```

To display the fabric name:

```
switch:user> fabricname --show
Fabric Name: "newfabric"
```

To clear the fabric name already set:

```
switch:user> fabricname --clear
Fabric Name cleared!
```

See Also

switchShow, fabricShow

fabricPrincipal

Sets the principal switch selection mode.

Synopsis

```
fabricprincipal --help | -h
fabricprincipal [--show | -q]
fabricprincipal --enable
     [ -priority | -p priority]
     [-force | -f ]
fabricprincipal --disable
fabricprincipal [-f] mode
```

Description

Use this command to set principal switch selection mode for a switch and to set priorities for principal switch selection.

The implementation of the **fabricPrincipal** command is based solely on mechanisms specified in the Fibre Channel standards. These mechanisms provide a preference for a switch requesting to be the principal switch in a fabric, but they do not provide an absolute guarantee that a switch requesting to be the principal switch is granted this status.

When dealing with large fabrics, the selection of the principal switch is less deterministic. In these cases, to help ensure that the desired switch is selected as the principal switch, a small cluster of switches should be interconnected first, followed by additional switches to enlarge the fabric.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--help |-h

Displays the command usage.

--show

Displays the current mode setting and principal switch selection priority. This operand is optional; if not specified, **fabricPrincipal** displays the same data as with the **--show** option.

-q

Displays principal mode only (enabled or disabled). This is a legacy command option that does not display the priority settings.

--enable

Enables principal switch selection. The following operands are optional. If you do not provide a priority value, the system assigns the default of 0x01 or generates a value based on the switch state.

-priority | -p *priority*

Sets the principal selection priority of the switch. The specified priority value is used in the principal switch selection protocol when the fabric rebuilds. Not all of these values can be assigned.

0x00

Reserved. This value cannot be assigned.

0x01

Highest priority. This is a user-defined value

0x02

Switch was principal prior to sending or receiving a build fabric (BF) request. This value is generated by the switch to initiate a fabric reconfiguration. This value should not be assigned.

0x3 - 0xFE

Priority value range. Choose a value in this range to indicate priority. Higher numbers mean lower priority.

0xFF

Switch is not capable of acting as a principal switch. This is a user-defined value. Use **--enable** with a new priority to revert to this condition.

-force | -f

Forces a fabric rebuild regardless of whether the switch is principal or subordinate. This option is not valid with the**--disable** command.

--disable

Disables principal switch selection. This command resets the priority to the default value 0xFE.

[-f] *mode*

Sets the principal switch selection mode. Specify 1 to enable principal switch selection mode. Specify 0 to disable principal switch selection mode. Optionally, use the -f operand to force a fabric rebuild. Mode changes take effect when the fabric rebuilds. This operand is optional.

Examples

To enable a high fabric principal priority setting:

```
switch:admin> fabricprincipal --enable -p 0xff
Principal Selection Mode enabled (Activate in \
  next fabric rebuild)
```

To disable the principal mode selection:

```
switch:admin> fabricprincipal --disable
Principal Selection Mode disabled
```

To display the current mode setting:

```
switch:admin> fabricprincipal -q
Principal Selection Mode: Enable
```

To disable the mode setting:

```
switch:admin> fabricprincipal 0
Principal Selection Mode disabled
```

To enable the mode setting:

```
switch:admin> fabricprincipal 1
Principal Selection Mode enabled
```

To enable the mode setting and force fabric rebuild:

```
switch:admin> fabricprincipal -f 1
Principal Selection Mode enabled \
    (Forcing fabric rebuild)
```

To display the principal switch selection priority:

```
switch:admin> fabricprincipal --show
Principal Selection Mode: Enable
Principal Switch Selection Priority: 0x10
```

See Also

fabricShow

fabricShow

Displays fabric membership information.

Synopsis

```
fabricshow [-membership | -chassis | -paths | -version]
fabricshow -help
```

Description

Use this command to display information about switches in the fabric.

If the switch is initializing or is disabled, the message "no fabric" is displayed.

Running this command on an FCR or edge switch does not provide any router information; running this command on an edge switch with the -**membership** option does provide router information.

If the fabric is reconfiguring, some or all switches may not be displayed; otherwise, the following fields are displayed depending on the command option used:

Switch ID

The switch Domain_ID and embedded port D_ID.

Worldwide Name

The switch WWN.

Enet IP Addr

The switch Ethernet IP address for IPv4- and IPv6-configured switches. For IPv6 switches, only the static IP address displays.

FC IP Addr

The switch IP FC (IP over Fibre Channel) address.

Name

The switch symbolic name. An arrow (>) indicates the principal switch.

FC Router IP Addr

The IP address of the FC Router. This field is empty if the switch is not an FC Router or it the FC Router does not support it.

FC Router Name

The FC Router symbolic name. This field is empty if the switch is not an FC Router or it the FC Router does not support it.

Chassis WWN

The world wide name of the chassis. For switches running firmware versions that do not distribute the chassis WWN, this field displays "NA".

Chassis Name

The name of the chassis. For switches running firmware versions that do not distribute the chassis name, this field displays "NA".

Fabric Name

If the fabric has an assigned name, the fabric name is displayed at the end of the command output.

Path Count

The number of currently available paths to the remote domain.

Version

The firmware version of the domain.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

-membership

Displays fabric membership information with additional details of the FC Router, if present in the fabric.

-chassis

Displays information about the chassis including chassis WWN and chassis name.

-paths

Displays the number of paths available to each remote domain.

-version

Displays firmware version details for each domain.

-help

Displays the command usage.

Examples

The following example illustrates a fabric of four switches. The switch named "sw180" is the Principal switch. Three of the switches are configured to run IP over Fibre Channel. The fabric name is configured.

```
switch:admin> fabricshow
Switch ID    Worldwide Name              Enet IP Addr     FC IP Addr    Name
----------------------------------------------------------------------
-
64:fffc40 10:00:00:60:69:00:06:56 192.168.64.59  192.168.65.59  "sw5"
65:fffc41 10:00:00:60:69:00:02:0b 192.168.64.180
192.168.65.180>"sw180"

66:fffc42 10:00:00:60:69:00:05:91 192.168.64.60  192.168.65.60  "sw60"
67:fffc43 10:00:00:60:69:10:60:1f 192.168.64.187  0.0.0.0     "sw187"

The Fabric has 4 switches
Fabric Name: mainFabricA
```

To show a mixed fabric with IPv4- and IPv6-configured switches (the fabric name is not configured):

```
switch:admin> fabricshow
Switch ID  Worldwide Name              Enet IP Addr    FC IP Addr      Name
----------------------------------------------------------------------
-
1:fffc41 10:00:00:60:69:00:02:0b 192.168.64.180
192.168.65.180>"sw180"
                                    1080::8:800:200C:1234/64
2:fffc42 10:00:00:60:69:00:05:91 192.168.64.60  192.168.65.60  "sw60"

The Fabric has 2 switches.
```

To show additional details of the FC Router, if present:

```
switch:admin> fabricshow -membership
Switch ID     Name             ENET IP Addr   FC Router    FC Router
                                              IP Addr      Name
----------------------------------------------------------------------
  1: fffc01  fcr_sprint_01 10.33.59.224
160: fffca0  fcr_fd_160    0.0.0.0          10.33.59.25  fcr_meteor2
190: fffcbe  fcr_mojo_6    10.33.59.32

The Fabric has 3 switches
```

To show additional details about the chassis:

```
switch:admin> fabricshow -chassis
Switch ID      Name           ENET IP Addr  Chassis WWN    Chassis Name
----------------------------------------------------------------------
4:fffc04 sw5100_126_128 10.38.17.126 10:00:00:05:1e:0e:eb:58 Brcd5100
5:fffc05 sw1500_127_128 10.38.17.127 10:00:00:05:1e:0e:eb:98 Brcd5100

The Fabric has 2 switches
```

To show additional details about the paths:

```
switch:admin> fabricshow -paths
Switch ID    Name     ENET IP Addr   Worldwide Name            Path Count
--------------------------------------------------------------------------
28:  fffcb2 DCX_28  192.0.2.28    10:00:00:05:1e:e5:ab:00  N/A
38:  fffcbc DCX_38  192.0.2.38    10:00:00:05:1e:47:cb:00  9

The Fabric has 2 switches
```

To show firmware version details:

```
switch:admin> fabricshow -version
Switch ID   Worldwide Name          Enet IP Addr    FC IP Addr     Version
---------------------------------------------------------------------------
-------
  1: fffc01 10:00:00:05:1e:82:3c:2a 10.25.224.140   11.22.33.44
v8.2.0a
```

See Also

fabricName, switchShow

fabStatsShow

Displays fabric statistics.

Synopsis

```
fabstatsshow
```

Description

Use this command to display statistics for the fabric. The following information is displayed:

- Number of times a switch domain ID has been forcibly changed

- Number of E_Port offline transitions

- Number of fabric reconfigurations

- Number of fabric segmentations resulting from any of the following causes:
    - Loopback

    - Incompatibility

    - Overlap

    - Zoning

    - E_Port segment

    - Licensing

    - Disabled E_Port

    - Platform DB

    - Security incompatibility

    - Security violation

    - ECP error

    - Duplicate WWN

    - E_Port isolated

    - MSFR/RD H&T WWN conflict (internal only)

    - Enhanced/Overlapping TI zones (ETIZ) Incompatibility

    - Exchange Switch Capabilities (ESC) detected conflict

    - Encryption conflict - Both ends are not configured for encryption

    - Compression conflict - Both ends are not configured for encryption

    - Encryp/Comp bw availability - Encryption or compression - Configured but lack of bandwidth in the ASIC

For each recorded incident, the command provides the following additional information:

Count

The total number of times the specific event occurred on various ports on the switch.

Port

The number of the port where the latest incident occurred. An arrow (<) next to the port number denotes the type of event that occurred last.

Timestamp

The time when the latest incident occurred.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To display the fabric statistics:

```
switch:admin> fabstatsshow

Description                   Count   Port    Timestamp
--------------------------   ------  ------  ----------------
Domain ID forcibly changed:      0
E_Port offline transitions:      0
Reconfigurations:                2  0   Sat Dec 18 14:29:56 2010
Segmentations due to:
                 Loopback:       0
          Incompatibility:       0
                  Overlap:       0
                   Zoning:       0
          E_Port Segment:        0
                Licensing:       0
          Disabled E_Port:       0
              Platform DB:       0
      Sec Incompatibility:       0
             Sec Violation:      0
                ECP Error:       0
            Duplicate WWN:       0
            Eport Isolated:      0
            VF AD conflict:      0
   MSFR/RD H&T WWN conflict:   0
      ETIZ Incompatibility:      0
      ESC detected conflict:     0
        Encryption conflict:     0
       Compression conflict:     0 < 349   Wed Oct 27 15:33:58 2010
Encryp/Comp bw availability:     0
           Defzone conflict:     0
    Alias Peer Zone Conflict:    0
```

```
        Enh Zone Objt Naming Conflict:   0
        Chassis Zone DB Size Exceeded:   0
        Fabric Zone DB Size Exceeded:    0
            Zone Merge Timed Out:        0
        Zone Merge Internal Error:       0
    '<'  - Denotes the type of event that occurred last.
```

See Also

fabRetryShow

factoryFanShow

Retrieves the fan sensor information from an Energy Management module and display the values for each unit.

Synopsis

```
factoryfanshow
```

Description

Use this command to retrieve fan sensor and fan speed information for each unit.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To retrieve fan sensor and speed information for each unit:

```
switch:admin> factoryfanshow
Fan 1 sensor 1 is OK, speed is 6535 RPM
Fan 2 sensor 1 is OK, speed is 6535 RPM
Fan 3 sensor 1 is OK, speed is 6535 RPM
```

See Also

None

fanDisable

Disables a fan unit.

Synopsis

fandisable *unit*

Description

Use this command to disable a nonfaulty fan unit by setting the RPM speed to 0.

Notes

This command is not available on nonbladed systems.

Disabling the fan units on a Brocade X6 Director does not change their RPM speed to 0.

Fan units on a Brocade X6 Director take few minutes to change the speed to minimum RPM after being disabled.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operand:

unit

Specifies the number of the fan unit to disable.

Examples

To disable a fan unit:

```
switch:admin> fandisable 1

Fan unit 1 has been disabled
```

See Also

fanEnable, fanShow

fanEnable

Enables a fan unit.

Synopsis

fanenable *unit*

Description

Use this command to set a previously disabled fan unit back to the default RPM speed.

Notes

This command is not available on nonbladed systems.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operand:

unit

    Specify the fan unit number to enable.

Examples

To enable a fan unit:

```
switch:admin> fanenable 1

Fan unit 1 has been enabled
```

See Also

fanDisable, fanShow

fanShow

Displays fan status and speed.

Synopsis

```
fanshow
```

Description

Use this command to display the current status and speed of each fan in the system.

Fan status is displayed as follows:

OK

Fan is functioning correctly.

absent

Fan is not present.

below minimum

Fan is present but rotating too slowly or stopped.

above maximum

Fan is rotating too quickly.

unknown

Unknown fan unit installed.

faulty

Fan has exceeded hardware tolerance and has stopped. In this case, the last known fan speed is displayed.

The output from this command varies depending on switch type and number of fans present.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To display information on the fans in the system:

```
switch:admin> fanshow
Fan #1 is OK, speed is 2721 RPM
Fan #2 is OK, speed is 2657 RPM
Fan #3 is OK, speed is 2700 RPM
```

See Also

chassisShow, fanDisable, fanEnable, psShow

faPwwn

Manages fabric-assigned port world wide names.

Synopsis

```
fapwwn --enable -port [slot/]port[-port]
fapwwn --enable -ag AG_WWN] -port port
fapwwn --disable -port [slot/]port[-port]
fapwwn --disable -ag AG_WWN -port port
fapwwn --assign [-ag AG_WWN] -port [slot/]port [-v VPWWN]
fapwwn --delete -port [slot/]port[-port]
fapwwn --delete -ag AG_WWN [-port port]
fapwwn --delete -v VWWN
fapwwn --move -srcport source_port -dstport dest_port
fapwwn --move -srcag AG_WWN -srcport source_port
    -dstag AG_WWN -dstport dest_port
fapwwn --show [-port | -ag ] all
fapwwn --show -port [slot/]port[-port]
fapwwn --show -ag AG_WWN [-port]
fapwwn --help
```

Description

Use this command to create and manage fabric-assigned port world wide names (FA-PPWWNs) for Dynamic Fabric Provisioning (DFP). A FA-PWWN is a "virtual" port WWN that will bind to a device port and can be later assigned to a physical device. A FA-PWWN can be either user-generated or automatically assigned by the fabric. The automatically assigned FA-PWWN is created by default when you enable the feature without explicitly providing a VPWWN. With FA-PWWNs assigned to FC ports or Access Gateway (AG) ports, you can provision the ports in advance with zoning configurations, access control, or Ports on Demand assignments, and you can easily move servers across ports or Access Gateways by way of reassigning the FA-PWWN to another port.

The **fapwwn** command supports the following management tasks:

• Bind an automatically assigned or a user-assigned FA-PWWN to a switch port.

• Override an automatically assigned FA-PWWN with a user-assigned FA-PWWN.

• Bind an AG port with an automatically assigned or a user-assigned FA-PWWN.

• Delete any existing FA-PWWN bindings.

• Move a FA-PWWN from one port to another port.

• Move a FA-PWWN assigned to an AG port to another AG.

• Display information about configured FA-PWWN bindings.

A single port can be assigned up to two WWNs, one assigned automatically and one assigned by the user. Only one FA-PWWN can be active at any given time. The user-assigned FA-PWWN takes precedence over the automatically assigned FA-PWWN. This means, the switch will bind the user-assigned FA-PWWN to the port if both a user-assigned and an automatically assigned FA-PWWN are available.

FA-PWWN configurations are saved persistently and are preserved even if the feature is disabled on a port, or if you move the port to a different logical switch. The same configuration will be reapplied on the port once the feature is enabled or the port is moved back to the switch where you initially created and saved the configuration.

When issued for switch ports, the **--show** option displays the following information:

Port

> Port number

PPWNN

> Real PWWN of the device

VPWNN

> Currently active FA-PWWN.

The following information is displayed for Access Gateway ports:

AG Port

> Access Gateway node WWN followed by a slash and port number

Port

> The FC switch port number

Device Port WWN

> The real device port WWN displays only if the device is logged into the Access Gateway.

Virtual Port WWN

> The FA-PWWN (user-assigned or automatically assigned) created on the FC switch for the Access Gateway port.

The following information is displayed for both AG and FC switch ports:

PID

> Port ID.

Enable

> Displays "yes" if the configuration is enabled; displays "No" if the configuration is disabled.

MapType

> Displays the type of mapping: Access Gateway (AG) or switch port (port), user-assigned (user) or automatically assigned (auto).

Notes

This command is supported on the Gen 5 and Gen 6 platforms except the Brocade 7840 and the Brocade 7810 switches. The AG port must be configured on the switch to which the AG is connected. However, both AG switches are FA-PWWN-aware, which means that they can connect to switches with configured FA-PWWN ports. Refer to the Release Notes for other restrictions that may apply.

You cannot enable the FA-PWWN feature if **portSwap** is enabled on the ports.

The operands, **--assign**, **--delete**, **--enable**, and **--disable** can be executed only on a disabled port (switch ports and AG ports). You must re-enable the ports to come online with the new configuration.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

this command has the following operands:

--enable

> Enables the FA-PWWN feature on the specified switch ports or AG ports. If a FA-PWWN is not available for the ports, this command automatically assigns FA-PWWNs to the ports. The switch ports must be disabled using the **portDisable** command before executing this command.

--disable

> Disables the FA-PWWN feature on the specified switch ports or AG ports. This commands disables the binding of any existing FA-PWWNs to the specified ports, it does not delete the port configurations themselves. When you re-enable the feature, the persistently saved configurations are re-applied to the ports.

--assign

> Assigns a FA-PWWN to a specified port. You can specify only a single port with this command (not a port range) and optionally provide a VPWWN. The switch ports must be disabled using the portDisable command before executing this command. When executed without the **-v** option, this command automatically generates a FA-PWWN and assigns it to the port. When executed with the **-v** option, and a user-assigned FA-PWWN already exists, this command fails with an appropriate message. If an automatically assigned FA-PWWN exists, the user-generated FA-PWWN overrides the automatically generated FA-PWWN. When you assign a FA-PWWN to an AG port, you must specify the AG node WWN to uniquely identify the AG. The new FA-PWWN will take effect upon the next login session.

--delete

> Deletes the active FA-PWWN from the specified ports. If a port is bound to a user-assigned FA-PWWN, this command deletes the currently active FA-PWWN and acti-vates the automatically assigned FA-PWNN. If the active FA-PWWN is automatically assigned and no user-assigned FA-PWWN exists, this command deletes the FA-PWWN. When deleting VPWWNs from an AG, you must specify the AG node WWN and the **-port**

operand is optional; if omitted, all active FA-PWWNs are deleted from the AG. To delete a single FA-PWWN, use the delete command with the **-v** option.

If no active FA-PWWNs exist on the ports, the FA-PWWN feature is disabled. Use the **-enable** command to re-enable the feature.

--show

Displays the FA-PWWN configuration for the specified ports or for all ports in the logical switch. When displaying information for AG ports, you must specify the AG node WWN.

-port[*slot/*]*port*[*-port*]

Specifies the ports to be configured or displayed on the switch or on the AG, preceded by a slot number on bladed systems whose FA-PWWN configuration is to be displayed. The port list can include a single port or a port range, for example, 3-5 or 1/3-5. Port ranges are supported only with automatically assigned FA-PWWNs, and only on switch ports. You cannot use a port range on AG ports.

-ag *AG_WWN*

Specifies the Access Gateway node WWN.

-v *VPWWN*

Specifies a virtual PWWN to be assigned to the port. This operation deactivates any existing FA-PWWN on the port.

all

Specifies all ports on the logical switch. This operand is valid only with the **--show** option.

--move

Moves an active FA-PWWN from a source to the specified destination port. Use this command to move a server across switch ports. If the source port has both a user-assigned and an automatically assigned FA-PWWN, the user-assigned FA-PWWN will be moved to the destination port as a user-assigned FA-PWWN and replace any auto-matically assigned FA-PWWN that may be active on that port. If the source port has only an auto-assigned FA-PWWN, the auto-assigned FA-PWWN will be moved to the desti-nation port and the FA-PWWN feature will be disabled on the source port, because there is no FA-PWWN left on that port. When moving PWWNs between Access Gateways, you must specify the source AG node WWN and the destination AG node WWN in addition to the ports.

The following operands are supported with the **--move** option:

-srcag *AG_WWN*

Specifies the source AG by its node WWN. This operand is required only when moving ports between Access Gateways.

-dstag *AG_WWN*

> Specifies the destination AG by its node WWN. This operand is required only when moving ports between Access Gateways.

-srcport *source_port*

> Specifies the port from which to move the PWWN.

-dstport *dest_port*

> Specifies the destination port for the moved PWWN.

--help

> Displays the command usage.

Examples

To enable the FA-PWWN feature on a switch port:

```
switch:admin> portdisable 10
switch:admin> fapwwn --enable -port 10
```

To disable the FA-PWWN feature on the switch port:

```
switch:admin> fapwwn --disable -port 10
```

To move the active FA-PWWN from a source port to another port:

```
switch:admin> fapwwn --move -srcport 2 -dstport 3
```

To move the active FA-PWWN from a source AG port to a destination AG port:

```
switch:admin> fapwwn --move -srcag 11:11:11:11:11:11:11:11  \
     -srcport 12 -dstag  22:22:22:22:22:22:22:22 -dstport 14
```

To assign a user-assigned FA-PWWN to a switch port:

```
switch:admin> portdisable 1/10
switch:admin> fapwwn --assign -port 1/10 -v  50:60:70:71:72:73:81:81
```

To assign an automatically assigned FA-PWWN to a switch port:

```
switch:admin> portdisable 1/10
switch:admin> fapwwn --assign -port 1/10
```

To assign a fabric-assigned FA-PWWN to an AG port identified by the AG node WWNN and port number:

```
switch:admin> portdisable 0
switch:admin> fapwwn --assign -ag 12:34:56:78:90:12:23:45 -port 0
```

To assign an user-assigned FA-PWWN to an AG port:

```
switch:admin> portdisable 0
switch:admin> fapwwn --assign -ag 12:34:56:78:90:12:23:45 -port 0 \
   -v 11:22:33:44:55:66:77:88
```

To delete the active FA-PWWN of a switch port:

```
switch:admin> fapwwn --delete -port 10
```

To delete the active FA-PWWN of an AG port:

```
switch:admin> fapwwn --delete -ag 12:34:56:78:90:12:34:56 -port 10
```

To display the active FA-PWWN for a single FC port (the real device PWWN is hidden):

```
switch:admin> fapwwn --show -port 10
----------------------------------------------------------------------
--
 Port       PPWWN                      VPWWN           PID Enable MapType
----------------------------------------------------------------------
--
 10 --:--:--:--:--:--:--:-- 52:00:10:00:00:0f:50:45 -- Yes  Port/Auto
```

To display the active FA-PWWNs for all FC switch ports:

```
switch:admin> fapwwn --show -port all
----------------------------------------------------------------------
--
 Port       PPWWN                      VPWWN           PID Enable MapType
----------------------------------------------------------------------
--
 0 --:--:--:--:--:--:--:-- 52:00:10:00:00:0f:50:30 10101 Yes  Port/
Auto
 1 --:--:--:--:--:--:--:-- 11:22:33:44:33:22:11:22  --  Yes  Port/User
                          52:00:10:00:00:0f:50:44
10 --:--:--:--:--:--:--:-- 52:00:10:00:00:0f:50:45  -- Yes  Port/Auto
```

To display the active FA-PWWN of an AG port :

```
switch:admin> fapwwn --show -ag 10:00:00:05:1e:d7:3d:dc -port 8
----------------------------------------------------------
    AG Port               Port      Device Port WWN     \
----------------------------------------------------------
10:00:00:05:1e:d7:3d:dc/8  20   20:08:00:05:1e:d7:2b:74  \


----------------------------------------------------------
    Virtual Port WWN      PID   Enable  MapType
----------------------------------------------------------
 11:22:33:44:55:66:77:88  11403   Yes    AG/User
 52:00:10:00:00:0f:50:32
(output split)
```

To display the active FA-PWWNs of all configured AG ports:

```
switch:admin> fapwwn --show -ag all
----------------------------------------------------------
    AG Port               Port      Device Port WWN     \
----------------------------------------------------------
10:00:00:05:1e:65:8a:d5/16  --    --:--:--:--:--:--:--:--  \
10:00:00:05:1e:d7:3d:dc/8   20   20:08:00:05:1e:d7:2b:74  \
                                                          \
10:00:00:05:1e:d7:3d:dc/9   20   20:09:00:05:1e:d7:2b:73  \
10:00:00:05:1e:d7:3d:dc/16  --    --:--:--:--:--:--:--:--  \
----------------------------------------------------------
    Virtual Port WWN       PID   Enable  MapType
```

```
            -------------------------------------------------------------
 52:00:10:00:00:0f:50:30      --     Yes    AG/Auto
 11:22:33:44:55:66:77:88    11403    Yes    AG/User
 52:00:10:00:00:0f:50:32
 2:00:10:00:00:0f:50:33     11404    Yes    AG/Auto
 52:00:10:00:00:0f:50:38      --     Yes    AG/Auto
(output split)
```

To display the active FA-PWWNs of all ports associated with a single AG (in the following
example, one VPWWN is not unassigned):

```
switch:admin> fapwwn --show -ag 10:00:00:05:1e:d7:3d:dc
-------------------------------------------------------------
    AG Port                 Port      Device Port WWN       \
-------------------------------------------------------------
10:00:00:05:1e:d7:3d:dc/16  --     --:--:--:--:--:--:--:--  \
10:00:00:05:1e:d7:3d:dc/9   20     20:09:00:05:1e:d7:2b:73  \
10:00:00:05:1e:d7:3d:dc/8   20     20:08:00:05:1e:d7:2b:74  \
                                                            \

10:00:00:05:1e:d7:3d:dc/16  --     --:--:--:--:--:--:--:--  \
-------------------------------------------------------------
    Virtual Port WWN      PID    Enable  MapType
-------------------------------------------------------------
 52:00:10:00:00:0f:50:38      --     Yes    AG/Auto
 20:00:10:00:00:0f:50:33    11404    Yes    AG/Auto
 11:22:33:44:55:66:77:88    11403    Yes    AG/User
 52:00:10:00:00:0f:50:32
(output split)
```

See Also

None

fastBoot

Reboots the Control Processor (CP), bypassing the Power-On Self-Test (POST).

Synopsis

    fastboot

Description

Use this command to perform a "cold reboot" (power off/restart) of the CP bypassing POST when the system comes back up. Bypassing POST can reduce boot time significantly. If POST was previously disabled using the **diagDisablePost** command, then **fastBoot** is the same as **reBoot**.

The **fastBoot** operation is disruptive, and the command prompts for confirmation before executing. When you reboot a switch connected to a fabric, all traffic to and from that switch stops. All Fibre Channel ports on that switch including E_Ports become inactive until the switch comes back online.

The behavior of this command varies according to platform type:

- When issued on a standalone (single-processor) switch, this command performs a cold reboot of the switch.

- When issued on an enterprise-class platform (Brocade DCX, DCX-4S, or 48000) with two CPs (active and standby), the following rules apply:
  – When the Standby CP reboots, it goes down and there is no failover because there is no traffic on that switch. When the Standby CP comes up again, it is temporarily no longer in sync with the Active CP.

  – When the Active CP reboots, it fails over to the Standby CP. The Standby CP becomes the new Active CP and traffic is disrupted.

  – When HA is disabled and **fastBoot** is issued on the Active CP, both the Active and Standby CPs reboot with the original mastership retained. The original Active CP remains the Active CP after the reboot, and the original Standby CP remains the Standby CP. After the reboot, HA is enabled.

  – When HA is disabled and **fastBoot** is issued on the Standby CP, the Standby CP reboots without prompting. It boots up with the default switch only, even if the Active CP has multiple logical switches configured. After the Standby CP boots up, HA is still disabled.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To reboot a standalone (single-processor) switch without executing POST on startup:

```
switch:admin> fastboot

Warning: This command would cause the switch to reboot
and result in traffic disruption.
Are you sure you want to reboot the switch [y/n]? y

Broadcast message from root (pts/0) Sun Feb 28 19:49:45 2010...

The system is going down for reboot NOW !!
```

To reboot a DCX without executing POST on startup (in the example, HA is enabled):

```
switch:admin> fastboot
Warning: This command is being run on a control processor (CP)
based system and will cause the active CP to reboot.
Are you sure you want to reboot the active CP [y/n]? y

Broadcast message from root (pts/0) Sun Feb 28 19:49:45 2010...

The system is going down for reboot NOW !!
```

To reboot a DCX without executing POST on startup (in the example, HA is disabled):

```
switch:admin> fastboot
This command is being run on a control processor (CP)
based system. Because HA is disabled, it will cause both
active CP and the standby CP to reboot. After reboot, the
HA will be enabled.

Do you want to continue [y/n] y

Broadcast message from root (pts/0) Sun Feb 28 19:49:45 2010...

The system is going down for reboot NOW !!
```

See Also

diagDisablePost, diagEnablePost, reboot, haDisable, haEnable, haFailover

fcipHelp

Displays FCIP command information.

Synopsis

fciphelp

Description

Use this command to display a listing of Fibre Channel over IP (FCIP) commands with short descriptions for each command. FCIP commands require an FCIP license.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To display FCIP command help information:

```
switch:admin> fciphelp
bladecfggemode          Configure 1GigE/10GigE port configuration
for blade
extncfg                 Configure blade/switch extension product
features
fciphelp                Print FCIP help info
licenseslotcfg          Configure licenses on a slot basis
portcfg                Create/Delete a new ip interface/route/arp
entry on
                        the GigE port
portcfgge               Configure GigE port features
portcmd                Execute commands (ping etc) on the GigE port
portshow                Show configured ip interfaces/routes/arp
entries on
                        the GigE Port
```

See Also

portCfg, portCmd, portShow

fcipLedTest

Exercises the GbE port LEDS on the Brocade 7840, 7810, FX8-24, and SX6 extension blade.

Synopsis

fcipledtest [**--slot** *slot* | **all**]

Description

Use this command to exercise the GbE port LEDs on the Brocade 7840, 7810, FX8-24, and SX6 extension blade. The behavior of this command varies according to platform:

- On Brocade FX8-24, this test cycles through the port LEDs by lighting GREEN and then flashing GREEN on all ports for 3 seconds. As the test continues the ports turn AMBER and then flashing AMBER for 3 seconds. The LEDs turn off when the test has finished.

- On Brocade 7840 and 7810, this test cycles all the port LEDs by lighting GREEN on all ports for 3 seconds and lighting AMBER on all ports for 3 seconds. The switch will reboot once the test is complete.

- On Brocade SX6, this test cycles all the port LEDs by lighting GREEN on all ports for 3 seconds. As the test continues the ports turn AMBER for 3 seconds. The LEDs turn off when the test has finished. The blade will reboot once the test is complete.

This diagnostic cannot be run on an operational switch. You must disable the switch using the **chassisDisable** command before you can run this test. After the command completes, the ATTN LEDs flash amber, indicating that the command has finished and exited. Enable the switch using the **chassisEnable** command to set the ATTN LEDs back to black.

Notes

You cannot run **fcipLedTest** on a specific slot by disabling the blade in the slot using the **bladeDisable** command.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--slot *slot*

   Tests all GbE ports in the specified slot. This operand is optional. This operand is valid only on chassis-based platforms.

all

   Tests all GbE ports in the chassis. This operand is optional. This operand is valid only on chassis-based platforms.

Examples

To test the LEDs on slot 4 of Brocade DCX 8510 with an FX8-24 blade.

```
switch:admin> fcipledtest --slot 4
PASSED.
```

See Also

bladeDisable, bladeEnable, chassisDisable, chassisEnable, extnCfg, portLedTest

fcipPathTest

Tests the data path of the FCIP complex.

Synopsis

```
fcippathtest
      [--slot slot]
      [-lb_mode mode]
      [-nframes count]
```

Description

Use this command to verify the data paths in the FCIP complex. All data path modes run tests by comparing Fibre Channel frames or data packets transmitted from and received by the network processor due to the designated loopback.

This command is supported only on the Brocade 7840, 7810, FX8-24, and SX6 platforms.

Executing this command causes the switch or blade to reboot.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--slot *slot*

> Specifies the slot number on which the diagnostic operates. The default is 0 and operates on fixed-port-count products.

-lb_mode *mode*

> Specifies the loopback mode for the test. By default, this test uses the External (SERDES) loopback mode 2 which is the only loopback mode supported on Brocade 7840, 7810, and SX6 platforms. Other valid values in addition to mode 2 for FX8-24 platforms are as follows:

1

> Port loopback (requires loopback plugs)

2

> External (SERDES) loopback

5

Internal (parallel) loopback

7

Backend bypass and port loopback (requires loopback plugs)

8

Backend bypass and SERDES loopback

-nframes *count*

Specifies the number of frames to send. The test will progress until the specified number of frames has been transmitted on each port. The default value is 4 for Brocade 7840, Brocade 7810, and Brocade SX6.

Diagnostics

When it detects failures, the test may report one or more of the following error messages:

PATH_TEST_ERR

PATH_TEST_CHIP_INIT_ERR

PATH_TEST_IMAGE_ERR

PATH_TEST_TIMEOUT_ERR

PATH_TEST_HEARTBEAT_ERR

PATH_TEST_INVALID_RESULT

PATH_TEST_GE_PORT_ENABLE_ERR

PATH_TEST_GE_PORT_DISABLE_ERR

Examples

To run the test on slot 2:

```
switch:admin> fcippathtest --slot 2
Running fcippathtest ..............
Test Complete: fcippathtest Pass 10 of 10
Duration 0 hr, 1 min & 50 sec (0:1:50:942).
 passed.
```

See Also

bladeDisable, bladeEnable, chassisDisable, chassisEnable

fcoe

Configures and displays various parameters of the Fibre Channel over Ethernet (FCoE) feature supported only in Brocade FC32-64 Port Blade.

Synopsis

```
fcoe --config [-enodes num_enodes] [-fka fka_interval]
     [-priority priority] [-fcmap fcmap_value]
     [-katimeout [on | off]] [-vlan vlan_number]
fcoe --enable [-port [[slot]/port | port_range]]
     [-portchannel po_name] [ucs]
fcoe --disable [-port [port_number | slot/port]]
     [-portchannel po_name]
fcoe --show [-fabric | -login [brief | port [slot/port
     | portchannel po_name]] | -provision | -fcf
     | -portchannel po_name | -stats [port [slot/port]
     | portchannel po_name ]]
fcoe --default
fcoe --clear [-stats| -login] [port port_num
     | portchannel po_name] [wwn wwn_name]
fcoe --help
```

Description

Use this command to configure FCoE parameters, FCoE enodes, enable or disable FCoE on Ethernet ports or portchannels, view the FCoE configuration and device login information, view or clear the FCoE statistics on an Ethernet port or portchannel. This **--help** option of this command displays the usage. Use the **--show** option to display the current settings on the switch.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--config

Configures FCoE parameters.

-enodes *num_enodes*

Creates the FCoE Virtual F_Ports (VF_Port) that will dynamically bind with the ENode during the device login process. Valid range is from 0 through 1600. By default, zero ENodes are created.

-fka *fka_interval*

> Configures the FIP keep alive (FKA) time interval. The value range is from 250 through 90000 ms. The default *fka_interval* is 8000 ms.

-priority *priority*

> Configures the FCoE priority. Valid range is from 1 through 6; where the default is 3.

-fcmap *fcmap_value*

> Configures the FCoE FC-MAP. Valid range is from 0x0efc00 through 0x0efcff; where 0x0efc00 is the default value.

-katimeout [on | off]

> Sets the Keep Alive Timeout on or off. The default value is **on**.

-vlan *vlan_number*

> Configures the FCoE VLAN. The valid range is from 2 through 4093; where the default value is 1002.

--enable | --disable

> Enables or disables FCoE provisioning.

-port *slot/port*

> Enables or disables the FCoE provisioning on the port or port range.

-portchannel *po_name*

> Enables or disables the FCoE provisioning on the portchannel.

ucs

> Enables UCS mode on the port or portchannel. Enabling UCS mode disables VN_Port Keep Alives for the devices logging in on this port. This option must be used for Cisco UCS deployments and is supported only with **--enable** operand.

--show

> Displays all the FCoE configuration parameters, FCoE device login, FCoE statistics, etc.

-fabric

> Displays FCoE fabric wide parameters such as VLAN, FCoE priority, FC-MAP, FKA interval and Keep Alive timeout.

-login

> Displays FCoE device login information.

brief

>   Displays a brief information of the devices logged in.

port *slot/port*

>   Displays the login information for all the devices logged in through the specified physical port.

portchannel *po_name*

>   Displays the login information for all the devices logged in through the specified port-channel.

-provision

>   Displays information about the FCoE provisioned ports and portchannels.

-portchannel

>   Displays information about all the FCoE provisioned portchannels.

-fcf

>   Displays the FCoE Forwarder(FCF) domain-specific parameters such as Number of Enodes configured and the various FCF MACs.

-stats

>   Displays the FCoE protocol statistics. If no option is provided, displays statistics for all the FCoE-provisioned Ethernet ports and portchannels, else displays statistics for the requested Ethernet ports or portchannels.

--default

>   Configures the system to the default FCoE configuration state.

--clear

>   Clears the FCoE protocol statistics for all the ports or for the specified port or portchannel. The **-login** option clears the login on all the FCoE interfaces or on the particular port or portchannel or for the specified device WWN. The **wwn** option is not supported under **-stats** option.

--help

>   Displays the command usage.

Examples

>   To display FCoE global configuration parameters:
>
>   ```
>   switch:admin> fcoe --show -fabric
>   ```

```
===========================================================
VLAN      VFID      Pri     FCMAP       FKA       Timeout
===========================================================
1002[D]   128[D]    3[D]    0xefc00[D]  8000[D]   Enabled[D]
```

To edit part of the fabric-map parameters use one of the **fcoe --config** commands:

```
switch:admin> fcoe --config -enode 10
switch:admin> fcoe --config -vlan 1003
switch:admin> fcoe --config -priority 4
switch:admin> fcoe --config -fcmap 0x0efc01
switch:admin> fcoe --config -katimeout on
switch:admin> fcoe --config -fka 6000
switch:admin> fcoe --config -enodes 5
```

To enable FCoE on the physical Ethernet port or a port range:

```
switch:admin> fcoe --enable -port 2/3-4
```

To enable FCoE on the physical Ethernet port with UCS mode:

```
switch:admin> fcoe --enable -port 2/8 ucs
Enabling UCS mode will disable VNPort Keep Alives for the devices
logging in on this port
Would you like to continue [y/n]?: y
```

To enable FCoE on a portchannel with UCS mode:

```
switch:admin> fcoe --enable -portchannel portch_1 ucs
Enabling UCS mode will disable VNPort KA on the port
Would you like to continue [y/n]?: y
2017/10/11-11:39:39, [NSM-1010], 365, FID 128, INFO, sw0,
InterfaceMode changed from None to L2 for interface abc.
```

To disable FCoE on the physical Ethernet port or a port range:

```
switch:admin> fcoe --disable -port 2/3-4
```

To enable FCoE configuration on LAG:

```
switch:admin> fcoe --enable -portchannel port_ch_1
```

To disable FCoE configuration on LAG:

```
switch:admin> fcoe --disable -portchannel port_ch_1
```

To display the FCoE device login details:

```
switch:admin> fcoe --show -login
=======================================================================
====================
FCOE VF-Port Eth-port/LAG     Device WWN              Device MAC
Session MAC
=======================================================================
====================
1800          8/4       10:00:00:05:1e:8f:fb:43  00:05:1e:8f:fb:43
0e:fc:00:01:90:c0
```

```
1800            8/4        10:00:00:05:1e:8f:f9:00  00:05:1e:8f:fb:43
0e:fc:00:01:90:c1
1800            8/4        10:00:00:05:1e:8f:f9:01  00:05:1e:8f:fb:43
0e:fc:00:01:90:c2
1800            8/4        10:00:00:05:1e:8f:f9:02  00:05:1e:8f:fb:43
0e:fc:00:01:90:c3
1800            8/4        10:00:00:05:1e:8f:f9:03  00:05:1e:8f:fb:43
0e:fc:00:01:90:c4

switch:admin> fcoe --show -login brief
==================================================
FCOE VF-Port        Eth-port/LAG      #VN-Ports
==================================================
1800                8/4               3

Total number of Port(s) = 1

switch:admin> fcoe --show -login port 8/4
======================================================================
==================
FCOE VF-Port Eth-port/LAG    Device WWN               Device MAC
Session MAC
======================================================================
==================
1800            8/4        10:00:00:05:1e:8f:fd:02  00:05:1e:8f:fd:02
0e:fc:00:01:90:40
1800            8/4        10:00:00:05:1e:8f:fd:00  00:05:1e:8f:fd:02
0e:fc:00:01:90:41
1800            8/4        10:00:00:05:1e:8f:fd:10  00:05:1e:8f:fd:02
0e:fc:00:01:90:42

Total number of Login(s) = 3

switch:admin> fcoe --show -login portchannel portch_1
======================================================================
=============
FCOE VF-Port   Eth-port/LAG   Device WWN               Device MAC
Session MAC
======================================================================
=============
777            portch_1 20:01:00:11:0d:f2:08:00  00:05:1e:78:f2:08
0e:fc:01:01:07:01

Total number of Login(s) = 1
```

To display the ports or portchannels that are provisioned for FCoE:

```
switch:admin> fcoe --show -provision
==================================================
Domain        Port(s)/Portchannel(s)      Mode
==================================================
1             8/0                         UCS
1             8/4
```

```
1               8/27
1               abc                             UCS
1               portch_1

Total number of port(s) = 5
```

To display details of the portchannels provisioned for FCoE:

```
switch:admin> fcoe --show -portchannel
LACP Aggregator: port_channel1
 Member ports: 1
 Link: 3/0

Total number of Portchannel(s) = 1
```

To display details of the local FCF switch including domain-id, FCF MAC addresses, etc.:

```
switch:admin> fcoe --show -fcf
Domain-id : 1
Number of Enodes : 6
Global FCF Mac
==============
      c4:f5:7c:00:a8:62
Per Port FCF Mac
================
      16:  c4:f5:7c:00:a8:12
      17:  c4:f5:7c:00:a8:13
      20:  c4:f5:7c:00:a8:16
      21:  c4:f5:7c:00:a8:17
      24:  c4:f5:7c:00:a8:1a
      25:  c4:f5:7c:00:a8:1b
      28:  c4:f5:7c:00:a8:1e
      29:  c4:f5:7c:00:a8:1f
```

To display the stats for all the Ethernet ports and FCoE provisioned portchannels:

```
switch:admin> fcoe --show -stats
Port: 1/8
----------------------------------------------------------
RX Statistics:
Num of FIP VLAN Discovery Requests  : 1
Num of FIP Discovery Solicitations  : 1
Num of FIP FLOGIs                   : 1
Num of FIP NPIV FDISCs              : 0
Num of FIP LOGOs                    : 0
Num of FIP Enode Keep Alives        : 1207
Num of FIP VN Port Keep Alives      : 107
Errors                              : 0
TX Statistics:
Num of FIP VLAN Discovery Responses : 1
Num of FIP Discovery SA             : 1
Num of FIP Discovery UA             : 0
Num of FLOGI ACCs                   : 1
Num of FDISC ACCs                   : 0
```

```
Num of LS_RJT (FLOGI, FDISC, LOGO)  : 0
Num of CVLs                         : 0
Errors                              : 0

Port: 2/8
-----------------------------------------------------------
RX Statistics:
Num of FIP VLAN Discovery Requests  : 1
Num of FIP Discovery Solicitations  : 1
Num of FIP FLOGIs                   : 1
Num of FIP NPIV FDISCs              : 0
Num of FIP LOGOs                    : 0
Num of FIP Enode Keep Alives        : 1209
Num of FIP VN Port Keep Alives      : 107
Errors                              : 0
TX Statistics:
Num of FIP VLAN Discovery Responses : 1
Num of FIP Discovery SA             : 1
Num of FIP Discovery UA             : 0
Num of FLOGI ACCs                   : 1
Num of FDISC ACCs                   : 0
Num of LS_RJT (FLOGI, FDISC, LOGO)  : 0
Num of CVLs                         : 0
Errors                              : 0
Total number of Ports = 2
```

To display the FCoE statistics for a specified Ethernet port:

```
switch:admin> fcoe --show -stats 1/8
Port: 1/8
-----------------------------------------------------------
RX Statistics:
Num of FIP VLAN Discovery Requests  : 1
Num of FIP Discovery Solicitations  : 1
Num of FIP FLOGIs                   : 1
Num of FIP NPIV FDISCs              : 0
Num of FIP LOGOs                    : 0
Num of FIP Enode Keep Alives        : 1207
Num of FIP VN Port Keep Alives      : 107
Errors                              : 0
TX Statistics:
Num of FIP VLAN Discovery Responses : 1
Num of FIP Discovery SA             : 1
Num of FIP Discovery UA             : 0
Num of FLOGI ACCs                   : 1
Num of FDISC ACCs                   : 0
Num of LS_RJT (FLOGI, FDISC, LOGO)  : 0
Num of CVLs                         : 0
Errors                              : 0
Total number of Ports = 1
```

To change the system to default FCoE configuration state:

```
switch:admin> fcoe --default
```

To clear the FCoE statistics on the specified port:

```
switch:admin> fcoe --clear -stats port 1/7
```

To clear the FCoE statistics on the specified portchannel:

```
switch:admin> fcoe --clear -stats portchannel portch_1
```

To clear the FCoE device logged in on the specified port:

```
switch:admin> fcoe --clear -login port 1/21
```

To clear the FCoE device logged in on the specified portchannel:

```
switch:admin> fcoe --clear -login portchannel portch_1
```

To clear the FCoE device logged in with the specified wwn:

```
switch:admin> fcoe --clear -login wwn 10:00:00:05:1e:8f:fb:43
```

See Also

portChannel, lldp, portCfgFlexport

fcoeLoginCfg

This command is no longer supported as of Fabric OS v8.0.1.

See Also

None

fcoeLoginGroup

This command is no longer supported as of Fabric OS v8.0.1.

See Also

None

fcPing

Sends a Fibre Channel Extended Link Service (ELS) Echo request to a pair of ports or to a single destination, or executes a SuperPing.

Synopsis

```
fcping
      [--number frames]
      [--length size]
      [--interval wait]
      [--pattern pattern]
      [--bypasszone]
      [--quiet]
      [source] destination
fcping --allpaths
      [-printisl]
      [-maxtries M]
      [-covcount N]
      [-delay D]
      [-framelength len]
      [-errstats]
      [-vc]
      destination
fcping --help
```

Description

Use this command to send a Fibre Channel ELS Echo request to a pair of ports (a source and a destination), to a single device, or to execute a SuperPing that exercises all interswitch links (ISLs) and internal links in different paths that route to the destination device.

- When you use **fcPing** with a source and a destination, the command performs a zoning check between the two ports. In addition, two Fibre Channel ELS requests are generated. The first ELS request is from the domain controller to the source port identifier. The second ELS request is from the domain controller to the destination port identifier. The ELS Echo request elicits an ELS Echo response from a port identifier in the fabric and is useful for validating link connectivity.
  The source and destination port identifiers can be specified as a 24-bit Fibre Channel port identifier (PISD), a port World Wide Name, or a node World Wide Name. The two port identifiers are then used to determine if the identifiers are zoned together.

- When you use **fcPing** to probe a single destination, an ELS Echo is sent to the specified destination and a response obtained. The destination can be a switch WWN, a domain ID, or a switch domain controller ID. No zoning check is performed when a single device is probed.

- When you use **fcPing** with the **--allpaths** option, the command exercises a "SuperPing." A SuperPing exercises all ISLs and the internal links included in the least-cost paths that route to the destination. It collects statistical data of all the covered paths and their port and provides optional parameters to selectively display the data. SuperPing takes only

one argument, the destination port identifier. To execute a SuperPing for two destinations, you must issue the **fcping --allpaths**command separately for each destination. SuperPing facilitates troubleshooting of links that experience problems. When an echo frame is dropped, all the ISLs and internal links potentially traversed by this frame are marked as failures. If a fabric topology is considered fully redundant, that is, at each hop there are multiple paths to reach a destination, a high percentage of errors are recorded on the link that experiences errors.

Logical Fabrics: When executed in a Logical Fabric from a switch to a destination device connected through the base fabric, SuperPing exercises all paths in the base fabric along with the ISLs in the logical fabric. The path output indicates the LISLs and the base switch. Refer to the Examples section for an illustration.

Notes

The ELS Echo may not be supported on all devices. In such cases, the response could be either an ELS reject or a request timeout.

By default, **fcPing** sends five ELS Echo requests to each port. When a device does not respond to the ELS Echo request, further debugging may be needed to determine, whether the device does not support ELS Echo, or whether the request is rejected for some other reason. Do not assume that the device is not connected.

If a fabric reconfiguration occurs while SuperPing is in progress, the command reports an error message. Exit the command and rerun the test after the fabric becomes stable again.

SuperPing and the **fcPing** command are not supported for the simulated devices that exist on SIM ports. Use the **flow** command to enable the SIM ports.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

destination

Specifies the destination as follows.

- When using **fcPing** between a source and a destination, specify the destination as port WWN or a node WWN.

- When using **fcPing** to ping a single device, specify the destination as a PID, a switch WWN, a domain ID, or a switch domain controller ID.

- When using **fcPing** with the **--allpaths** option, specify the destination as a PID, a switch WWN, or a domain ID.

source

Specifies the source port ID, port WWN, or node WWN. This operand is optional; it is not valid with the SuperPing command (**--allpaths**).

The following operands are valid only when **fcPing** is executed without the **--allpaths** option (legacy mode):

--number *frames*

>   Specifies the number of ELS Echo requests to send. The default value is 5.

--length *size*

>   Specifies the frame size of the requests in bytes. The default value is 0. Without data, the
>   Fibre Channel Echo request frame size is 12 bytes. The total byte count includes four
>   bytes from the Echo request header and eight bytes from the timestamp. The maximum
>   allowed value is 2,036 bytes. The length must be word-aligned.

--interval *wait*

>   Specifies the interval, in seconds, between successive ELS Echo requests. The default
>   value is 0 seconds.

--pattern *pattern*

>   Specifies up to 16 "pad" bytes, which are used to fill out the request frame payload sent.
>   This is useful for diagnosing data-dependent problems in the fabric link. The pattern
>   bytes are specified as hexadecimal characters. For example, **--pattern ff** fills the request
>   frame with instances of the number 1. If a non-byte-aligned pattern is specified, the upper
>   nibble of the last pattern byte is filled with zeros. For example, **--pattern 123** fills the
>   payload with a pattern of 0x1203.

--bypasszone

>   Bypasses the zone check.

--quiet

>   Suppresses the diagnostic output. Only zoning information, if applicable, and the
>   summary line are displayed.

The following operands are valid only when **fcPing** is executed to perform a SuperPing:

--allpaths [*args***]** *destination*

>   Executes a SuperPing that covers all available least-cost paths to the specified destina-
>   tion. The number of actual paths covered depends on two other parameters that you can
>   optionally specify. When you issue **fcping --allpaths** for a destination without any other
>   options, SuperPing covers all ISLs in the routes between source to destination but does
>   exercise all possible combinations of end-to-end paths. This operand is required when
>   executing **fcPing** as SuperPing.

>   The following operands are optional and valid only with the **--allpaths** option:

-printisl

>   Displays statistical data for each ISL and internal port along the paths traversed by
>   SuperPing. This information displays in addition to the path display.

-covcount *N*

> Specifies the minimum number of times each ISL is exercised by the SuperPing command. The command sends *N* frames and checks if each ISL is exercised at least *N* times. When the condition is met, superPing exits and prints the statistics. The default value is 5.

-maxtries *M*

> Specifies the maximum number of frames to be sent before SuperPing exits. If both **-maxtries** and **-covcount** are specified, SuperPing checks the ISL coverage and keeps resending frames until the minimum coverage condition to is met or until the maximum number of echo frames specified in **maxtries** has been sent. For example, assuming a coverage count of 100 and a **Maxtries** value of 300, SuperPing will send 100 frames at a time and checks if each ISL is covered at least 100 times. If not, SuperPing will keep sending 100 frames at a time to check for coverage up to 3 times for a maximum of 300 frames (3*100 = 300) on each egress port. If this value is set too low in relation to the specified coverage count, not all ISLs may be covered. The default value is 100.

-delay *D*

> Includes a delay of *D* milliseconds between each echo frame sent.

-framelength *len*

> Specifies the size of the data to send.

-errstats

> Collects error statistics of each user port that is part of ISLs covered through SuperPing to reach destination domain.

-vc

> Displays the ISL and internal port statistics per VC.

--help

> Displays the command usage.

Examples

> To display one device that accepts the request and another device that rejects the request:

```
switch:admin> fcping 10:00:00:00:c9:29:0e:c4 21:00:00:20:37:25:ad:05
Source:         10:00:00:00:c9:29:0e:c4
Destination:    21:00:00:20:37:25:ad:05
Zone Check:     Not Zoned

Pinging 10:00:00:00:c9:29:0e:c4 [0x20800] with 12 bytes of data:
received reply from 10:00:00:00:c9:29:0e:c4: 12 bytes time:1162 usec
received reply from 10:00:00:00:c9:29:0e:c4: 12 bytes time:1013 usec
received reply from 10:00:00:00:c9:29:0e:c4: 12 bytes time:1442 usec
```

```
received reply from 10:00:00:00:c9:29:0e:c4: 12 bytes time:1052 usec
received reply from 10:00:00:00:c9:29:0e:c4: 12 bytes time:1012 usec
5 frames sent, 5 frames received, 0 frames rejected, 0 frames timeout
Round-trip min/avg/max = 1012/1136/1442 usec

Pinging 21:00:00:20:37:25:ad:05 [0x211e8] with 12 bytes of data:
Request rejected
Request rejected
Request rejected
Request rejected
Request rejected
5 frames sent, 0 frames received, 5 frames rejected, 0 frames timeout
Round-trip min/avg/max = 0/0/0 usec
```

To display one device that accepts the request and another device that does not respond to the
request:

```
switch:admin> fcping 0x020800 22:00:00:04:cf:75:63:85
Source:         0x020800
Destination:    22:00:00:04:cf:75:63:85
Zone Check:     Zoned

Pinging 0x020800 with 12 bytes of data:
received reply from 0x020800: 12 bytes time:1159 usec
received reply from 0x020800: 12 bytes time:1006 usec
received reply from 0x020800: 12 bytes time:1008 usec
received reply from 0x020800: 12 bytes time:1038 usec
received reply from 0x020800: 12 bytes time:1010 usec
5 frames sent, 5 frames received, 0 frames rejected,0 frames timeout
Round-trip min/avg/max = 1006/1044/1159 usec

Pinging 22:00:00:04:cf:75:63:85 [0x0217d9] with 12 bytes of data:
Request timed out
Request timed out
Request timed out
Request timed out
Request timed out
5 frames sent, 0 frames received, 0 frames rejected,5 frames timeout
Round-trip min/avg/max = 0/0/0 usec
```

To use **fcping** with a single destination:

```
switch:admin> fcping 20:03:00:05:33:7e:97:e9
Pinging 20:03:00:05:33:7e:97:e9 [0x022300] with 12 bytes of data:
Request rejected
 Request rejected by 0x022300: Command not supported: time: 1159 usec
 Request rejected by 0x022300: Command not supported: time: 1006 usec
 Request rejected by 0x022300: Command not supported: time: 1008 usec
 Request rejected by 0x022300: Command not supported: time: 1038 usec
 Request rejected by 0x022300: Command not supported: time: 1010 usec
 5 frames sent, 0 frames received, 5 frames rejected, 0 frames timeout
        Round-trip min/avg/max = 1006/1044/1159 usec
```

To use **fcPing** with a single destination (in the example, the destination is a switch WWN):

```
switch:admin> fabricshow
Switch ID   Worldwide Name      Enet IP Addr    FC IP Addr  Name
----------------------------------------------------------------
6: fffc06 10:00:00:05:1e:34:2b:66 10.202.90.201 0.0.0.0 "mps_daz_1"
55:fffc37 10:00:00:05:1e:34:01:f5 10.202.90.226 0.0.0.0  pulsar055"

switch:admin> fcping 10:00:00:05:1e:34:2b:66
Destination:    10:00:00:05:1e:34:2b:66

Pinging 20:00:00:05:1e:34:2b:66 [fffc06] with 12 bytes of data:
received reply from 10:00:00:05:1e:34:2b:66 : 12 bytes time:1162 usec
received reply from 10:00:00:05:1e:34:2b:66 : 12 bytes time:1013 usec
received reply from 10:00:00:05:1e:34:2b:66 : 12 bytes time:1442 usec
received reply from 10:00:00:05:1e:34:2b:66 : 12 bytes time:1052 usec
received reply from 10:00:00:05:1e:34:2b:66 : 12 bytes time:1012 usec
5 frames sent, 5 frames received, 0 frames rejected, 0 frames timeout
Round-trip min/avg/max = 1012/1136/1442 usec
```

To use **fcPing** with a single destination (in the example, the destination is a device node WWN):

```
switch:admin> nsshow
{
 Type Pid    COS      PortName           NodeName          TTL(sec)
 N  370500;3;20:07:00:05:1e:35:10:7f;10:00:00:05:1e:35:10:7f; na
    Fabric Port Name: 20:05:00:05:1e:34:01:f5
    Permanent Port Name: 20:07:00:05:1e:35:10:7f
    Port Index: 5
    Share Area: No
    Redirect: No
    Partial: NO
 N  370501; 3;10:00:00:00:c9:3f:7c:b8;20:00:00:00:c9:3f:7c:b8; na
    FC4s: FCP
    NodeSymb: [44] "Emulex LP1050 FV1.81A1 DV5-5.20A9 DELL1750-3"
    Fabric Port Name: 20:05:00:05:1e:34:01:f5
    Permanent Port Name: 20:07:00:05:1e:35:10:7f
    Port Index: 5
    Share Area: No
    Redirect: No
    Partial: NO
The Local Name Server has 2 entries }

switch:admin> fcping 20:00:00:00:c9:3f:7c:b8
Destination:    20:00:00:00:c9:3f:7c:b8

Pinging 20:00:00:00:c9:3f:7c:b8 [0x370501] with 12 bytes of data:
received reply from 20:00:00:00:c9:3f:7c:b8:12 bytes time:825 usec
received reply from 20:00:00:00:c9:3f:7c:b8:12 bytes time:713 usec
received reply from 20:00:00:00:c9:3f:7c:b8:12 bytes time:714 usec
received reply from 20:00:00:00:c9:3f:7c:b8:12 bytes time:741 usec
received reply from 20:00:00:00:c9:3f:7c:b8:12 bytes time:880 usec
5 frames sent,5 frames received,0 frames rejected,0 frames timeout
Round-trip min/avg/max = 713/774/880 usec
```

To execute a SuperPing testing all ISLs to a specified destination (in the example, two paths are tested, and each hop is displayed in Domain/Index format):

```
switch:admin> fcping --allpaths 165

Pinging(size:12 bytes) destination domain 165 through all paths

PATH SWITCH1-->      SWITCH2-->              SWITCH3-->      \
----------------------------------------------------------------
1.(3/EMB,3/205)[128] (207/25,207/42)[128] (101/3,101/16)[128]\

2.(3/EMB,3/204)[128] (207/27,207/42)[128] (101/3,101/16)[128]\

 SWITCH4              STATUS
---------------------------
(165/99,165/0)[128]  SUCCESS

2(165/99,165/0)[128] SUCCESS
```

To execute a SuperPing in a logical fabric (in the example, domains 10 and 40 in FID 1 are connected through the base fabric (FID 2)):

```
switch:admin: fcping --allpaths 40
Pinging(size:12 bytes) destination domain 30 through all paths

PATH SWITCH1-->  SWITCH2-->
----------------------------------------------------------
1.(10/EMB,10/4)[128] (20/5,20/EMB )[128] (1/EMB, 1/6)[2] \
Successfully completed superping for all paths

SWITCH3-->                              SWITCH4          STATUS
----------------------------------------------------------
(2/7,2/EMB)[2] (30/EMB,30/8)[128] (40/9, 40/EMB)[128] SUCCESS
Successfully completed superping for all paths
```

To execute a SuperPing and print statistical coverage of each ISL and internal port along the potential paths (in the example, a few errors are recorded on the ISLs 3/205->2/25, 3/204->2/27, 2/42->101/3, and 2/1->101/8, but the internal port analysis shows that errors are recorded on the internal port 0/284 in domain 2, which is the potential faulty link):

```
switch:admin> fcping --allpaths -printisl 101
Pinging(size:12 bytes) destination domain 101 through all paths

PATH      SWITCH1-->              SWITCH2-->              \
--------------------------------------------------
1.   ( 3/EMB, 3/123)[128] (165/96 ,165/99 )[128] \
2.   ( 3/EMB, 3/205)[128] ( 2/25 , 2/1 )[128]     \
3.   ( 3/EMB, 3/205)[128] ( 2/25 , 2/42 )[128]   \
4.   ( 3/EMB, 3/204)[128] ( 2/27 , 2/42 )[128]   \
5.   ( 3/EMB, 3/204)[128] ( 2/27 , 2/1  )[128]   \

SWITCH3                 STATUS
-------------------------------
(101/16 ,101/EMB)[128]   SUCCESS
(101/8 ,101/EMB)[128]    FAILED
```

```
(101/3 ,101/EMB)[128]     FAILED
4(101/3 ,101/EMB)[128]     FAILED
 101/8 ,101/EMB)[128]     FAILED


Completed superping for all paths. Error found in few paths

ISL COVERAGE
-------------
SNO          ISL                          STATUS
----------------------------------------------------
1     ( 3/123[128]-->165/96[128] )      SUCCESS(5/5)
2     ( 3/205[128]--> 2/25[128] )       FAILURE(7/50)
3     ( 3/204[128]--> 2/27[128] )       FAILURE(11/50)
4     (165/99[128] -->101/16[128] )     SUCCESS(5/5)
6     ( 2/42[128] -->101/3[128]  )      FAILURE(10/67)
7     ( 2/1[128]  -->101/8[128]  )      FAILURE(8/33)


INTERNAL PORT COVERAGE
----------------------

SNO     DOMAIN  INTRNL_PORT     STATUS
----------------------------------------------
1       2       0/272     SUCCESS(40/40)
2       2       0/276     SUCCESS(44/44)
3       2       0/280     SUCCESS(30/30)
4       2       0/284     FAILURE(20/20)
```

To execute a SuperPing with a coverage count of 1000 and a **maxtries** value of 5000 (in the example, the ISL (3/204->204/27), could not be covered 1000 times):

```
switch:admin> fcping --allpaths -covcount 1000  \
   -maxtries 5000 -printisl 165


Pinging(size:12 bytes) destination domain 165 through all paths
|
PATH SWITCH1--> SWITCH2-->     SWITCH3-->     \
------------------------------------------------------------
1.(3/EMB,3/205)[128] (207/25,207/42)[128] (101/3,101/16)[128]\

2.(3/EMB,3/204)[128] (207/27,207/42)[128] (101/3,101/16)[128]\

SWITCH4            STATUS
--------------------------
(165/99,165/0)[128] SUCCESS

(165/99,165/0)[128] SUCCESS

Successfully completed superping for all paths

ISL COVERAGE
-------------
SNO          ISL                  STATUS
----------------------------------------------------
 1     ( 3/205-->207/25 )     SUCCESS(4025/4025)
```

```
2         (  3/204-->207/27 )         SUCCESS(5/5)
3         (207/42 -->101/3  )         SUCCESS(4030/4030)
4         (101/16 -->165/99 )         SUCCESS(4030/4030)


INTERNAL PORT COVERAGE
----------------------

SNO     DOMAIN  INTRNL_PORT     STATUS
-----------------------------------------
```

See Also

    None

fcpLogClear

Clears the FCPD debug information log.

Synopsis

fcplogclear

Description

Use this command to clear the debug information logged by the Fibre Channel Protocol daemon (FCPD).

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To clear the FCPD debug information log:

switch:admin> **fcplogclear**

See Also

fcpLogDisable, fcpLogEnable, fcpLogShow

fcpLogDisable

Disables the FCPD debug information log.

Synopsis

```
fcplogdisable
```

Description

Use this command to disable the logging of debug information by the Fibre Channel Protocol daemon (FCPD).

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To disable the FCPD debug information log:

```
switch:admin> fcplogdisable
```

See Also

fcpLogClear, fcpLogEnable, fcpLogShow

fcpLogEnable

Enables the FCPD debug information log.

Synopsis

fcplogenable

Description

Use this command to enable Fibre Channel Protocol daemon (FCPD) logging. Debug information logging is enabled by default.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To enable the FCPD debug information log:

switch:admin> **fcplogenable**

See Also

fcpLogClear, fcpLogDisable, fcpLogShow

fcpLogShow

Displays the FCPD debug information log.

Synopsis

fcplogshow

Description

Use this command to display the debug information logged at various stages during the Fibre Channel Protocol daemon (FCPD) device probing.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To display the FCPD debug information log:

```
switch:admin> fcplogshow
Switch 0; Sat Dec 18 14:22:05 2010
14:22:05.799269 Flush or Probe rcvd, port 15, \
   Line: 16777862, scn_type: 2
14:22:05.799279 Probe flush, port:15, \
   Line:16780554, flag:0
14:22:17.469561 Flush or Probe rcvd, port 15, \
   Line: 16777862, scn_type: 1
14:22:17.469567 Probe Msg Rcvd, port: 15, Line: 16777899, \
   prev_state: 0, msg_scn_arg1: 0
14:22:17.470618 fcpStartProbe, port: 15, line: 16778347, \
   async_state: 1, origin: 0,probe_state: 0, opt_code: 0
14:22:17.471052 fcpStartProbe, port: 15, line: 16778413, \
   async_state: 1073741824, origin: 0,probe_state: 0, opt_code: 0
14:22:17.471057 Probe flush, port:15, Line:16780554, flag:1
(output truncated)
```

See Also

fcpLogClear, fcpLogDisable, fcpLogEnable

fcpProbeShow

Displays the Fibre Channel Protocol (FCP) probe information.

Synopsis

fcpprobeshow [*slot/*]*port*

Description

Use this command to display the Fibre Channel Protocol daemon (FCPD) device probing information for the devices attached to the specified F_Port or FL_Port. This information includes the number of successful logins and SCSI INQUIRY commands sent over this port and a list of the attached devices.

This command includes probing information for NPIV devices. In addition, this command displays the list of devices connected to a port and the number of successful PLOGI, PRLI, INQUIRies, and current probe state. For F_Ports and NPIV ports, when the F_Port Device Update Mode is ON, the probed device details are updated in the "npiv update map" field. When the F_Port Device Update Mode is OFF, the probed device details are updated in the "update map" field. Use the **configure** command to configure the F_Port Device Update Mode.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

slot

For bladed systems only, specify the slot number of the port to display, followed by a slash (/).

port

Specify the port number to display, relative to its slot for bladed systems. Use **switchShow** to list valid ports. This operand is required.

Examples

To display the FCP probe information:

```
switch:admin> fcpprobeshow 31

port 0 is FV-Port and it is online.
nodes probed:       3
successful PLOGIs:  3
successful PRLIs:   3
```

```
successful INQUIRies:3
successful LOGOs:   3
outstanding IUs:    0
probing state:      3
probing TOV:        0
probing count:      0
probing next:       0
pmap:       0x00000000, 0x00000000, 0x00000000, 0x00000000
update map: 0x40000000, 0x00000000, 0x00000000, 0x00000000
npiv pmap:  0x00000000 0x00000000 0x00000000 0x00000000 \
   0x00000000 0x00000000 0x00000000 0x00000000
npiv update map:  0x00000006 0x00000000 0x00000000 0x00000000 \
    0x00000000 0x00000000 0x00000000 0x00000000

list of devices(may include old NPIV devices):
0x500e8: SEAGATE ST318452FC      0005
0x500e4: SEAGATE ST318452FC      0001
0x500e2: SEAGATE ST318452FC      0005
```

See Also

portLoginShow, portLogShow

fcpRlsProbe

Initiates the Fibre Channel Protocol (FCP) Read Link Status (RLS) probing for F_Port and displays the RLS information.

Synopsis

```
fcpRlsProbe --start [slot/]port_list
fcpRlsProbe --show [slot/]port
fcpRlsProbe --help
```

Description

Use this command to initiate the FCP RLS probing or to display the RLS information. This information describes the number of link failures, loss-of-signal, loss-of-sync, CRC errors, and other failure events detected on the specified port.

Use the **fcprlsprobe --start** command to read the error status block for F/FL-Ports. This command will send a RLS ELS probe to the device on the specified port and caches the RLS information.

Use the **fcprlsprobe --show** command to display the cached RLS information. For the command to send RLS probe to the device you must enable the following parameter: Disable Device Probing = 0 (Enables device probing. By default Device probing is enabled).

For this command to gather and display F_Port error statistics, apart from enabling the device probing, you must enable RLS Probing using the **fcprlsprobe --start** command or use the **configure** command, "Disable RLS Probing". By default, RLS probing is disabled.

Notes

The cached RLS information will be provided in **supportsave**. To have the updated RLS information for a specified port or port range in **supportsave**, execute **fcpRlsProbe --start** successfully before initiating the **supportsave**.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

slot

> Specifies the slot number, if applicable, followed by a slash (/).

port_list

> Specifies a port number. You can specify a port or range of ports.

--start

> Sends the ELS RLS to the device and gets the RLS information.

--show

Displays the RLS information.

--help

Displays the command usage.

Examples

To start the RLS probing:

```
switch:admin> fcprlsprobe --start 21
RLS probing initiated...
Please use fcprlsprobe --show port command to view the RLS info.
```

To view the RLS information:

```
switch:admin> fcprlsprobe --show 21
Rls Probing Statistics for port 21
====================================

AL_PA 0x0 PID:11500
--------------------
RLS Probe Status  : FAIL (RLS not supported by device)
Last Updated      : Fri May 26 16:02:07 2017

AL_PA 0x1 PID:11501
--------------------
RLS Probe Status  : SUCCESS
Last Updated      : Fri May 26 16:02:07 2017
------------------------------------------------------------------
link fail    loss sync    loss sig    prtc err    bad word    crc err
------------------------------------------------------------------
      0          103           0          0           0          0
```

See Also

fcpRlsShow

fcpRlsShow

Displays the Fibre Channel Protocol (FCP) Read Link Status (RLS) information.

Synopsis

```
fcprlsshow [slot/]port
```

Description

Use this command to display the FCP RLS information for an F_Port or FL_Port. This information describes the number of loss-of-signal, loss-of-sync, CRC errors, and other failure events detected on the specified port.

For this command to gather and display F_Port error statistics,

- you must enable the configuration parameter: Disable Device Probing = 0 (Enables device probing. By default Device probing is enabled).

- you must enable RLS Probing in the following ways: Use the **fcprlsprobe --start**command which enables RLS Probing or use the **configure** command "Disable RLS Probing" to enable RLS probing. Disable RLS Probing = Off (Enables RLS Probing) by default RLS probing is disabled.

Use the **fcprlsprobe --show** command to view the RLS information.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

slot

For bladed systems only, specifies the slot number of the port to display, followed by a slash (/).

port

Specifies the port number to display, relative to its slot for bladed systems. Use **switch-Show** for a listing of valid ports. This operand is required.

Examples

To display the FCP RLS information:

```
switch:admin> fcprlsshow 21
RLS Probing Statistics for port 21
==================================
```

```
AL_PA 0x0 PID:11500
--------------------
RLS Probe Status : FAIL (RLS not supported by device)
Last Updated : Fri May 26 16:02:07 2017

AL_PA 0x1 PID:11501
--------------------
RLS Probe Status : SUCCESS
Last Updated : Fri May 26 16:02:07 2017

------------------------------------------------------------
link fail  loss sync  loss sig  prtc err  bad word  crc err
------------------------------------------------------------
0          103        0         0         0         0
```

See Also

portLoginShow, portShow

fcrBcastConfig

Displays or sets the broadcast frame forwarding option.

Synopsis

```
fcrbcastconfig --show
fcrbcastconfig --enable -f fabric_id
fcrbcastconfig --disable -f fabric_id
fcrbcastconfig --help
```

Description

Use this command to enable or disable the broadcast frame option or to display the current configuration. If no operands are specified, this command displays the usage. By default, frame forward option is disabled. Use the **--show** option to display the current settings on the switch.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--show

Shows the current broadcast configuration as enabled or disabled. If broadcast frame forwarding is disabled for selected FIDs, only the enabled FIDs in the current configuration are displayed.

--enable

Enables the frame forwarding option for a specified fabric ID.

--disable

Disables the frame forwarding option for a specified fabric ID

-f *fabric_id*

Specifies the fabric ID to be disabled or enabled. Valid values are 1 to 128. This operand is required with the **--enable** and **--disable** options.

--help

Displays the command usage.

Examples

To display the current configuration:

```
fcr:admin> fcrbcastconfig --show
Broadcast configuration is disabled for all FID
```

To enable broadcast frame forwarding for FID 33, 28, and 2:

```
fcr:admin> fcrbcastconfig --enable -f 33
fcr:admin> fcrbcastconfig --enable -f 28
fcr:admin> fcrbcastconfig --enable -f 2
```

To display the new configuration:

```
fcr:admin> fcrbcastconfig --show
Broadcast configuration is enabled for FID:
2 33 128
```

To disable broadcast frame forwarding for FID 33:

```
fcr:admin> fcrbcastconfig --disable -f 33
```

To display the new configuration:

```
switch:admin> fcrbcastconfig --show
Broadcast configuration is enabled for FID:
2 128
```

See Also

bcastShow, portRouteShow

fcrConfigure

Displays or sets FC Router configuration parameters.

Synopsis

```
fcrconfigure --bbfid
fcrconfigure --enable -shortestifl
fcrconfigure --disable -shortestifl
fcrconfigure --add -alias Alias_name -fid  FID
fcrconfigure --delete -alias [FID | -all]
fcrconfigure --resetphantomdomain [-force]
fcrconfigure --show [-alias]
fcrconfigure --help
```

Description

Use this command to change the backbone fabric ID, or to enable or disable the shortest inter-fabric link (IFL) mode. If no operands are specified, this command displays the usage. Use the **--show** option to display the current settings on the switch.

Before you configure the backbone fabric ID using the **--bbfid** option, you must disable FC routing by using the **fosConfig** command and disable the switch using the **switchDisable** command.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--bbfid

Specifies the Backbone Fabric ID. This is an interactive option. A fabric ID uniquely identifies a fabric in FC Router configurations. The backbone fabric is the fabric attached to the U_Ports of the switch, for example, E_Ports or F_Ports. The backbone fabric ID must be unique across all fabrics connected to the FC Router. Use the **switchShow** command to display the current Backbone Fabric ID.

--enable -shortestifl

Enables the shortest IFL mode in FC Router.

When the shortest IFL mode is enabled, FC Router can choose a lowest-cost IFL path in the backbone fabric. This feature is useful when an FC Router has multiple connections to the source edge fabric and the backbone fabric has multiple FC Routers connected through FCIP links (VE_Ports) and FC links (E_Ports). Because a domain in an edge fabric can choose any equal cost path to reach the translate domain, frames can be trans-

mitted through FCIP links even though FC links are present in the backbone fabric. When the shortest IFL mode is enabled, the FCIP path in the backbone fabric is avoided while reaching the destination edge fabric.

You should identify the FCIP links in the backbone fabric and then the direction of the FCIP path (across the backbone fabric) from the source to the destination edge fabric. Once the direction of the FCIP path is identified, set the cost of the FCIP link greater than or equal to 10000 by using the **linkCost** command. The link cost must be set for all FC Routers in the identified FCIP link path. Likewise, identify and set the cost for other FCIP paths of all destination edge fabrics.

After you identify the FCIP links between FC Routers for all fabrics and updated the cost of all FCIP links, enable the shortest IFL mode in all the FC Routers in the backbone fabric using this option. If the FCIP link is the only available path from the source to the destination edge fabric, then traffic will flow through that FCIP link only.

--disable -shortestifl

Disables the shortest IFL mode in FC Router.

--add -alias *Alias_name* -fid *FID*

Adds the alias name to the specific FID.

--delete -alias [*FID* | -all]

Deletes a specific FID alias association or all FID alias associations.

--resetphantomdomain

Resets the persistent front and translate domain IDs to the default starting value (160 for front domain ID and 200 for translate domain ID).

-force

Executes the command without confirmation. This operand is optional.

--show [-alias]

Shows the current Backbone Fabric ID with the associated alias name and the status of the shortest IFL mode as enabled or disabled.

--help

Displays the command usage.

Examples

To configure FC Router parameters:

```
fcr:admin> fcrconfigure --bbfid
Backbone fabric ID parameter set. <cr> to skip this parameter
Please make sure new Backbone Fabric ID does \
```

```
  not conflict with any configured EX-Port's Fabric ID
Backbone fabric ID: (1-128)[128]32
```

To enable shortest IFL mode:

```
fcr:admin> fcrconfigure --enable -shortestifl
Shortest IFL path is enabled.
```

To disable shortest IFL mode:

```
fcr:admin> fcrconfigure --disable -shortestifl
Shortest IFL path is disabled
```

To display the current configuration:

```
fcr:admin> fcrconfigure --show
Backbone fabric ID: 32
Shortest IFL feature is disabled
```

To assign a name to a FID:

```
fcr:admin> fcrconfigure --add -alias Red_fabric -fid 10
```

To display a name associated to a FID:

```
fcr:admin> fcrconfigure --show -alias
FIDAlias
========================
10Red_fabric
```

To delete the name of a FID:

```
fcr:admin> fcrconfigure --delete -alias 10
```

To reset all the phantom domain to the default range:

```
fcr:admin> fcrconfigure --resetphantomdomain
This operation will reset all the phantom domain to be default range
Do you want to continue (Y/N):y

Phantom Domain IDs were successfully reset to default
```

See Also

fosConfig, portCfgEXPort, switchDisable, switchEnable, switchShow, linkCost

fcrEdgeShow

Displays the FIDs of all configured EX_Ports.

Synopsis

```
fcredgeshow
fcredgeshow [-fid FabricID]
fcredgeshow --help
```

Description

Use this command without operand to display information about all Fabric IDs (FIDs) that have been created on the chassis and are assigned to EX_Ports.

When a FID is specified, **fcredgeshow** displays information for all EX_Ports configured with the specified FID.

For each FID, the command output includes the following:

FID

Fabric ID of the EX_Port.

EX-port

EX_Port number of the switch.

E_Port

Port number for the remote E_Port.

PWWN

Neighbor switch port WWN.

SWWN

Neighbor switch WWN.

Flags

encryption, compression and fec features

The command output depends on the EX_Port configuration:

- If the EX_Port is online, the command displays the FID, the EX_Port to which it is assigned, the E_Port, the port WWN, the switch WWN and Port flags.

- IF no EX_Ports are configured in the switch, the command displays "No EX-port Configured".

- If no EX_Ports are configured within the specified FID, the command displays the following message: "No EX-ports with FID *FabricID*."

Notes

This command is not supported on the Brocade Analytics Monitoring Platform.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

-fid *FabricID*

Specifies the FID for which to display the configured EX_Ports.

--help

Displays the command usage.

Examples

To display the EX_Ports configured in the switch:

```
switch:admin> fcredgeshow
FID  EX-port E-port  Neighbor Switch (PWWN, SWWN ) Flags
------------------------------------------------------------------
25   1/13    244  20:f4:00:05:1e:38:a4:cb 10:00:00:05:1e:38:a4:cb FEC \
     ENCRYPTION COMPRESSION
35   1/12    299  2e:2b:00:05:1e:40:44:02 10:00:00:05:1e:40:44:02
ENCRYPTION \
     COMPRESSION
11   5/13    273  2e:11:00:05:33:b3:39:00 10:00:00:05:33:b3:39:00 FEC
```

To display the EX_Ports configured with a specified FID:

```
switch:admin> fcredgeshow -fid 25
FID EX-port  E-port  Neighbor Switch (PWWN, SWWN ) Flags
------------------------------------------------------------------
25  11       244  20:f4:00:05:1e:38:a4:cb 10:00:00:05:1e:38:a4:cb FEC
ENCRYPTION \
     COMPRESSION
```

To display a FID for which no EX_Ports are configured:

```
switch:admin> fcredgeshow -fid 29
No EX-ports with FID 29
```

See Also

fcrPhyDevShow, fcrProxyDevShow, fcrRouteShow, lsanZoneShow, switchShow, fcrFabricShow

fcrFabricShow

Displays the FC Routers on a backbone fabric.

Synopsis

```
fcrfabricshow
fcrfabricshow --name
fcrfabricshow --alias
fcrfabricshow --help
```

Description

Use this command to display information about FC Routers that exist in an FC Router backbone fabric. The existing syntax is maintained for IPv6 support. When IPv6 addresses are not configured, the output of **fcrFabricShow** displays the IPv4 format. Use the **--name** option to display the fabric name along with EX-port, FID, and switch name.

The message "No active FC Routers found" is displayed if no active FC Routers are present on the backbone fabric.

The following information is displayed for each FC Router found on the backbone fabric:

WWN

The world wide name of the FC Router.

Domain ID

The domain ID of the FC Router. This domain ID is relevant only on the backbone fabric.

Info

The Ethernet IP address and switch name of the FC Router. When IPv6 addresses are configured, only the static IP address displays for each FC Router found on the backbone fabric.

EX_Ports

A listing of active EX_Ports for the FC Router and information about these EX_Ports. This information includes:

EX_Port

The port number for the trunkmaster EX_Port. An asterisk (*) at the end of the line indicates that the EX_Port is a Remote Router Port.

FID

The fabric ID of the EX_Port.

Neighbor Switch Info(WWN, enet IP, name)

The WWN, Ethernet IP address, and switch name of the switch attached to the EX_Port.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operand.

--name

Displays the FC Routers on a backbone fabric with edge fabric names.

--alias

Displays the FC Routers on a backbone fabric with alias name of each fabric.

--help

Displays the command usage.

Examples

To display the FC Routers in the backbone fabric:

```
switch:admin> fcrfabricshow

FC Router WWN: 10:00:00:05:1e:41:59:81, Dom ID:   2, Info:
 10.33.36.8,  "swd77"
  EX_Port  FID Neighbor Switch Info (enet IP, WWN, name)
  --------------------------------------------------------
  12       5  10.33.35.81 10:00:00:05:1e:34:01:d0 "B10_4"

 FC Router WWN: 10:00:00:05:1e:41:1c:73, Dom ID:   4, Info:
 10.33.36.12, "ttv12"
  EX_Port FID Neighbor Switch Info (enet IP, WWN, name)
  --------------------------------------------------------
    9     2  10.33.35.80 10:00:00:05:1e:38:01:e7 "B10_3"
    10    2  10.33.35.80 10:00:00:05:1e:38:01:e7 "B10_3"

 FC Router WWN: 10:00:00:05:1e:39:51:67, Dom ID:   5, Info:
 10.33.36.96, "Scimitar"
  EX_Port FID Neighbor Switch Info (enet IP, WWN, name)
  --------------------------------------------------------
    151   2  10.33.35.80 10:00:00:05:1e:38:01:e7 "B10_3"*
```

To display the fabric name along with EX-port, FID, and switch name:

```
switch:admin> fcrfabricshow --name
```

```
FC Router WWN: 10:00:00:05:33:13:70:3e, Dom ID:   1,
Info: 10.17.33.129, "U34"
 EX_Port      FID       Neighbor Switch Info (swname, fabricname)
    ----------------------------------------------------------------
    16         22        "SPIRIT-2"  "FOSFCR"
    17         22        "SPIRIT-2"  "FOSFCR"
    18         22        "SPIRIT-2"  "FOSFCR"

FC Router WWN: 10:00:00:05:33:13:74:3e, Dom ID:   2,
Info: 10.17.33.128, "U35"
 EX_Port      FID       Neighbor Switch Info (swname, fabricname)
    ----------------------------------------------------------------
    7          33        "STINGER-U33"  "BODCFCR"
    4          33        "STINGER-U33"  "BODCFCR"
    5          33        "STINGER-U33"  "BODCFCR"
    6          33        "STINGER-U33"  "BODCFCR"
```

To display the FC Routers on a backbone fabric with alias name:

```
switch:admin> fcrfabricshow --alias
FC Router WWN: 10:00:00:05:1e:44:d2:00, Dom ID:  20,
Info: 10.38.134.20, 2620:100:4:f400:205:1eff:fe44:d200    "DCX+"
 EX_Port Alias_name       Neighbor Switch Info (enet IP, name)
--------------------------------------------------------------------
------------
    249    "RED"           10.38.134.30   "p8510"
                           2620:100:4:f400:205:1eff:feb7:1000
    215    "GREEN"         10.38.134.13   "Skybolt13_sw1"
```

See Also

fcrPhyDevShow, fcrProxyDevShow, fcrRouteShow, lsanZoneShow, switchShow

fcrIclPathBWMonitor

Sets or displays FC Router ICL bandwidth monitor parameters for EX_Ports.

Synopsis

```
fcriclpathbwmonitor --enable
fcriclpathbwmonitor --disable
fcriclpathbwmonitor --show
fcriclpathbwmonitor --help
```

Description

Use this command to enable or disable the Inter Chassis Link (ICL) EX_Ports bandwidth Monitor feature on an FC Router, or to display the current status of ICL bandwidth feature and the ICL slot bandwidth assigned to connected edge fabrics. If no operands are specified, this command displays the usage. By default, this feature is disabled.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--enable

Enables the ICL EX_Port bandwidth Monitor feature on an FC Router. In the enable mode, FC Router will periodically check for bandwidth imbalances from each ICL slot of FC Router to each ICL slot of neighbor switch connected through EX_Ports. A RASLog message will be generated when bandwidth imbalance is detected or resolved to other fabric.

--disable

Disables the ICL EX_Port bandwidth Monitor feature on an FC Router.

--show

Displays the current ICL EX_Port bandwidth Monitor feature status and bandwidth from each slot to connected edge fabric.

--help

Displays the command usage.

Examples

To enable ICL EX_Port bandwidth Monitor:

```
fcr:admin> fcriclpathbwmonitor --enable
ICL bandwidth balance Monitor functionality is enabled
```

To disable ICL EX_Port bandwidth Monitor:

```
fcr:admin> fcriclpathbwmonitor --disable
ICL bandwidth balance Monitor functionality is disabled
```

To display the current configuration:

```
fcr:admin> fcriclpathbwmonitor --show
ICL Path Bandwidth state :Enabled

FABRIC   SLOT-3 BW  SLOT-6 BW    STATE
========================================
  48       128        128      BALANCED
 126        64        128      UNBALANCED
```

See Also

fosConfig, switchDisable, switchEnable, switchShow

fcrLsan

Configures and displays LSAN policies.

Synopsis

```
fcrlsan
fcrlsan --add -enforce tag | -speed tag
fcrlsan --remove -enforce tag | -speed tag
fcrlsan --show -enforce | -speed | -all
fcrlsan --help
```

Description

Use this command to add or remove LSAN tags, or to display existing tags in the configuration. LSAN tagging optimizes an FC Router's behavior based on a specified subset of LSANS. This feature improves scalability and performance related to LSAN zone size and the speed with which they are imported or exported.

This command supports two types of LSAN tags: enforced tags and speed tags.

- Enforced LSAN tags filter zones accepted by the FC Router from the edge fabric by matching the zones to the configured tags. Only matching zones are accepted into the local database for export and import. For example, if you configure an enforced LSAN tag "BRCD" on a router, only zones with names starting with "lsan_BRCD" are accepted. If multiple tags are configured, any matching zones are accepted. A maximum of eight LSAN enforce tags are configurable per FC Router switch.

- A speed tag is a flag to indicate to the FCR that the targets in the LSANs matching the tag need to be imported permanently when host and target are zoned together, even if the host is not present. This mechanism facilitates a speedy discovery process by reducing instances of failure related to timeouts. Once the devices that belong to the target edge fabric are defined as speed LSANS, the import or export can occur with a minimum amount of delay when hosts reboot or are added to the zone database.

The following restrictions apply when configuring LSAN tags:

- The switch must be disabled when you configure enforce tags. Speed tags can be configured while the switch is online.

- You must change the LSAN name in the edge fabric or the backbone fabric and propagate the LSAN to the FCR. Note that enforce tags are not supported in the backbone fabric.

- The speed tags must be set in all related FC Routers in order for import and export to proceed correctly. However, only LSANs on the target edge fabric must append the tag.

When executed without operands, **fcrlSan** displays the command usage.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--add

Adds the specified tag to the LSAN tag configuration.

--remove

Removes the specified tag from the LSAN tag configuration.

--show

Displays the specified tag from the LSAN tag configuration.

--help

Displays the command usage.

-enforce *tag*

Accepts only the LSANs from the edge fabric that matches the specified tag string into the local FCR database. A valid tag is a string of a maximum of eight characters. The maximum configurable enforced tags is eight.

-speed *tag*

Allows the FCR to always import these target devices to the hosts specified in the LSANs that match the speed tag. Only one speed tag is allowed per FC router.

-all

When used with the **--show** option, this command displays all LSAN tags in the FCR LSAN tag database.

Examples

To add an LSAN enforcement tag named "brocade":

```
switch:admin> switchdisable

switch:admin> fcrlsan --add -enforce brocade
LSAN tag set successfully
```

To add a speed tag named "mcdt":

```
switch:admin> fcrlsan --add -speed mcdt
LSAN tag set successfully
```

To remove the LSAN enforcement tag "brocade":

```
switch:admin> fcrlsan --remove -enforce brocade
LSAN tag removed successfully
```

To remove the speed tag "mcdt":

```
switch:admin> fcrlsan --remove -speed mcdt
LSAN tag removed successfully
```

To display the information from the cache:

```
switch:admin> fcrlsan --show -enforce
Total LSAN tags : 2
ENFORCE : brocade
ENFORCE : cisco

switch:admin> fcrlsan --show -speed
Total LSAN tags : 1
SPEED: mcdt

switch:admin> fcrlsan --show -all
Total LSAN tags : 3
ENFORCE : brocade
ENFORCE : cisco
SPEED: mcdt
```

See Also

fcrFabricShow, lsanZoneShow, fcrPhyDevShow, fcrProxyDevShow, fcrRouteShow, switchShow

fcrLsanCount

Displays or sets the maximum LSAN count.

Synopsis

fcrlsancount [*max_lsan_count*]

Description

Use this command to set or display the maximum number of LSAN zones that can be configured on the edge or backbone fabric. By default, the maximum LSAN count is set to 3000, which is also the minimum. This command allows you to create LSAN zones up to 5000 for Gen5 platforms and 7500 for Gen6 platforms in the backbone fabric, if needed to support additional devices. The maximum number of supported LSAN devices is 10,000 for Gen5 platforms and 15000 for Gen6 platforms.

When executed without operand, this command displays the current LSAN zone limit.

This command assumes that all FCRs in the same LSAN fabric matrix or backbone have the same maximum LSAN count defined in order to protect the FCRs from running into indefinite state. Asymmetric LSAN configurations due to different maximum LSAN counts may lead to different devices being imported on different FCRs.

Because the maximum number of LSANs is configured per switch, if there is a different maximum LSAN count on the switches throughout the meta-SAN, the device import or export will not be identical on the FCRs. You should therefore enter the same maximum LSAN count for all the FCR switches in the same backbone that support this feature. Verify the configured maximum limit against the LSANs configured using the **fcrResourceShow** command.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

max_lsan_count

Specifies the maximum LSAN count.

Examples

To display the current LSAN limit:

```
switch:admin> fcrlsancount
 LSAN Zone Limit: 3000
```

To increase the LSAN zone limit:

```
 switch:admin> fcrlsancount 5000
```

```
LSAN Zone Limit: 5000
```

See Also

        fcrResourceShow

fcrLsanMatrix

Creates, modifies, and displays the LSAN fabric matrix or the FCR matrix.

Synopsis

```
fcrlsanmatrix
fcrlsanmatrix --add -lsan FID FID | -fcr wwn wwn
fcrlsanmatrix --remove -lsan FID FID | -fcr wwn wwn
fcrlsanmatrix --apply -lsan | -fcr | -all
fcrlsanmatrix --cancel -lsan | -fcr | -all
fcrlsanmatrix --display -lsan | -fcr
fcrlsanmatrix --fabricview -lsan | -fcr
fcrlsanmatrix --verify -lsan | -fcr
fcrlsanmatrix --quickmode -lsan | -fcr
fcrlsanmatrix --help
```

Description

Use this command to create, modify, remove, and manage Logical SAN (LSAN) Zone bindings between edge fabrics or between FC routers. LSAN Zone bindings specify pairs of edge fabrics or FCRs that can access each other and share LSAN Zone and device database information.

This command follows a transaction model. Modifications to the LSAN fabric matrix or to the FC router matrix are saved nonpersistently in a cache until you save the changes persistently with the **--apply** option.

When used with the **-lsan** option, this command manages the LSAN matrix information. An LSAN fabric pair binds two edge fabrics specified by their Fabric IDs. Every paired edge fabric implies two-way communications. The paired edge fabrics have access only to the edge fabrics associated with them by this command. The edge fabrics that are not specified in the LSAN fabric matrix have access to the remaining unspecified edge fabrics. Using this information, the FCR switch maintains the remote LSAN Zone and the device state database only if it is associated with its local edge fabrics.

For example, if the edge fabrics with FIDs 1, 2, 3, 4, and 5 are online, all edge fabrics have two-way communication. This is the default behavior. If you pair the edge fabrics 1 and 2 with the **--add -lsan** command, the default access between the edge fabrics is changed as follows:

•   Fabric 1 can access only fabric 2.

•   Fabric 2 can access only fabric 1.

•   The fabrics 3, 4, and 5 can access each other, but cannot access Fabric 1 or 2.

The LSAN matrix information is automatically distributed to all switches in the fabric. The FIDs entered are not required to be online when you set up the LSAN fabric matrix.

When used with the **-fcr** option, this command manages the FC router matrix. This database consists of FC router pairs that can talk to each other. All edge fabrics connected to a defined pair of FCRs are allowed to import devices to each other.

Once a fabric is removed from an FCR, the communication with other fabrics of the two FCRs is also removed. It is advisable to update the matrix to reflect the change. If FCR Binding is enabled in the edge fabrics, the edge fabrics can still communicate with the backbone fabric.

The LSAN matrix provides a higher level of granularity than the FCR matrix. Therefore, communication between two fabrics could pass the FCR matrix, but fail due to restriction of the FID matrix.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

If no operands are specified, this command displays the persistent LSAN Zone matrix information. The following operands are optional:

--add -lsan *FID FID* **| -fcr** *wwn wwn*

Adds the pair of edge fabrics or FCR members that can access each other to the LSAN matrix cache. Edge fabrics are specified by their Fabric IDs. FCRs are specified by their world wide names (WWNs). If the FCR is online, the domain ID of the switch can be used in place of the WWN. If you specify **--add** with zero (0) value for *FID* or 00:00:00:00:00:00:00:00 for *wwn*, the command returns the cache to default mode.

--remove -lsan *FID FID* **| -fcr** *wwn wwn*

Removes the specified pair of FIDs or FCRs from the cache. When you remove a fabric or FCR pair from the LSAN matrix, the edge fabrics assume the default behavior.

--apply -lsan | -fcr | -all

Applies the information from the cache to persistent memory. This operation succeeds only if there is no effect on the existing import/export devices. Otherwise, this command generates an error message. See the Diagnostics section for more information.

--cancel -lsan | -fcr

Cancels changes made to the cache that were not applied. This command effectively reverts to the persistently stored information.

--display -lsan | -fcr

Displays the information saved in the cache.

--fabricview -lsan | -fcr

Displays all static and default/dynamic fabric bindings in the backbone.

--verify -lsan | -fcr

Verifies if the LSAN Zone information previously entered and stored in the cache can be successfully applied. The data is considered acceptable if the apply operation does not cause any traffic disruption

--quickmode

Derives the LSAN Zone matrix from the imported or exported devices.

Diagnostics

Error message (1)

LSAN Matrix in the cache conflicts with existing import/export devices and may disrupt traffic. Please refer to the man page for the corrective action.

Corrective actions:

- Any new router added to the backbone fabric automatically triggers a matrix merge. If a router does not support the matrix merge feature, the router cannot join the backbone fabric. Make sure that all legacy FCR switches in the backbone support the matrix merge feature, otherwise the feature is not supported.

- Use **fcrlsanmatrix --fabricview -lsan** | **-fcr** to confirm that all the switches in the backbone have the same LSAN and FCR Binding matrix. If not, there are two solutions. The first solution is to modify one FCR or both to make them the same and then activate the FCRs. The second solution is to zero out the database of one FCR to signal that this FCR accepts the database from the other FCR once the change is activated.
To zero out the database, execute the following commands:

  – **fcrlsanmatrix --add -lsan 0 0**

  – **fcrlsanmatrix --add -fcr 00:00:00:00:00:00:00:00 00:00:00:00:00:00:00:00**

  – **fcrlsanmatrix --apply -all**

- In a dual backbone configuration, execute **fcrlsanmatrix --fabricview** on the FCR switches to confirm that the shared edge fabric FIDs have the same access in both backbones.

- Execute **fcrlsanmatrix --display -lsan** | **-fcr** and **fcrproxydevshow -a**. Check that the LSAN Binding matrix in the cache is not in conflict with the existing import/export devices that are displayed on the FCR switch. If there is a conflict, do one of the following:
  – Update the LSAN/FCR Binding matrix in the cache to allow access for the FIDs that have imported devices.

  – Remove the conflicting import/export devices by updating the LSAN zone in the edge fabrics.

  – Disable the conflicting devices.

Error message (2)

There may be other FCR switches in the backbone that do not support the LSAN Binding feature or do not have the same fcrlsanmatrix settings.

Please refer to the man page for the corrective action.

Corrective actions:

- Verify that all FCR switches in the backbone support the LSAN Binding features.

- Execute **fcrlsanmatrix --fabricview** to confirm that all the switches in the backbone have the same LSAN Binding matrix. If not, clear the LSAN Binding feature on all the switches and reapply the same LSAN Binding matrix on all the FCR switches in the backbone.

- In a dual backbone configuration, use **fcrlsanmatrix --fabricview** on the FCR switches to confirm that the shared edge fabric FIDs have the same access in both backbones.

Refer to the *Brocade Fabric OS Message Reference manual* for further diagnostic information.

Examples

To add the LSAN Zone Matrix data (For the following example, assume that the backbone has the following online edge fabrics (FIDs): 1, 2, 4, 5, 7, 8, and 10. Currently, FIDs 14 and 19 are not available.):

```
switch:admin> fcrlsanmatrix --add -lsan 4 5
switch:admin> fcrlsanmatrix --add -lsan 4 7
switch:admin> fcrlsanmatrix --add -lsan 10 14
switch:admin> fcrlsanmatrix --add -lsan 10 19
```

To remove an entry from the LSAN matrix:

```
switch:admin> fcrlsanmatrix --remove -lsan 10 14
```

To display the information from the cache:

```
switch:admin> fcrlsanmatrix --display -lsan

Fabric ID 1              Fabric ID 2
---------------------------------
    4                         5
    4                         7
   10                        19
```

To apply the changes persistently:

```
switch:admin> fcrlsanmatrix --apply -lsan
```

To view the persistent changes:

```
switch:admin> fcrlsanmatrix -lsan
LSAN MATRIX is activated
Fabric ID 1              Fabric ID 2
-------------------------------------
 4                            5
 4                            7
10                           19
```

To view the LSAN Zone static and default/dynamic binding in the backbone where online fabrics are: 1, 2, 4, 5, 7, 8, 10:

```
switch:admin> fcrlsanmatrix --fabricview -lsan
LSAN MATRIX is activated

Fabric ID 1              Fabric ID 2
-------------------------------------

4                            5
4                            7
10                           19
Default LSAN Matrix:
1 2 8
```

To display all proxy devices for all FC Routers in the same backbone fabric whether or not they are relevant to this FC Router:

```
switch:admin> fcrproxydevshow -a

 Proxy            WWN              Proxy  Device Physical  State
 Created                          PID    Exists  PID
 in Fabric                               in Fabric

   52  10:00:00:06:2b:0e:4d:e5   01f001    78    4e0000   Imported
   52  10:32:16:90:28:dd:d0:03   0bf001    82    2a0900   Imported
   52  10:32:16:91:24:dd:d0:07   0bf002    82    520c00   Imported
   52  10:32:16:91:25:dd:d0:06   01f002    78    4e3000   Imported
   78  10:00:00:06:2b:0d:29:31   09f002    52    482200   Imported
   78  10:32:16:90:29:dd:d0:07   08f002    82    2a0a00   Imported
   78  10:32:16:91:24:dd:d0:05   09f001    52    48a100   Imported
   78  10:32:16:91:25:dd:d0:03   08f001    82    520f00   Imported
   82  10:00:00:06:2b:0d:29:30   01f002    78    4e1400   Imported
   82  10:00:00:06:2b:0d:2f:ed   03f002    52    480200   Imported
   82  10:00:00:06:2b:0d:33:4d   01f001    78    4e1800   Imported
   82  10:00:00:06:2b:0e:4d:c9   03f001    52    482000   Imported
Total devices displayed: 12
```

To display the information from the cache:

```
switch:admin> fcrlsanmatrix --display -lsan

 Fabric ID 1              Fabric ID 2
-------------------------------------
52                                 78
52                                 82
78                                 82
```

To apply the changes persistently:

```
switch:admin> fcrlsanmatrix --apply -lsan
```

To view all the static and the default/dynamic fabric binding in the backbone:

```
switch:admin> fcrlsanmatrix --fabricview -lsan
LSAN MATRIX is activated

 Fabric ID 1              Fabric ID 2
-------------------------------------
52                                 78
52                                 82
78                                 82


Default LSAN Matrix:
57 91
```

To add FCR Bindings to the FCR matrix:

```
switch:admin> fcrlsanmatrix --add -fcr 10:00:00:60:69:e2:09:fa \
      10:00:00:60:69:e2:09:fb
switch:admin> fcrlsanmatrix --add -fcr 10:00:00:60:69:e2:09:fb \
      10:00:00:60:69:e2:09:fc
```

To remove an entry from the FCR matrix:

```
switch:admin> fcrlsanmatrix --remove -fcr 10:00:00:60:69:e2:09:fb \
     10:00:00:60:69:e2:09:fc
```

To display the information from the cache:

```
switch:admin> fcrlsanmatrix --display --fcr

    CACHE FCR PAIRS
==================================
FCR                             FCR
----------------------------------------------------
10:00:00:60:69:e2:09:fa (2)   10:00:00:60:69:e2:09:fb (unknown)
```

To apply the changes persistently:

```
switch:admin> fcrlsanmatrix --apply -fcr
```

To view the persistent changes:

```
switch:admin> fcrlsanmatrix --fabricview -fcr

     SAVED FCR PAIRS
==================================
FCR                             FCR
----------------------------------------------------
10:00:00:60:69:e2:09:fa (2)     10:00:00:60:69:e2:09:fb (unknown)
```

See Also

fcrFabricShow, lsanZoneShow, fcrPhyDevShow, fcrProxyDevShow, fcrRouteShow, switchShow

fcrPhyDevShow

Displays the FC Router physical device information.

Synopsis

fcrphydevshow [**-a**][**-f** *FID*][**-w** *wwn*][**-c**][**-d**] [**-h**]

Description

Use this command to display the physical (real) devices that are configured to be exported to other fabrics. A device is considered to be configured to be exported to another fabric if it is a member of an LSAN zone. The device is displayed only if it is discovered in the EX_Port-attached fabric and backbone fabric's name server (for instance, the device is online).

Physical device information is available only for physical devices that exist in fabrics attached to EX_Ports of FC Routers on the same backbone fabric as the current FC Router.

The default output displays only physical device information relevant to the current FC Router. Relevant physical devices include physical devices that are configured to be exported from fabrics attached to the current FC Router's EX_Ports.

The physical devices are listed by fabric.

The **-f** and **-w** operands allow searching for physical devices based on fabric ID or port world wide name.

"No device found" is displayed if there is no physical device information available at the current FC Router.

Each line of the output displays:

Device Exists in Fabric

The fabric in which the physical device exists.

WWN

The world wide name of the device port.

Physical PID

The port ID of the physical device. This port ID is only relevant on the fabric specified by the "Device Exists in Fabric" column.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

-a

Displays all physical devices for all FC Routers in the same backbone fabric whether or not they are relevant to the current FC Router.

-a -f *FID*

Displays the physical devices in the specified fabric for all FC Routers in the same backbone fabric whether or not they are relevant to the current FC Router.

-w *wwn*

Displays the physical devices with the specified port WWN.

-c

Clears login-related counters.

-d

Displays the following login-related counters. Counters are cleared upon reboot or failover.

login try

The number of times the device attempted to log in.

local failure

the number of times the device login failed because of missing LSAN zones within the device fabric.

remote failure

the number of times the device login failed due to missing LSAN zones within the remote fabric.

-h

Displays command usage.

Examples

To display the physical devices relevant to an FC Router:

```
fcr:admin> fcrphydevshow
        Device            WWN            Physical
        Exists                           PID
        in Fabric
        -----------------------------------------
            2    10:00:00:00:c9:2b:6a:68   c70000
            3    50:05:07:65:05:84:09:0e   0100ef
            3    50:05:07:65:05:84:0b:83   0100e8
```

```
Total devices displayed: 3
```

See Also

fcrFabricShow, fcrProxyDevShow, fcrRouteShow, lsanZoneShow, switchShow

fcrProxyConfig

Displays or configures proxy devices presented by an FC Router.

Synopsis

```
fcrproxyconfig
      [-s importedFID devWWN slot]
      [-r importedFID devWWN]
```

Description

Use this command to display or set the persistent configuration of proxy devices presented by the local FC Router.

When used without operand, this command displays the persistent proxy device configuration; otherwise, it sets the specified attributes to its new value.

The proxy device must be inactive prior to setting or clearing persistent attributes. Disabling EX_Ports (using the **portDisable** command) attached to the relevant edge fabric, removing the device from the appropriate LSAN zones, or disabling the physical device are valid methods of ensuring a proxy device is inactive.

Persistent proxy device configuration attributes apply to the local FC Router. Multiple FC Routers attached to the same edge fabric coordinate to present the same proxy devices. As a result, persistent proxy device configurations must be consistent across all FC Routers attached to the same edge fabric or unpredictable results may occur. If the proxy device configuration is not altered, no action is required. If the configuration is altered, then care must be taken to ensure consistency across all FC Routers attached to the same edge fabric.

When used without operands, this command displays the following information:

importedFID

> The imported fabric ID of the proxy device.

devWWN

> The port world wide name of the device.

Slot

> The slot used for the device WWN. The device WWN-to-slot association is persistently stored. The slot format is *XXYYH*, where *XX* specifies the translate domain area_ID (valid values include F0H through FFH) and *YY* specifies the Port ID value or the low 8-bits of the proxy device address (valid values include 01H through 7FH). The address of the proxy device is derived from the PID format (for example, native, core, or extended edge) and the proxy device slot.

If no proxy device WWN is stored in any slot for all edge fabrics, the following message is displayed: "All slots empty."

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

-s *importedFID devWWN slot*

Adds the specified *devWWN* (format: xx:xx:xx:xx:xx:xx:xx:xx) to the specified slot (format XXYYH, where XX is the translate domain area_ID [F0H through FFH] and YY is the port_ID [01H through 7FH]) for the edge fabric specified (1 through 128). The following messages may be displayed:

- "WWN does not exist in any proxy device slot." The WWN does not exist in any slot for the specified edge fabric.

- "Too many proxy slots configured. Remove some unused proxy device WWNs from their slots using the **-r** operand and try again." All slots are used for the specified edge fabric.

- "The specified slot already contains a WWN, overwrite? [y]" The specified slot already contains an entry. You are then prompted for confirmation.

-r *importedFID devWWN*

Removes the specified *devWWN* (format: XX:XX:XX:XX:XX:XX:XX:XX) from its slot for the edge fabric specified by *importedFID* (1 through 128). If the WWN does not exist in any slot for the specified edge fabric, the following message is displayed: "WWN does not exist in any proxy device slot."

Examples

To display the persistent proxy device configuration:

```
switch:admin> fcrproxyconfig
Imported FID        Device WWN            Slot
002          50:05:07:65:05:84:08:d7    f001
002          50:05:07:65:05:84:0a:7b    f002
002          22:00:00:20:37:c3:11:71    f001
002          22:00:00:20:37:c3:1a:8a    f002
003          10:00:00:00:c9:2b:6a:2c    f001
```

To persistently configure device WWN 00:11:22:33:44:55:66:77 to use slot f101h in fabric 5:

```
switch:admin> fcrproxyconfig -s 5  \
   00:11:22:33:44:55:66:77 f101
```

To remove device WWN 00:11:22:33:44:55:66:77 from its persistent slot in fabric 5:

```
switch:admin> fcrproxyconfig -r 5  \
   00:11:22:33:44:55:66:77
WWN deleted from proxy device slot
```

See Also

fcrPhyDevShow, fcrProxyDevShow, fcrXlateConfig, lsanZoneShow, switchShow

fcrProxyDevShow

Displays FC Router proxy device information.

Synopsis

fcrproxydevshow [**-a**][**-f** *fabricid*][**-w** *wwn*]

Description

Use this command to display the proxy devices presented by FC Router EX_Ports and information about the proxy devices. A proxy device is a virtual device presented in to a fabric by an FC Router. A proxy device represents a real device on another fabric. When a proxy device is created in a fabric, the real Fibre Channel device is considered to be imported in to this fabric. The presence of a proxy device is required for inter-fabric device communication. The proxy device appears to the fabric as a real Fibre Channel device. It has a name server entry and is assigned a valid port ID.

Proxy device information is available only for proxy devices that are presented by FC Routers on the same backbone fabric as this FC Router.

The default output displays only proxy device information relevant to this FC Router. Relevant proxy devices include proxy devices created by this FC Router (devices imported by this FC Router).

The proxy devices are listed by fabric. Search parameters **-f** and **-w** allow searching for proxy devices based on fabric ID or port WWN.

"No proxy device found" is displayed if there is no proxy device information available on this FC Router.

This command displays the following information:

Proxy Created in Fabric

The fabric in which the proxy device has been created.

WWN

The WWN of the device port.

Proxy PID

The port ID of the proxy device. The port ID is only relevant on the fabric specified by the "Proxy Created in Fabric" column.

Device Exists in Fabric

The fabric in which the physical device is connected or exists.

Physical PID

The port ID of the physical device. The port ID is relevant only on the fabric specified by the "Device Exists in Fabric" column.

State

State includes:

Imported

Proxy device has been imported into the fabric.

Initializing

The proxy device is being initialized and will soon be imported into the fabric.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

-a

Display all proxy devices for all FC Routers in the same backbone fabric whether or not they are relevant to this FC Router.

-a -f *fabricid*

Display the proxy devices in the specified fabric for all FC Routers in the same backbone fabric whether or not they are relevant to this FC Router.

-f *fabricid*

Display the proxy devices in the specified fabric that are relevant to this FC Router.

-w *wwn*

Displays proxy devices with the specified port WWN.

Examples

To display the proxy devices relevant to this FC Router:

```
switch:admin> fcrproxydevshow
Proxy          WWN           Proxy  Device  Physical State
Created                      PID    exists   PID
in Fabric                            in Fabric
-----------------------------------------------------------
2   50:05:07:65:05:84:09:0e 01f001   3    0100ef Imported
2   50:05:07:65:05:84:0b:83 01f000   3    0100e8 Imported
3   10:00:00:00:c9:2b:6a:68 02f000   2    c70000 Imported
    Total devices displayed: 3
```

See Also

   fcrFabricShow, fcrRouteShow, lsanZoneShow, switchShow

fcrResourceShow

Displays FC Router physical resource usage.

Synopsis

```
fcrresourceshow
```

Description

Use this command to display the FC Router-available resources. The maximum number allowed versus the currently used is displayed for various resources. The command output includes:

LSAN Zones

The maximum versus the currently used LSAN zones.

LSAN Devices

The maximum versus the currently used LSAN device database entries. Each proxy or physical device constitutes an entry.

Proxy Device Slots

The maximum versus the currently used proxy device slots. A proxy device is presented to an edge fabric as being connected to a translate domain slot. A slot is the port number and AL_PA combination. The slot-to-device WWN association is persistently stored.

Phantom Node WWNs

The maximum versus the currently allocated phantom switch node WWNs. The phantom switch requires node WWNs for fabric-shortest-path-first (FSPF) and manageability purposes. Phantom node names are allocated from the pool sequentially and are not reused until the pool is exhausted and rolls over. The last allocated phantom node WWN is persistently stored. If the switch is disabled, the phantom node WWNs are not returned to the pool because the phantom switch could still be accessible through other switches. Across a switch reboot, the allocation starts from the next usable WWN from the pool and not from the beginning.

Phantom Port WWNs

The maximum versus the currently used phantom domain port WWNs. Phantom domain ports require port WWNs for manageability purposes. Phantom domain ports include ports connecting front and translate domains (virtual ISLs), translate domain ports for proxy devices, and EX_Ports. Phantom port names are allocated from the pool sequentially and are not resumed until the pool is exhausted and rolls over. The last allocated phantom port WWN is persistently stored. If the switch is disabled, phantom port WWNs are not returned to the pool because the phantom switch might still be accessible through other switches. Across the switch reboot, the allocation starts from the next usable WWN base from the pool and not from the beginning.

Port Limits

Displays resources for each physical port (EX_Port), which include the following:

Max Proxy Devices

The maximum versus the currently used proxy device.

Max NR_Ports

The maximum versus the currently used NR_Port entries. Destination NR_Port entries are stored at every physical port for routing decision purposes.

Notes

Only configured EX/VEX_Ports are displayed

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To display the resource usage for the local FC Router:

```
switch:admin> fcrresourceshow

 Daemon Limits:
                Max Allowed  Currently Used
                ----------------------------
LSAN Zones:          3000               22
LSAN Devices:       10000             1208
Proxy Device Slots: 10000                2

                WWN Pool Size     Allocated
                ----------------------------
Phantom Node WWN:  8192             3790
Phantom Port WWN: 32768             6446

Port Limits:
Max proxy devices:  2000
Max NR_Ports:       1000

Currently Used(column 1: proxy, column 2: NR_Ports):
 48  |        0            0
 49  |        0            0
 50  |        0            0
 52  |        0            0
 53  |        0            0
```

```
  54  |        0           0
  60  |        0           0
  63  |        1           4
 176  |        1           4
 177  |        1           4
 183  |        1           4
 190  |        0           0
```

See Also

fcrFabricShow, fcrProxyDevShow, fcrRouteShow, lsanZoneShow, switchShow

fcrRouterPortCost

Displays or sets an FC Router port cost.

Synopsis

fcrrouterportcost [[*slot/*]*port*] [*cost*]

Description

Use this command to set or display the cost of the FC Router ports. You can set the cost of the link to one of two fixed values: 1000 or 10000. The option 0 sets the cost of the link to the default value based on link type (EX/VEX). The router module chooses the router port path based on the minimum cost per fabric ID (FID) connection. If multiple paths exist with the same minimum cost, the load is shared over these paths.

Every inter-fabric link (IFL) has a default cost. For an EX_Port IFL, the default cost is 1000. For a VEX_Port, the default cost is 10000. If the cost is set to 0, the link cost defaults to 1000 for an EX_Port and to 10000 for a VEX_Port.

when used without operands, this command displays the current link costs for all ports on the switch.

Notes

Before setting the cost, ensure that admin is enabled for the EX_Port/VEX_Port with **portCfgEXPort** or **portCfgVEXPort**. The cost can be set only on a disabled port.

The bandwidth of an inter-fabric link (IFL) is unrelated to its default cost. In other words, 1Gb/s, 2Gb/s, 4Gb/s, and 8Gb/s EX_Port IFLs have the same cost value of 1000 as their FC Router port.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

slot

For bladed systems only, specifies the slot number of the port whose cost is to be displayed or changed, followed by a slash (/).

port

Specifies the number of the port whose cost is to be displayed or changed. This value is relative to the slot for bladed systems. Use **switchShow** for a list of valid ports. If a port is not specified, this command displays the costs of all ports.

cost

Specifies the new cost of the link connected to the specified port. This operand is optional; if omitted, this command displays the cost of the specified port. The cost of the link can be changed only when the specified port is disabled. Valid values for cost are 0, 1000 or 10000.

Examples

To display the cost of all EX_Ports:

```
switch:admin> fcrrouterportcost
 Port            Cost
 -----------------------
 7/3             1000
 7/4             1000
 7/9             1000
 7/10            1000
 7/16            10000
 10/0            10000
```

To display the cost on an EX_Port:

```
switch:admin> fcrrouterportcost 7/10 0

switch:admin> fcrrouterportcost 7/10
Port            Cost
-----------------------
7/10            1000
```

To set the cost of an EX_Port and display the result:

```
switch:admin> fcrrouterportcost 7/10 10000
switch:admin> fcrrouterportcost 7/10
Port            Cost
-----------------------
7/10            10000
```

To set the default cost on the EX_Port:

```
switch:admin> fcrrouterportcost 7/10 0
switch:admin> fcrrouterportcost 7/10
Port            Cost
-----------------------
7/10            1000
```

See Also

switchShow, fcrRouteShow, portCfgEXPort

fcrRouteShow

Displays FC Router route information.

Synopsis

```
fcrrouteshow
```

Description

Use this command to display routes through the FC Router backbone fabric to accessible destination fabrics. An FC Router backbone fabric is the fabric that contains the E_Ports of this platform and routes inter-fabric traffic between imported fabrics, creating a meta-SAN.

There are FC Router ports that reside on the backbone fabric. These ports are known as NR_Ports. NR_Ports send and receive inter-fabric traffic. For the AP7420, there is a one-to-one relationship between an NR_Port on a backbone fabric and an EX_Port. NR_Port technology enables EX_Ports to exchange traffic across an intermediate fabric. NR_Ports are addressable entities on the backbone fabric and have port IDs relevant to the backbone fabric.

Because cascaded backbone/intermediate fabrics are currently not supported, an NR_Port provides a path to a single fabric with a single FC Router protocol cost. Multiple NR_Ports can provide paths to the same destination fabric.

"No routes found" is displayed if there is no route information available at this FC Router. There is no route information available if no EX_Ports are configured at this FC Router.

The output includes:

Destination Fabric ID

The destination fabric.

NR_Port PID

The port ID of the NR_Port. The port ID is relevant only on the backbone fabric. This NR_Port has a route to the destination fabric identified by the "Destination Fabric ID" column.

FCRP Cost

The FC Router protocol cost (for routing decisions) for this NR_Port. The FCRP cost is the same (1000) for all NR_Ports.

WWN of the Principal Switch in the Dest. Fabric

The world wide name of the principal switch in the destination fabric.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To display the route information:

```
switch:admin> fcrrouteshow
Destination  NR_Port     FCRP Cost  WWN of Principal
Fabric Id     PID                    Switch in the Dest. Fabric
----------------------------------------------------------
   4        640000        1000     10:00:00:60:69:c0:05:d1
   4        640100        1000     10:00:00:60:69:c0:05:d1
   5        640200        1000     10:00:00:60:69:c0:20:ed
   5        640300        1000     10:00:00:60:69:c0:20:ed
```

See Also

fcrFabricShow, fcrPhyDevShow, fcrProxyDevShow, lsanZoneShow, switchShow

fcrXlateConfig

Configures a translate (xlate) domain's domain ID and state of persistence for both the EX_Port-attached fabric and the backbone fabric.

Synopsis

```
fcrxlateconfig
fcrxlateconfig importedFID exportedFID preferredDomainID
fcrxlateconfig --remove | -r importedFID exportedFID
fcrxlateconfig --enable persistxd
fcrxlateconfig --disable persistxd
fcrxlateconfig --show stalexd importedFID
fcrxlateconfig --delete stalexd importedFID staleXlateDomainID
fcrxlateconfig --help
```

Description

Use this command to display a translate (xlate) domain ID or change the preferred domain ID and its state of persistence.

A translate domain is a phantom domain created by an FC Router. FC Routers emulate proxy devices representing real devices in remote fabrics. These proxy devices are emulated to be connected to translate domains. Translate domains are presented to a fabric as residing topologically behind front phantom domains (domains created by an EX_Port). In the case of backbone fabrics, translate domains are topologically behind an E_Port. In every EX_Port-attached edge fabric and backbone fabric, there can be a translate domain for every FC Router-accessible remote fabric.

During a fabric build, the translate domain requests a domain ID from the principal switch in the EX_Port-attached edge fabric. The domain ID requested is the preferred domain ID. You can set the preferred domain ID when the translate domain is not active and is persistently saved. The principal switch attempts to provide the translate domain with the requested domain ID, but it may not provide it if there are domain ID conflicts with other domains in the fabric. If the requested domain ID (such as the preferred domain ID) is unavailable, the domain ID assignment is completely at the discretion of the principal switch. The assignment domain ID is persistently stored and is used as the preferred domain ID in the future.

By default, FCR creates the translate domain for a remote fabric if a valid persistent translate domain ID is configured in the local fabric, even if no devices are imported or exported across the edge fabrics. Disabling the **persistxd** parameter prevents the xlate domain from being created. Enabling the **persistxd** parameter from a disabled state re-enables the FCR default behavior.

If the remote edge fabric becomes unreachable, the translate domains created in other edge fabrics for this remote edge fabric become stale. Use the **--show stalexd** option to identify translate domains that have become stale, and delete them in a nondisruptive manner with the **--delete stalexd** option.

When executed without operands, **fcrxlateconfig** displays for each translate domain the imported FID, the exported FID, the domain ID and the xlate WWN.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Information displayed is not related to the entire backbone. The FC Router displays only connections to an edge fabric for which there are translate domain IDs. Any changes you intend to make using this command should be issued on the switches to which the edge fabrics are directly attached. In a Virtual Fabric environment, this is the base switch.

This command is not supported on the Brocade Analytics Monitoring Platform.

Operands

This command has the following operands:

fcrxlateconfig

Sets the preferred domain ID (1-239) to *preferredDomainID* for the translate phantom domain and saves the configuration persistently. The translate domain must be inactive to set the preferred domain ID. The following operands are required:

importedFID

Specifies the fabric ID (1 through 128) of the fabric that contains the translate domain.

exportedFID

Specifies the fabric ID (1 through 128) of the remote fabric represented by this translate domain.

preferredDomainID

Specifies the preferred domain ID (1 through 239) of the translate phantom domain.

--remove | -r

Removes the preferred domain ID of the translate phantom domain. The translate domain must be inactive to remove the preferred domain ID. The following operands are required:

importedFID

Specifies the fabric ID (1 through 128) of the fabric that contains the translate domain.

exportedFID

Specifies the fabric ID (1 through 128) of the remote fabric represented by this translate domain.

preferredDomainID

Specifies the preferred domain ID (1 through 239) of the translate phantom.

--enable persistxd

> Enables translate domain persistence. When **persistxd** is enabled, the translate domain is created based on the persistent translate domain ID configuration. If a valid persistent translate domain ID is configured for a given *importedFID* and *exportedFID* pair, a translate domain for the *exportedFID* is created, even if no devices need to be imported or exported across the edge fabrics represented by *importedFID* and *exportedFID*. By default, **persistxd** is enabled.

--disable persistxd

> Disables translate domain persistence. When **persistxd** is disabled, the translate domain is not created, even if a valid persistent translate domain ID is configured for the *importedFID* and *exportedFID* pair, so long as no devices are imported or exported across the edge fabrics represented by *importedFID* and *exportedFID*. Once devices need to be imported or exported across the edge fabrics, the translate domain is created.

--show stalexd [*importedFID*]

> Displays stale translate domains associated with the specified Fabric ID (1-128). A translate domain becomes stale when the remote edge fabric for which this translate domain was created in the specified edge fabric becomes unreachable. When issued without specifying an imported FID, this command lists all stale translate domains in all edge fabrics connected to the FCR.

--delete stalexd *importedFID staleXlateDomainID*

> Deletes the specified stale translate domain from the edge fabric specified by its fabric ID. This command must be executed in the FCR that owns the stale translate domain.

Examples

> To display the translate domain configuration and the state of the **persistxd** parameter:

```
switch:admin> fcrxlateconfig

ImportedFid ExportedFid  Domain    OwnerDid              XlateWWN
    001        002        004      000001                   N/A
    001        005        003      N/A                      N/A

Persist XD state: Enabled
```

> To set the preferred domain ID of the translate domain created in fabric 2, which represents the remote fabric 3, to a value of 8:

```
switch:admin> fcrxlateconfig 2 3 8
xlate domain already configured, overwrite?(n) y
```

> To clear the preferred domain ID of the translate domain created in fabric 2, which represents remote fabric 3:

```
switch:admin> fcrxlateconfig -r 2 3
xlate domain deleted
```

> To enable translate domain persistence:

```
fcr:admin> fcrxlateconfig --enable persistxd
Persist XD is enabled
```

To disable translate domain persistence:

```
fcr:admin> fcrxlateconfig --disable persistxd
Persist XD is disabled
```

To identify and remove stale translate domains in a single backbone multiple FCR configuration:

```
fcr:admin> fcrxlateconfig --show stalexd
Imported FID      Stale XD      Owner Domain
-------------------------------------------------
    012              002             007 ( this FCR )
    013              002             001 ( other FCR )
```

To remove the stale translate domain (only the translate domain owned by the current owner can be removed; note that trailing zeros must be removed from the FID and Xlate domain ID.>):

```
fcr:admin> fcrxlateconfig --delete stalexd 12 2
Xlate domain 2 is deleted
```

See Also

portCfgEXPort, portCfgVEXPort, portDisable, portEnable, portShow

fddCfg

Manages the fabric data distribution configuration parameters.

Synopsis

```
fddcfg --showall
fddcfg --localaccept policy_list
fddcfg --localreject policy_list
fddcfg --fabwideset policy_list
```

Description

Use this command to manage the fabric data distribution configuration parameters. These parameters control the fabric-wide consistency policy.

Switches can be locally configured to allow or reject a security policy. Supported policies include the following:

SCC

Switch Connection Control policy

DCC

Device Connection Control policy

PWD

Password policy

FCS

Fabric Configuration Server policy

Auth

Fabric Element Authentication policy

IPFILTER

IP Filter policy

Automatic distribution of a fabric-wide consistency policy is limited to SCC, DCC, and FCS policies. Use the **--fabwideset** parameter to enforce these policies fabric-wide in tolerant or strict mode, In strict mode, fabric-wide enforcement of FCS consistency policy is possible in mixed fabrics. However, switches that do not support the policies ignore them.

Notes

When a policy is set to strict mode, the manual distribution of the policy is not allowed.

If FCS policy is present, a fabricwide FCS policy must be created to avoid another FCS primary creation.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--showall

Displays the accept/reject configuration of all policy sets and the fabric-wide consistency policy on the switch.

--localaccept *policy_list*

Configures the switch to accept distributions of the specified policies. The policies in *policy_list* must be separated by semicolons and enclosed in quotation marks; for example, "SCC;DCC;FCS".

--localreject *policy_list*

Configures the switch to reject distributions of the specified policies in *policy_list*. However, a database cannot be rejected if it is specified in the fabric-wide consistency policy. The policies in *policy_list* must be separated by semicolons and enclosed in quotation marks; for example, "SCC;DCC".

--fabwideset *policy_list*

Sets the fabric-wide consistency policy. A database that is set to reject distributions cannot be specified in the fabric-wide consistency policy. To set the fabric-wide consistency policy as strict, use the strictness indicator "S". To set the fabric-wide consistency policy as tolerant, omit the "S". A valid policy set should be of the form "SCC:S;DCC;FCS". To set the fabric-wide policy to NULL (default) or no fabric-wide consistency, use the policy Set "". Supported policies are Switch Connection Control (SCC), Device Connection Control (DCC), and Fabric Configuration Server (FCS). All members specified in a given policy set are automatically distributed to all participating switches in the fabric that support the policy. Refer to the DESCRIPTION section for specific exceptions. In the presence of a fabric-wide FCS consistency policy, this command can only be run from the primary FCS switch.

Examples

To display the fabric-wide consistency policy and the accept/reject configuration for all databases:

```
switch:admin> fddcfg --showall
 Local Switch Configuration for all Databases:-
 DATABASE - Accept/Reject
 ------------------------
     SCC  -   accept
     DCC  -   accept
```

```
       PWD   -    accept
       FCS   -    accept
      AUTH   -    accept
  IPFILTER   -    accept
 Fabric Wide Consistency Policy:- "SCC:S;DCC;FCS"
```

To configure the switch to accept distribution of the SCC policy set and PWD database:

```
switch:admin> fddcfg --localaccept "SCC;PWD"
Local Switch Configured to accept policies.
```

To configure this switch to reject distribution of SCC and DCC policy sets:

```
switch:admin> fddcfg --localreject "SCC;DCC"
Local Switch Configured to reject policies.
```

To set the fabric-wide consistency policy to "strict" for SCC and "tolerant" for DCC and FCS:

```
switch:admin> fddcfg --fabwideset "SCC:S;DCC;FCS"
```

See Also

        None

fdmiCacheShow

Displays abbreviated remote FDMI device information, according to remote domain ID.

Synopsis

`fdmicacheshow`

Description

Use this command to display FDMI cache information for remote domains only.

The state of each remote domain, identified by its domain ID, is shown to be unknown, known, unsupported, or error.

The revision of the switch also displays, followed by the world wide name of the switch.

For HBAs, only the HBA identifiers and registered port lists are displayed. No detailed HBA attributes are displayed. For registered ports, only port identifier and corresponding HBA are shown; no detailed port attributes are displayed.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To display the FDMI cache:

```
switch:admin> fdmicacheshow
Switch entry for domain 3
  state:   known
  version: v310
  wwn:     10:00:00:60:69:90:03:c7

  HBAs:
    10:00:00:00:c9:25:9b:96

  Ports: 1
      10:00:00:00:c9:25:9b:96

Total count of devices on the switch is 1
```

See Also

fdmiShow

fdmiShow

Displays detailed FDMI information.

Synopsis

```
fdmishow [-hexoutput]
fdmishow --help
```

Description

Use this command to display Fabric-Device Management Interface (FDMI) information for all Host Bus Adapters (HBAs) and ports.

Detailed FDMI information is displayed for local HBAs and ports. The devices from certain vendors may register the following extended Vendor-Specific attributes and the output may vary depending on the device-registered values.

- **0xF100** - Service Category

- **0xF101** - GUID

- **0xF102** - Version

- **0xF103** - Product Name

- **0xF104** - Port Info

- **0xF105** - QOS Support

- **0xF106** - Security Support

- **0xF107** - Connected Ports

- **0xF108** - Storage Array Family

- **0xF109** - Storage Array Name

- **0xF10A** - Storage Array System Model

- **0xF10B** - Storage Array OS

- **0xF10C** - Storage Array Number of Nodes

- **0xF10D** - Storage Array Nodes

Only abbreviated FDMI information is shown for HBA and ports on remote switches.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

-hexoutput

Displays raw hex data for all non-ASCII and non-WWN FDMI port attributes. This operand is optional.

--help

Displays the command usage.

Examples

To display FDMI information on a local switch:

```
switch:admin> fdmishow
Local HBA database contains:
  10:00:8c:7c:ff:01:eb:00
  Ports: 1
    10:00:8c:7c:ff:01:eb:00
      Port attributes:
        FC4 Types: FCP
        Supported Speed: 2 4 8 16 Gb/s
        Port Speed: 16 Gb/s
        Max Frame Size: 2112 bytes
        Device Name: bfa
        Host Name: X3650050014
        Node Name: 20:00:8c:7c:ff:01:eb:00
        Port Name: 10:00:8c:7c:ff:01:eb:00
        Port Type: N_PORT (0x1)
        Port Symb Name: port2
        Class of Service: 3
        Fabric Name: 10:00:00:05:1e:e5:e8:00
        FC4 Active Type: FCP
        Port State: 0x5
        Discovered Ports: 0x2
        Port Identifier: 0x030200
  HBA attributes:
    Node Name: 20:00:00:90:fa:02:4e:91
    Manufacturer: Emulex Corporation
    Serial Number: FC31263400
    Model: LPe16002B-M6
    Model Description: Emulex LPe16002B-M6 PCIe 2-port 16Gb Fibre
Channel Adapter
    Hardware Version: 0000000B
    Driver Version: 11.2.124.0
    Option ROM Version: 11.2.156.27
    Firmware Version: 11.2.156.27
    OS Name and Version: Windows 2008 R2
    Max CT Payload Length: 524288 words
    Symbolic Name: Emulex LPe16002B-M6 FV11.2.156.27 DV11.2.124.0
HN:F3V1137 OS:Windows 2008 R2
    Number of Ports: 1
    Fabric Name: 10:00:c4:f5:7c:00:cc:f0
    Bios Version: 11.2.156.27
```

```
        Vendor Identifier: Emulex


Local Port database contains:
  10:00:8c:7c:ff:01:eb:00


Remote HBA database contains:
  10:00:00:05:1e:ea:05:fa
  Ports: 1
    10:00:00:05:1e:ea:05:fa


Remote Port database contains:
  10:00:00:05:1e:ea:05:fa
```

To display FDMI information in raw hex format (for non-ASCII and non-WWN FDMI port attributes) on a local switch:

```
switch:admin> fdmishow -hexoutput
Local HBA database contains:
  10:00:8c:7c:ff:01:eb:00
  Ports: 1
    10:00:8c:7c:ff:01:eb:00
      Port attributes:
        FC4 Types:
0x000001000000000000000000000000000000000000000000000000000000000
        Supported Speed: 0x0000003a
        Port Speed: 0x00000020
        Max Frame Size: 0x00000840
        Device Name: bfa
        Host Name: X3650050014
        Node Name: 20:00:8c:7c:ff:01:eb:00
        Port Name: 10:00:8c:7c:ff:01:eb:00
        Port Type: 0x1
        Port Symb Name: port2
        Class of Service: 0x08000000
        Fabric Name: 10:00:00:05:1e:e5:e8:00
        FC4 Active Type:
0x000001000000000000000000000000000000000000000000000000000000000
        Port State: 0x00000005
        Discovered Ports: 0x00000002
        Port Identifier: 0x00030200
  HBA attributes:
    Node Name: 20:00:00:90:fa:02:4e:91
    Manufacturer: Emulex Corporation
    Serial Number: FC31263400
    Model: LPe16002B-M6
    Model Description: Emulex LPe16002B-M6 PCIe 2-port 16Gb Fibre
Channel Adapter
    Hardware Version: 0000000B
    Driver Version: 11.2.124.0
    Option ROM Version: 11.2.156.27
    Firmware Version: 11.2.156.27
    OS Name and Version: Windows 2008 R2
    Max CT Payload Length: 0x00080000
```

```
      Symbolic Name: Emulex LPe16002B-M6 FV11.2.156.27 DV11.2.124.0
HN:F3V1137 OS:Windows 2008 R2
    Number of Ports: 1
    Fabric Name: 10:00:c4:f5:7c:00:cc:f0
    Bios Version: 11.2.156.27
    Vendor Identifier: Emulex

Local Port database contains:
  10:00:8c:7c:ff:01:eb:00

Remote HBA database contains:
  10:00:00:05:1e:ea:05:fa
  Ports: 1
    10:00:00:05:1e:ea:05:fa

Remote Port database contains:
  10:00:00:05:1e:ea:05:fa
```

See Also

fdmiCacheShow

femDump

Collects limited debug information to a remote directory through FTP, SFTP, or SCP. This command is a minimal version of **supportsave** command.

Synopsis

> **femdump** [**-u** *user_name* **-p** *password* **-h** *host_ip*
>   **-c -d** *remote_dir* **-l** *protocol*]

Description

Use this command to collect limited debug information to a remote directory through FTP or SCP. This command is a minimal version of a **supportsave** command.

The files generated by this command are compressed before being sent off the switch. The core files and panic dumps remain on the switch after the command is run. The FFDC data are removed after the command has finished.

If there are blade processor (BP) blades installed on the switch, a support file (a tar.gz file) is generated from each slot.

This command accepts IPv4 and IPv6 addresses. If the configured IP address is in IPv6 format, the RAS auto-file transfer and event notification to syslog will not work in the case where the Fabric OS version is downgraded. You must reconfigure auto-file transfer and syslog with IPv4 IP addresses.

In a Virtual Fabric environment, the command saves all chassis-based information and iterates through the defined switch-based information for all logical switches. Chassis permissions are required to execute this command.

Note that quotes should be used around path entries to ensure proper handling of special shell characters.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

If you use anonymous FTP to run **femDump** on a chassis with multiple AP blades, configure the FTP Windows server to allow unlimited anonymous users.

Operands

This command has the following operands:

-u *user_name*

> Specifies the user name for the FTP, SCP, or SFTP server. This operand is optional; if omitted, anonymous FTP is used.

-p *password*

> Specifies the password for the FTP, SCP, or SFTP server. If special characters are used in the *password*, the *password* must be enclosed in double quotes. This operand is optional with FTP; if omitted, anonymous FTP is used.

-h *host_ip*

> Specifies the IPv4 or IPv6 address for the remote server.

-c

> Uses the FTP, SCP, or SFTP parameters saved by the supportFtp command. This operand is optional; if omitted, specify the FTP, SCP, or SFTP parameters through command line options or interactively. This option is same as like in **supportsave** command.

-d *remote_dir*

> Specifies the remote directory to which the file is to be transferred.

-l *protocol*

> Specifies the transfer protocol. Valid values are File Transfer Protocol (FTP), Secure Copy (SCP), or Secure File Transfer Protocol (SFTP).

> If you plan to use SCP to transfer files, it is important to test the command prior to its use with various SCP-mode services. Because the **femDump** command makes several access requests to copy files, it is important that the SCP-mode service be configured so that passwords are not required for each attempted transfer. Failure to configure the service correctly may result in significant delays in obtaining transferred output from the **femDump** command.

> When using SCP, **femDump** may create a directory if it does not already exist and the parent directory has the appropriate permissions. Use of FTP requires the directory to exist on the remote server.

Examples

> To collect limited debug information to a remote directory through SCP:

```
switch:admin> femdump  -u admin -h 10.70.4.104 -d /temp/support -l scp
Password:
Saving support information for switch:SW_178, module:F_SSHOW_ASICDB...
Saving support information for switch:SW_178, module:F_SSHOW_FABRIC...
Saving support information for switch:SW_178, module:F_SSHOW_SYS...
Saving support information for switch:SW_178, module:F_SSHOW_PORT...
Saving support information for switch:SW_178,
module:F_SSHOW_SERVICE...
Saving support information for switch:SW_178,
module:F_SSHOW_ISWITCH...
Saving support information for switch:SW_178, module:F_C3REGDUMP...
Saving support information for switch:SW_178, module:F_C2REGDUMP...
```

```
Saving support information for switch:SW_178, module:F_C1REGDUMP...
Saving support information for switch:SW_178, module:F_PBREGDUMP...
Saving support information for switch:SW_178, module:F_BLSREGDUMP...

SupportSave completed.
```

See Also

supportSave, supportShow, supportFtp

ficonCfg

Configures the specified FICON database.

Synopsis

```
ficoncfg --set database port
ficoncfg --reset database
ficoncfg --help
```

Description

Use this command to configure a FICON database on a specified port. Refer to **ficonShow** for a description of the database content.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

port

> Specifies the port to be configured. You can specify the port by its port index number or by a hexadecimal number that contains the Area field (middle byte) of the three-byte Fibre Channel Port Address. Use **switchShow** for a listing of valid port index numbers.

--set

> Sets the configuration entry.

--reset

> Resets the configuration entry to its default value.

database

> Specifies the name of the FICON database. The only database currently supported is the following:

LIRR

> Devices registered to receive link incident reports.

Examples

To set the LIRR database on a port using a decimal index number:

```
switch:user> ficoncfg --set LIRR 27
```

To reset the LIRR

```
switch:user> ficoncfg --reset LIRR
```

To set the LIRR database using a hexadecimal index number that contains the Area field (middle byte) of the three-byte Fibre Channel Port Address:

```
switch:user> ficoncfg --set LIRR 0x1b
switch:user> ficonshow LIRR
The Local LIRR database has 0 entries.

Current LIRR device port number: 27 (0x1b)
```

See Also

ficonHelp, ficonShow

ficonClear

Clears the records from the specified FICON database.

Synopsis

```
ficonclear database
```

Description

Use this command to remove records from the local FICON database. The command effect depends on the specified database.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operand:

database

Specifies the name of the FICON database. The databases include the following:

RLIR

Remove all entries from the link incidents database including implicit link incidents (ILIR).

RNID

Remove all the "not current" entries from the device node identification database (the entries are for devices that were previously connected but are no longer online). Note that "current" entries are not removed from the RNID database.

Examples

To clear the RLIR database:

```
switch:user> ficonclear RLIR
successfully clear local RLIR Database.
```

To clear the RNID database:

```
switch:user> ficonclear RNID
successfully clear not current
 entries from local RNID Database.
```

See Also

ficonHelp, ficonShow

ficonCupSet

Sets FICON-CUP parameters for a switch.

Synopsis

```
ficoncupset fmsmode enable | disable | reset
ficoncupset modereg bitname 0 | 1
ficoncupset MIHPTO seconds
ficoncupset CRP PID CHID
ficoncupset UALERT_type enable | disable
```

Description

Use this command to set FICON-CUP (Control Unit Port) parameters for a switch. All parameters can be set while the switch is online. Changes made by this command take effect immediately. A reboot is not required.

Use **ficonCupShow** to display current settings.

Notes

A FICON License is required to enable FMSMODE and to manage ports with FICON CUP. Without a license, FICON CUP traffic will not be allowed.

High Integrity Fabric (HIF) mode must be enabled before FMSMODE is enabled. When FMSMODE is enabled, port names are truncated to 24 characters to be FICON compliant, and a 24-character limit is imposed on all newly created port names.

Refer to the *Brocade Fabric OS Administration Guide* for information on PID formats to enable FICON Management Server (FMS) mode.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

fmsmode

Configures the FICON Management Server (FMS) mode for the switch. Specify one of the following modes:

enable

Enables the FICON Management Server mode. When you enable the switch, you must wait until all ports have come online before enabling fmsmode.

disable

Disables the FICON Management Server mode.

reset

Resets the CUP to a neutral execution state. This command does not modify any other configuration state. This command should NOT be used unless explicitly instructed to do so by your support provider. It is potentially a disruptive command and intended to be used to reset abnormal protocol state conditions.

modereg

Set a bit in the FICON-CUP mode register. The following operands are required:

bitname **0 | 1**

Specifies a given bit value to be (1) set or not set (0). Valid values for *bitname* are

POSC

Programmed offline state control

ASM

Active=saved mode

DCAM

Director clock alert mode

ACP

Alternate control prohibited

HCP

Host control prohibited

MIHPTO

Sets the missing interrupt handler primary timeout (MIHPTO) value for the CUP. The following operand is required:

seconds

Specifies the timeout value in seconds. Provide a decimal value in the range between 15 and 600 seconds. The default timeout value is 180 seconds. If a value greater than 63 seconds is specified, the timeout value is rounded down to the closest value divisible by 10. For example, an MIHPTO timeout value of 86 defaults to 80.

CRP *PID CHID*

Sets the current reporting path (CRP). The reporting path is a CUP mechanism for sending FRU-failure reports to a FICON logical path via FICON protocol. The logical path between the PID and the CHID must exist and be in operational state for this command

to succeed. Use ficonCupShow with the LP option to display the logical paths on the switch. The following operands are required:

PID

Specifies the Port identifier, which is a three-byte Fibre Channel Port Address.

CHID

Specifies the Channel ID (CHID). The CHID is the Logical Partition (LPAR) identifier supplied as part of the FICON protocol header. The CHID is a 1-byte value in hexadecimal format. The first nibble indicating the Channel Subsystem identifier (a value between 0 and 3) and the second the LPAR within that CSS (a value between 0 and F).

UALERT_type **enable | disable**

Enables or disables the specified unsolicited alert types and displays the status of the unsolicited alerts. Valid values for *UALERT_type* include the following:

- **UALERT_HSC** - Indicates HSC alert type

- **UALERT_FRU** - Indicates FRU alert type

- **UALERT_INVATT** - Indicates invalid attach alert type

- **UALERT_ALL** - Indicates all alert types (HSC, FRU, and Invalid attach)

Examples

To enable FMS mode for the switch:

```
switch:admin> ficoncupset fmsmode enable
fmsmode for the switch is now Enabled
```

To set the ASM bit in the mode register for the switch:

```
switch:admin> ficoncupset modereg ASM 1
Active=Saved Mode bit is set to 1
```

To set the MIHPTO value to 60 seconds:

```
switch:admin> ficoncupset MIHPTO 60
 MIHPTO has been changed to 60 seconds
```

To set the current reporting path:

```
switch:admin> ficoncupset CRP 082300 1A
```

To display the current reporting path:

```
switch:admin> ficoncupshow LP
FICON CUP Logical Paths for CUP 0x08FE00

        LP      Reporting
PID     CHID    State       Path
------  ----    ----        ------
082300  1A      Oper***     Curr
082300  1B      Oper
```

```
082300  1C      Oper
082400  1A      Reset
082400  1B      Reset
612400  1E      Reset        Prim
612400  1F      Reset
```

To reset the FMS mode for a switch:

```
switch:admin> ficoncupset fmsmode reset
FMS_001(I) - FMSMODE RESET completed - FMSMODE(Disabled)

Conditions prior to reset:

    All CUP states nominal, no conditions reset

  ----- END DISPLAY of FMSMODE RESET ------
```

To disable the alert type "UALERT_HSC":

```
switch:admin> ficoncupset UALERT_HSC disable
FMS_001(I) - Processing - set UALERT_Mode
FMS_001(I) - Disabled Alerts(HSC )
FMS_001(I) - Enabled Alerts(FRU INV_ATT )
```

See Also

ficonCupShow

ficonCupShow

Displays FICON-CUP parameters for a switch.

Synopsis

```
ficoncupshow fmsmode
ficoncupshow modereg [bitname]
ficoncupshow MIHPTO
ficoncupshow DD_LOG
ficoncupshow diag_info
ficoncupshow hlthchk_log
ficoncupshow LP
ficoncupshow UALERT_MODE
```

Description

Use this command to display FICON-CUP (Control Unit Port) parameters for a switch.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

fmsmode

Display the FICON Management Server (FMS) mode for the switch.

modereg

Display the FICON-CUP mode register. If no operand is specified, all mode register bit settings are displayed. If a mode register bit name is specified, then only the value of that bit is displayed. A value of 1 indicates that a given mode register bit is set, and 0 indicates that it is not set.

The following operand is optional:

bitname

Displays the specified mode register bit as either set (1) or not set (0). Valid values for *bitname* include the following:

POSC

Programmed offline state control

UAM

User alert mode

ASM

Active=saved mode

DCAM

Director clock alert mode

ACP

Alternate control prohibited

HCP

Host control prohibited

MIHPTO

Displays the FICON-CUP missing interrupt handler primary timeout (MIHPTO) value in seconds.

DD_LOG

Displays the latest Director Diagnostics Log.

diag_info

Displays diagnostic information for the logical switch such as whether Diagnostic Interval has been set for CUP Diagnostics (if so, then Statistics Sampling is running), along with additional information about Statistics Sampling by the CUP, the detected CUP Diagnostic capabilities and settings for other switches in the fabric..

hlthchk_log

Displays the HealthCheck Logs for the logical switch. It displays Sense Data returned to the FICON host for Asynchronous Error Reporting events generated by the CUP for any MAPS generated event that includes the FMS action and triggers notification to the FICON host.

LP

Displays the logical paths on the switch. For each entry, the command displays the port identifier (PID), the LPAR identifier (CHID), reporting state (operational or reset (=nonoperational)), and reporting path state (current, primary, or alternate).

UALERT_MODE

Displays the status of the unsolicited alerts such as FRU, invalid attach, and HSC as either enabled or disabled.

Examples

To display the FMS mode for the switch:

```
switch:user> ficoncupshow fmsmode
fmsmode for the switch: Enabled
```

To display the mode register for the switch:

```
switch:user> ficoncupshow modereg
 POSC  UAM  ASM  DCAM  ACP  HCP
 ------------------------------
    1    0    1    1    1    0
```

To display the ASM bit in the mode register for the switch:

```
switch:user> ficoncupshow modereg ASM
 ASM
 ---
   1
```

To display the MIHPTO value for the CUP:

```
switch:user> ficoncupshow MIHPTO
 MIHPTO for the CUP: 60 seconds
```

To display the logical paths for the switch:

```
switch:user> ficoncupshow LP
 FICON CUP Logical Paths for CUP 0x08FE00
         LP        Operational  Reporting
 PID     CHID      State        Path State
 ------  ----      ----         ------
 082300  1A        Oper***      Current
 082300  1B        Oper
 082300  1C        Oper
 082400  1A        Reset
 082400  1B        Reset
 612400  1E        Reset        Primary
 612400  1F        Reset
```

To display the status of the unsolicited alerts:

```
switch:user> ficoncupshow UALERT_MODE
FMS_001(I) - Disabled Alerts(HSC)
FMS_001(I) - Enabled Alerts(FRU INV_ATT)
```

See Also

ficonCupSet, ficonHelp

ficonHelp

Displays a list of FICON support commands.

Synopsis

```
ficonhelp
```

Description

Use this command to display a list of FICON support commands with descriptions.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To display a list of FICON commands:

```
switch:admin> ficonhelp
ficoncfg        Manage FICON configuration
ficonclear      Clears contents of the specified FICON
                management database
ficoncupset     Sets FICON-CUP parameters for a switch
ficoncupshow    Displays FICON-CUP parameters for a switch
ficonhelp       Displays FICON commands
ficonshow       Displays contents of the specified FICON
                management database
```

See Also

None

ficonShow

Displays the contents of the specified FICON database.

Synopsis

ficonshow *database* [**fabric** | **table** | **port** *port_index*]

Description

Use this command to display the contents of a FICON database. The **ficonShow** database operand is the name of the database to display. If the fabric operand is absent, the command displays the members of the named database that are local to the switch on which the command was issued. If the fabric operand is present, it must be entered exactly as shown, and this specifies that all members are displayed, both local and remote.

The following information may be displayed, depending on which database you enter and which operands you use with the command:

Domain

Displays the domain ID.

Fabric WWN

Displays the fabric WWN.

Flag

Indicates if the node is valid, not valid, or not current. Flag values are as follows:

0x00

Indicates the node ID of the storage port is valid.

0x10

Indicates the node ID of the channel port is valid.

0x20

Indicates the node ID of the storage port is not current.

0x30

Indicates the node ID of the channel port is not current.

0x40

Indicates the node ID of the storage port is not valid.

0x50

Indicates the node ID of the channel port is not valid.

Fmt

Displays the record-registration format.

FRU Failure Description

Indicates the FRU failure type as one of the following:

WWN card [*unit number*]

The WWN card

Power Supply [*unit number*]

The Power Supply card

Hardware Slot [*unit number*]

The Hardware Slot

Blower [*unit number*]

The Blower

FRU Part Number

Displays the FRU part number.

FRU Serial Number

Displays the FRU serial number.

Incident Count

Displays the incident count. This number increases by 1 for each incident within the individual switch.

Link Incident Description

Same as Link Incident Type.

Link Incident Type

Indicates the link incident type as one of the following:

- Bit-error-rate threshold exceeded

- Loss of signal or synchronization

- NOS recognized

- • Primitive sequence timeout

- • Invalid primitive sequence for port state

Listener PID

Same as PID.

Listener Port Type

Same as Port Type.

Listener Port WWN

Displays the channel HBA port world wide name.

Listener Type

Indicates the listener type as follows:

Conditional

This port receives a link incident record if no other recipients from the established registration list have been chosen.

Unconditional

This port is always chosen as a recipient of a link incident record.

Manufacturer

Displays the manufacturer name or code.

Model Number

Displays the model number.

Node Parameters

Same as Parameters.

Parameters

Displays the node type for the switch in three bytes, 0xAABBCC:

Byte AA 0x20

FC-SB-2 and updates

Byte BB 0x0a

Switch

Byte CC 0x00

Port number. It is dynamically assigned whenever a link incident occurs.

Parm

Displays the incident node parameters type in three bytes, 0xAABBCC:

Byte AA

Possible values include the following:

0x00

Reserved.

0x20

FC-SB-2 and updates.

0x40

Other FC-4s including FCP and updates.

0x60

FC-SB-2 and updates and other FC-4s including FCP and updates.

0x80

FC-4 support not specified.

0xa0

Reserved.

0xc0

Reserved.

0xe0

Vendor-specific.

Byte BB

Possible values include the following:

0x00

Unspecified class.

0x01

Direct access storage device, if it is a storage port; otherwise, not channel-to-channel capable.

0x02

Magnetic tape, if it is a storage port; otherwise, a reserved field for a channel port.

0x03

Input unit record, if it is a storage port; otherwise, a reserved field for a channel port.

0x04

Output unit, if it is a storage port; otherwise, a reserved field for a channel port.

0x05

Reserved field for a channel port.

0x06

Controller, if it is a storage port; otherwise, a reserved field for a channel port.

0x07

Terminal - Full screen if it is a storage port; otherwise, a reserved field for a channel port.

0x08

Terminal - Line mode if it is a storage port; otherwise, an emulated control unit support only.

0x09

Reserved.

0x10

Switch, if it is a switch device; otherwise, reserved.

0x0b-0xff

Reserved.

Byte CC

Possible values include the following:

0x00

If storage CU port has registered with the switch.

0xID

> CHIPID if channel port has registered with the switch.

0xPN

> If switch has registered with the channel, PN represents the FL port number.

Part Number

> Displays the switch chassis part number.

PID

> Displays the 24-bit Fibre Channel port address in 0xDDAAPP format. DD is Domain ID.
> AA is Area ID. PP is AL_PA ID.

Plant of Manufacture

> Displays the manufacturer plant name or code.

Port

> Physical port number.

Port Status

> Displays the status of the port as one of the following:
>
> - Link degraded but operational
> - Link not operational

Port Type

> Displays the port type as one of the following:

U

> Unknown

N

> N_Port

NL

> NL_Port

Protocol

> Displays whether the traffic is using FICON or FCP.

Registered Node WWN

Displays the device's node world wide name associated with the device HBA.

Registered Port WWN

Displays the device's channel or storage CU port world wide name associated with the device HBA.

Sequence Number

Displays the sequence number of the self-describing node.

Serial Number

Displays the switch serial number.

Switch node WWN

Displays the switch node world wide name.

Switch Port WWN

Displays the switch port world wide name.

Switch WWN

Displays the switch WWN.

Tag

Displays the physical identifier for the self-describing node interface.

TS Format

Displays the Time Server format.

Time Stamp

Displays the timestamp, expressed in date format.

Type

Same as Port Type.

Type Number

Displays the type number of the self-describing node. It also describes the machine type.

Notes

      The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

      This command has the following operands:

database

      Specify the database to display. This operand is required. Valid values include the following

RNID

      Device node identification.

LIRR

      Devices registered to receive link incident reports. Entries can have the following flags:

-C*

      A user-configured LIRR entry defined as current (set with the **ficonCfg** command).

-C

      A LIRR entry defined by the management server demon as current based on order.

-S

      A LIRR entry defined by the management server demon as secondary.

SwitchRNID

      Switch node identification.

RLIR

      Link incident reports.

ILIR

      Implicit link incident reports.

fabric

      Displays FICON database information for the entire fabric. This operand is optional; if omitted, only local members of the named database are displayed.

table

> Displays RNID data in table format.

port

> Displays RNID data for the specified port.

port_index

> Specifies the port index number in decimal or the area field (middle byte) of the Fibre
> Channel Address (PID) in hexadecimal format.

Examples

> To display the local RNID database:

```
switch:admin> ficonshow RNID
{
 {Fmt Type PID Registered Port WWN     Registered  Node WWN \
0x18 N 502b00 50:05:07:64:01:00:15:8d 50:05:07:64:00:c1:69:ca \
      flag Parm
      0x10 0x200110
 Type number:          002064
 Model number:         101
 Manufacturer:         IBM
 Plant of Manufacture: 02
 Sequence Number:      0000000169CA
 tag:                  102b
 }
 {Fmt Type PID Registered Port WWN  Registered  Node WWN \
  0x18 N 502e00 50:05:07:64:01:40:0f:ca 50:05:07:64:00:c1:69:ca \
      flag Parm
      0x10 0x200105
 Type number:          002064
  Model number:        101
  Manufacturer:        IBM
  Plant of Manufacture: 02
  Sequence Number:     0000000169CA
  tag:                 052e
 }
}
```

> To display the local RNID database in tabular format:

```
switch:admin> ficonshow RNID table
{
 Fmt  Type PID     Registered Port WWN     Registered  Node WWN
 0x18 N    252500 50:05:07:60:28:bf:42:cf 50:05:07:64:00:cd:01:b6
 0x18 N    255800 50:05:07:60:28:bf:3e:98 50:05:07:64:00:cd:01:b6
 0x18 N    255A00 50:05:07:60:28:bf:2c:9e 50:05:07:64:00:cd:01:b6
 0x18 N    255B00 50:05:07:60:28:bf:3f:0b 50:05:07:64:00:cd:01:b6
 0x18 N    255C00 50:05:07:60:28:bf:3f:0a 50:05:07:64:00:cd:01:b6
 0x18 N    255D00 50:05:07:60:28:bf:2c:9f 50:05:07:64:00:cd:01:b6
```

```
0x18 N    255E00 50:05:07:60:28:bf:18:63 50:05:07:64:00:cd:01:b6
0x18 N    255F00 50:05:07:60:28:bf:18:64 50:05:07:64:00:cd:01:b6
0x18 E    258600 20:86:00:05:33:0d:b7:05 10:00:00:05:33:0d:b7:05
0x18 E    258700 20:87:00:05:33:0d:b7:05 10:00:00:05:33:0d:b7:05
0x18 E    25F600 20:f6:00:05:33:0d:b7:05 10:00:00:05:33:0d:b7:05
                 flag Parm      Type   Mod Manf Plant Sequence#     Tag
                 0x10 0x3101DB 002817 M15 IBM  02    0000000D01B6  40DB
                 0x10 0x310138 002817 M15 IBM  02    0000000D01B6  4038
                 0x10 0x3101D4 002817 M15 IBM  02    0000000D01B6  40D4
                 0x10 0x3101D7 002817 M15 IBM  02    0000000D01B6  40D7
                 0x10 0x3101D6 002817 M15 IBM  02    0000000D01B6  40D6
                 0x10 0x3101D5 002817 M15 IBM  02    0000000D01B6  40D5
                 0x10 0x3101D8 002817 M15 IBM  02    0000000D01B6  40D8
                 0x10 0x3101D9 002817 M15 IBM  02    0000000D01B6  40D9
                 0x00 0x200A00 SLKWRM DCX BRD  CA    5FT00X39C19A  22FF
                 0x00 0x200A00 SLKWRM DCX BRD  CA    5FT00X39C19A  22FF
                 0x00 0x200A00 SLKWRM DCX BRD  CA    5FT00X39C19A  22FF
}
11 valid entries, 0 not current entries
The Local RNID database has 11 entries.
```

To display RNID data for the specified port:

```
switch:admin> ficonshow RNID port 0x08
{Fmt  Type PID    Registered Port WWN    Registered  Node WWN  \
  0x18 E    010800 20:08:00:05:1e:57:b1:86 10:00:00:05:1e:57:b1:86\
                                    flag Parm
                                    0x00 0x200a00
 Type number:          BROCAD
 Model number:         510
 Manufacturer:         BRD
 Plant of Manufacture: CA
 Sequence Number:      0ALM0632D038
 tag:                  03ff
}
```

To display the local LIRR database:

```
switch:admin> ficonshow LIRR
{Fmt  Type PID    Listener Port WWN
 0x18 N    255800 50:05:07:60:28:bf:3e:98 \
 0x18 N    255a00 50:05:07:60:28:bf:2c:9e \
 0x18 N    255b00 50:05:07:60:28:bf:3f:0b \
 0x18 N    255c00 50:05:07:60:28:bf:3f:0a \
 0x18 N    255d00 50:05:07:60:28:bf:2c:9f \
 0x18 N    255e00 50:05:07:60:28:bf:18:63 \
 0x18 N    255f00 50:05:07:60:28:bf:18:64 \

Switch Port WWN         Listener Type
20:58:00:05:33:0d:b7:05 Conditional-S
20:5a:00:05:33:0d:b7:05 Conditional
20:5b:00:05:33:0d:b7:05 Conditional
20:5c:00:05:33:0d:b7:05 Conditional
20:5d:00:05:33:0d:b7:05 Conditional
```

```
20:5e:00:05:33:0d:b7:05 Conditional
20:5f:00:05:33:0d:b7:05 Conditional-C*
}
The Local LIRR database has 7 entries.

Current LIRR device port number: 95 (0x5f)
```

To display the local and remote LIRR database:

```
switch:admin> ficonshow LIRR fabric
{Fmt  Type PID     Listener Port WWN        \
 0x18 N    502d00 50:05:07:64:01:40:11:79 \
 0x18 N    510d00 50:05:07:64:01:00:15:8c \
 0x18 N    510f00 50:05:07:64:01:00:14:62 \

Switch Port WWN         Listener Type
20:2d:00:60:69:80:1e:4e Conditional-C
20:0d:00:60:69:80:1e:4f Conditional-S
 20:0f:00:60:69:80:1e:4f Conditional
}
The LIRR database has 3 entries.

Current LIRR device port number: Not configured
```

To display the local Switch RNID database:

```
switch:admin> ficonshow switchrnid
{
 {Switch WWN                       flag  Parm
  10:00:00:60:69:80:1e:4e         0x00   0x200a00
  Type number:         SLKWRM
  Model number:        48K
  Manufacturer:        BRD
  Plant of Manufacture: CA
  Sequence Number:     0RB030000082
  tag:                 00ff
 }
}
The Local switch RNID database has 1 entries.
```

To display the local RLIR database:

```
switch:user> ficonshow RLIR

{
 {Fmt Type PID  Port Incident Count TS Format   Time Stamp
  0x18 N   502e00 46      1 Time server Mon Jan 13 04:29:33 2003
  Port Status:         Link not operational
  Link Failure Type:   Loss of signal or synchronization

  Registered Port WWN Registered Node WWN  Flag  Node Parameters
  50:05:07:64:01:40:0f:ca 50:05:07:64:00:c1:69:ca 0x50 0x200105
  Type Number:         002064
  Model Number:        101
  Manufacturer:        IBM
  Plant of Manufacture: 02
```

```
    Sequence Number:        0000000169CA
    tag:                    2e00

    Switch Port WWN     Switch Node WWN      Flag  Node Parameters
    20:2e:00:60:69:80:1e:4e 10:00:00:60:69:80:1e:4e 0x00 0x200a2e
    Switch Part Number:   060-0001501-05
    Switch Serial Number: 0FT02X801E4E
    Domain:                 20480
  }
}
The local RLIR database has 1 entry.
```

See Also

ficonClear

fipsCfg

Configures FIPS (Federal Information Processing Standards) mode.

Synopsis

```
fipscfg --enable [fipsinside[-9.xx]|fips|
        simulate|selftests|bootprom|dh]
        [-nowarn] [-dp] [enable | disable]
fipscfg --disable [fipsinside|simulate|selftests|
        bootprom|dh] [-nowarn]
        [-dp] [enable | disable]
fipscfg --zeroize [-nowarn] [-dp]
fipscfg --show
fipscfg --verify fips [-dp]
```

Description

Use this command to configure FIPS mode on the switch. In this mode, only FIPS-compliant algorithms are allowed. As part of FIPS 140-2 level-2 compliance, passwords, shared secrets and the private keys used in SSL/TLS, system login, etc. Power-up self tests are executed when the switch is powered on to check for the consistency of the algorithms implemented on the switch.

This command prompts for confirmation before FIPS configuration changes take effect. Specifying no cancels the operation. The **-nowarn** option overrides the prompting.

Notes

It is strongly recommended to block certain services and functions, such as FTP, HTTP, remote procedure calls (RPC), root account, boot prom access, etc., before the systems enter FIPS Inside mode.

Refer to the *Brocade Fabric OS FIPS Cryptographic Module 8.2 User Guide* for information on configuring your system for FIPS 140-2 level-1 compliance.

FIPS mode cannot be modified through **configDownload**.

FIPS is not supported on all platforms. For FIPS-compliant hardware, refer to the *Brocade Fabric OS Administration Guide*.

In a Virtual Fabric environment, FIPS is treated as chassis-wide configuration and applies to all logical switches in the chassis. Chassis permissions are required to configure FIPS.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--disable selftests [-nowarn]

Disables selftests mode.

--enable [fipsinside[-9.xx]|fips|selftests] [-nowarn]

Enables FIPS inside or FIPS or selftests mode. Selftests must be enabled before FIPS mode is enabled.

The **--enable fips** command is not supported.

--disable fipsinside

Disables FIPS inside.

--zeroize [-nowarn] [-dp]

Erases all passwords, shared secrets, private keys, etc. in the system. Specify the **-dp** option to zeroize both CP and dual-CP.

--show

Displays the current FIPS configuration.

--verify fips [-dp]

Scans the prerequisites for enabling FIPS and print the failure/success cases. Specify the **-dp** option to verify both CP and dual-CP. This command is not supported.

--disable | --enable bootprom [-nowarn]

Disables or enables the Boot Programmable Read-Only Memory (Boot PROM) on the switch. Boot PROM access is blocked in FIPS mode. Disabling Boot PROM requires root permission. Enabling Boot PROM does not require root permission.

--disable | --enable dh [-nowarn]

Removes or configures all the Diffie hellman specific SSH configurations on both the SSH server and client configuration, and restarts the SSH server. This command is supported only in FIPS mode

--disable | --enable selftests [-dp] [enable | disable]

Disables or enables the selftests mode on dual-CP or both dual-CP and CP. Specify the **-dp enable** option to enable or disable selftests on both CP and dual-CP. Specify the **-dp disable** option to enable or disable selftests on DP only. Ignore the **-dp** option to enable or disable selftests on the CP only.

--disable | --enable simulate [-nowarn]

This option is not supported on the firmware running Fabric OS v8.2.0 or later.

--help

Prints command usage.

Examples

To display the current FIPS configuration:

```
switch:admin> fipscfg --show
FIPS mode is : Disabled
FIPS Inside is : Disabled
FIPS Selftests mode/status is : Disabled/None
diffie-hellman-group-exchange-sha256 is : Disabled
```

To enable selftests:

```
switch admin> fipscfg --enable selftests
You are enabling selftests.
Do you want to continue? (yes, y, no, n) [no] : yes
FIPS Selftests mode/status has been set to :     Enabled/None
```

To verify FIPS prerequisites:

```
switch:admin> fipscfg --verify fips
FIPS verify is not supported
```

To enable FIPS after prerequisites have been met:

```
switch:admin> fipscfg --enable fips
FIPS Mode/Simulate is not supported
```

To back out of a zeroizing operation:

```
switch:admin> fipscfg --zeroize
You are Zeroizing FIPS.
Do you want to continue? (yes, y, no, n) [no]: no
Operation cancelled.

switch:admin> fipscfg --zeroize
You are Zeroizing FIPS.
Do you want to continue? (yes, y, no, n) [no]: yes

Executing 'secauthsecret --remove -all':

This command deletes database of DH-CHAP secret keys.\
   If a fabric requires authentication, deleting this \
   database may cause switch to segment from the fabric.

Do want to remove secret key database? \
    (yes, y, no, n): [no] Deleting secret key database... Done.

Disabling DHCHAP/FCAP auth ports after zeroization
Successfully disabled DHCHAP/FCAP authenticated port(s)
Zeroizing - Executing 'seccertmgmt delete -all default -f'
Removing All FCAP Keys/Certificates
Removing all Radius Keys/Certificates
Removing all LDAP Keys/Certificates
Removing all Syslog-ng Keys/Certificates
Removing all HTTPS Keys/Certificates
Removing all Management IP Certificates
```

```
Executing 'passwddefault':
Warning! All user(s) and password configuration \
      will be reset to factory default.
      Do you want to continue? [y/n] :
Password policies are already set to default.
All account passwords have been successfully \
      set to factory default.
Zeroizing Radius configuration:
Authentication mode already set to local switch database.
RADIUS configuration does not exist.
LDAP configuration does not exist.
TACACS+ configuration does not exist.
Zeroizing IPSec static SA configuration.
Zeroizing SSH key.
Enter user name for whom ssh public key is to be \
deleted or "all" for all users:WARNING: It deletes \
all the ssh public keys for user.
Do you want to proceed(yes, y, no, n)[no]?
ssh public keys associated to all users are deleted.
private key doesn't exist.
Zeroizing SSH Known Hosts.
Zeroizing SNMP Keys:
Zeroize core files in Local.

Terminating all SFTP sessions running
Keys got zeroized. Terminate SFTP sessions

Broadcast message from root (ttyS0) Tue Jan 23 08:53:40 2018...

SSH public/private Keys are Zeroized. SFTP \
      sessions will be terminated
Terminating all SSH/SCP sessions running
Terminate all the logged-in sessions

Broadcast message from root (ttyS0) Tue Jan 23 08:53:40 2018...

All SSH accounts will be logged out
Reboot the system to complete FIPS zeroization process.

Broadcast message from root (ttyS0) Tue Jan 23 08:53:40 2018...

Security Policy, Password or Account Attribute Change: \
      root will be logged out
```

To disable bootprom:

```
switch:root> fipscfg --disable bootprom
You are disabling bootprom.
Do you want to continue? (yes, y, no, n) [no] : no
Operation cancelled.
```

To enable FIPS simulation mode:

```
switch:root> fipscfg --enable simulate
```

```
FIPS Mode/Simulate is not supported
```

See Also

        None

firmwareActivate

Activates switch firmware.

Synopsis

```
firmwareactivate
firmwareactivate [-l | -local]
firmwareactivate --help
```

Description

Use this command to activate the firmware that has been downloaded to the secondary partition using the **firmwareDownload -r** command. This command swaps partitions and reboots the system to activate the new image. Execute this command with the **-local** or **-l** option to activate the firmware on a local control processor (CP).

The **firmwareRestore** and **firmwareCommit** commands only take action if the new firmware is activated; otherwise, the process terminates with an error. However, you can execute the **firmwareDownload** command before activating the firmware.

Notes

This command is supported on the single CP and dual-CP systems.

You must not make any configuration changes before activating the firmware.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

The following operands are optional:

-l | -local

Activates the firmware on the local CP.

--help

Displays the command usage.

Examples

To activate a new version of the firmware:

```
switch:admin> firmwareactivate
This command will activate the firmware on the secondary partition
but will require that existing telnet, secure telnet or SSH sessions
to be restarted.

Do you want to continue (Y/N) [Y]:
```

See Also

firmwareCommit, firmwareDownload, firmwareDownloadStatus, firmwareKeyShow, firmwareRestore, firmwareShow, version

firmwareCheck

Performs firmware integrity test.

Synopsis

```
firmwarecheck
firmwarecheck --enable
firmwarecheck --disable
firmwarecheck --show
```

Description

Use this command to check the integrity of software image that is stored on a switch. This command also detects the files whose checksum has changed. The firmware integrity test fails if the files or packages are modified manually.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--enable -boot

Enables firmware integrity check on every reboot.

--disable -boot

Disables firmware integrity check on every reboot.

--show

Displays whether the integrity check on boot is enabled or disabled.

Examples

To perform firmware integrity test:

```
switch:user> firmwarecheck
Validating integrity of firmware on root filesystem
Please wait...
Firmware integrity test passed.
```

To enable firmware integrity test:

```
switch:user> firmwarecheck --enable -boot
```

To disable firmware integrity test:

```
switch:user> firmwarecheck --disable -boot
```

To display the firmware integrity check is enabled or disabled:

```
switch:user> firmwarecheck --show
```

See Also

firmwareCommit, firmwareDownload, firmwareKeyShow, firmwareRestore, firmwareShow, version

firmwareCleanInstall

Recovers the switch firmware.

Synopsis

```
firmwarecleaninstall
firmwarecleaninstall [-p protocol] [host,user,path,passwd]
firmwarecleaninstall [-acceptEULA] [-showEULA]
     [-p protocol] [host,user,path,passwd]
firmwarecleaninstall --help
```

Description

Use this command to initiate a clean reinstall of the firmware in cases where the loaded firmware does not function correctly, the normal firmware download fails, or to recover from a rolling reboot situation.

Notes

The firmwarecleaninstall operation should be performed similarly on both standalone platforms and on directors. On a director, it should be invoked on each CP, and operates only on that CP. Firmwarecleaninstall can be run on both active and standby CPs, however it should not be run simultaneously on both CPs.

If for any reason, boot flash is corrupted and boot ROM cannot be loaded, you must let it go through RMA. Firmwarecleaninstall mechanism cannot be used to recover from such damage.

If local CF is corrupted in a way that the Linux image cannot be loaded, firmwarecleaninstall cannot be used to recover the switch.

Since pre-existing configurations are totally wiped out by firmwarecleaninstall, to restore the previous configuration or the OEM configuration you must do a specific configdownload.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

The following operands are optional. When invoked without operands, the command goes into interactive mode.

-p *protocol*

Specifies the file transfer protocol. Valid values are ftp, scp, and sftp.

host

Specifies a valid FTP or SSH server name or IP address. The firmware is downloaded from the specified host.

user

> Specifies a user name for FTP or SSH server access.

path

> Specifies a path for the firmware files.

passwd

> Specifies a password.

-acceptEULA

> Prompts the user to accept EULA agreement when no option is specified.

-showEULA

> Displays EULA agreement.

--help

> Displays the command usage.

Examples

To perform a clean firmware install interactively:

```
switch:admin> firmwarecleaninstall
Server Name or IP Address: 10.10.2.10
User Name: admin
File Name: /admin/dist/FOS7.4.0/
Network Protocol(1-FTP, 2-SCP, 3-SFTP) [1]: 1
Password:

This command will erase all the data on the Compact Flash before
installing
a new firmware. There are also disruptive reboots during the process.
Please
use "configupload -all" if all configurations need to be saved before
continuing with firmwarecleaninstall.

Do you want to continue (Y/N) [Y]:
```

To perform a clean firmware install non-interactively:

```
switch:admin> firmwarecleaninstall 10.10.2.10  \
   admin,/admin/dist/FOS7.4.0/
```

See Also

firmwareActivate, firmwareCommit, firmwareDownload, firmwareDownloadStatus, firmwareKeyShow, firmwareRestore, firmwareShow, version

firmwareCommit

Commits switch firmware.

Synopsis

```
firmwarecommit
```

Description

Use this command to commit a firmware download to a CP. This command copies an updated firmware image to the secondary partition and commits both partitions of the CP to an updated version of the firmware. This must be done after each firmware download and after the switch has been rebooted and a sanity check is performed to make sure the new image is fine.

For switches that have nonvolatile memory set into two equal partitions, the primary partition is the where the system boots from; the secondary partition is where a copy of the firmware is stored, in case the primary partition is damaged.

To maintain the integrity of the firmware image in the nonvolatile memory, the **firmwareDownload** command updates the secondary partition only. When **firmwareDownload** completes successfully and the CP is rebooted, the system switches the primary partition (with the old firmware) to the secondary, and the secondary partition (with the new firmware) to the primary.

The default behavior of the **firmwareDownload** command is to automatically run the **firmwareCommit** command after the reboot. If you decide to disable the autocommit option when running **firmwareDownload**, you must execute one of the following two commands after the CP is rebooted:

- **firmwareCommit** copies the primary partition (with new firmware) to the secondary and commits the new firmware to both partitions of the CP.

- **firmwareRestore** copies the secondary partition (with the old firmware) to the primary and backs out of the new firmware download. The **firmwareRestore** command can be run only if autocommit was disabled during the firmware download. Autocommit can be disabled only when you run **firmwareDownload** in single mode.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To commit a new version of the firmware:

```
switch:admin> firmwarecommit
```

```
Validating primary partition...
Doing firmwarecommit now.
Please wait ...
Replicating kernel image
...............
FirmwareCommit completes successfully.
```

See Also

firmwareDownload, firmwareRestore

firmwareDownload

Downloads firmware from a remote host, a local directory, or a USB device.

Synopsis

To invoke the command in interactive mode:

firmwaredownload

To download FOS firmware over a network:

firmwaredownload [**-s** [**-b** | **-n**]] [**-p** ftp | scp | sftp]
       [**-A** cra] [**-c**] [**-r**] [**-lr**] [*host*, *user*, *path*, *password*]

To download FOS firmware from a USB device:

firmwaredownload [**-s** [**-b** | **-n**]] [**-U**]
       [**-c**] [**-r**] [**-lr**] path

To display or acknowledge EULA agreement:

firmwaredownload [**-showEULA**] [**-acceptEULA**]
       [**-p** *protocol*] [*host*, *user*, *path*, *password*]

Description

Use this command to download switch firmware from an FTP or SSH server or local NFS directory to nonvolatile storage. Switch firmware can also be downloaded from an external USB device on platforms that support USB.

The new firmware is downloaded as a bundle of packages. Package names are defined in a *.plist file along with other firmware information (time stamp, platform code, version, etc.). These packages are made available periodically to add features or to remedy defects. Contact customer support to obtain information about available firmware versions.

On enterprise-class platforms, this command, by default, downloads the firmware image to both control processors (CPs) in rollover mode to prevent disruption to application services. This operation depends on High Availability (HA) support. If HA is not available, use the **-s** option to upgrade the CPs one at a time.

All systems supported by this firmware have two partitions of nonvolatile storage (primary and secondary) to store two firmware images. This command always downloads the new image to the secondary partition and then swaps partitions so the secondary partition becomes the primary.

By default, **firmwareDownload** reboots the system and activates the new image. Finally, the command performs a **firmwareCommit** automatically to copy the new image to the other partition. In systems with blade processors (BPs), after the new CP firmware is downloaded to the system and activated, the BP firmware is downloaded to the BP processors if there is a mismatch between the BP and CP firmware.

By default, **firmwareDownload** performs a full install, autoreboot, and autocommit. These modes are selectable only in single CP (**-s**) mode, in which case autoreboot is OFF by default.

For each standalone switch in your fabric, complete all firmware download changes before issuing the **firmwareDownload** command on the next switch to ensure a nondisruptive download.

If **firmwareDownload** is interrupted due to an unexpected reboot as a result of a software error or power failure, the command automatically recovers the corrupted secondary partition. Wait for the recovery to complete before starting another firmware download.

Notes

Firmware download and subsequent POST failure may occur on some platforms, if the firmware commit operation coincides with the execution of POST. The recommended work around is to disable POST (**diagDisablePost**) before you initiate a firmware download and re-enable POST (**diagEnablePost**) after the firmware commit operation has completed.

Firmware download procedures may vary depending on which Fabric OS version you are migrating from. See the *Brocade Fabric OS Administration Guide* for restrictions on changing Fabric OS versions.

On certain occasions, you may see messages in the console output of **firmwareDownload**. These are internal messages generated by the Linux utilities. You can safely ignore these messages. For relevant Brocade-generated firmware download messages, refer to the *Brocade Fabric OS Message Reference Manual* (SULB module).

To correlate Brocade blade names with blade IDs, use the **slotShow** command.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands. When invoked without operands, the command goes into interactive mode.

-U

Downloads the firmware from an attached USB device. This option is valid only on platforms that support a USB port. Refer to your specific Hardware Reference Guide for details. The USB device must be enabled prior to firmware download with the **usbStorage** command. Firmware must be stored under the default firmware directory in the USB file system. On a dual-CP chassis, the USB device must be attached to the active CP. When downloading firmware from a USB device, the **-p** option is ignored.

-s

Enables single-CP mode. This mode supports selectively enabling or disabling a full install, autoreboot, and autocommit on bladed and nonbladed systems. On enterprise-class platforms, this mode supports upgrading a single CP. When downloading the main Fabric OS firmware, this option disables autoreboot, unless overridden by the **-b** option.

-b

Enables autoreboot mode. When single CP mode is enabled and this operand is not specified, **reboot** must be run manually to activate the downloaded image. If autoreboot mode is enabled, the switch reboots automatically after the firmware has been downloaded.

-n

Disables autocommit mode. When autocommit mode is disabled, the **firmwareCommit** command must be executed manually to propagate the downloaded image to both partitions of the storage device.

host

Specify a valid FTP or SSH server name or IP address. IPV4 and IPv6 addresses are supported. The firmware is downloaded from the specified host. If a host is not specified, the firmware is considered accessible on a local directory. To mention an FTP server by name, a DNS server must first be set up with the **dnsConfig** command. If DNS is enabled and a server name is specified, **firmwareDownload** automatically determines whether IPv4 or IPv6 should be used.

user

Specify a user name for FTP or SSH server access. This operand can be omitted, if the firmware is accessible on a local directory, a USB device, or by anonymous FTP server access. A user name other than "anonymous" is required for SSH server access.

path

Specify a fully qualified path for the firmware. Absolute path names may be specified using forward slashes (/).

password

Specify a password. This operand can be omitted, if the firmware is accessible through a local directory or an attached USB device, or if no password is required by the FTP server. This operand is required when accessing an SSH server. In Fabric OS v7.0.0 or later, you can omit the password if the switch is configured as follows:

- The switch must be configured with public key authentication. Refer to the **sshUtil** help page for more information.

- You select a secure protocol (SCP or SFTP).

- The private key is installed on the switch, and the public key is exported to the remote host. Refer to the *Brocade Fabric OS Administration Guide* for configuration procedures.

-p scp | ftp | sftp

Specify the file transfer protocol. Valid values are **ftp** (file transfer protocol), **sftp** (secure file transfer protocol), and **scp** (secure copy protocol). Values are not case-sensitive. If **-p** is not specified, **firmwareCommit** determines the protocol automatically by checking the config.security parameter.

-A cra

Specify the method for protocol. Valid option is **cra**. Challenge Response Authentication (CRA) is supported only with the SCP protocol.

-c

Disables version compatibility checking. By default, **firmwareDownload** checks if the firm-
ware being downloaded is compatible with other running firmware images in the system.
If the firmware version is not compatible, **firmwareDownload** fails. If this option is speci-
fied, version compatibility checking is disabled.

-r

Downloads the firmware to the secondary partition only.

-lr

Downloads the firmware locally to the secondary partition on the CP.

-acceptEULA

Prompts the user to accept EULA agreement when no option is specified.

-showEULA

Displays EULA agreement.

Diagnostics

The command checks the network connection and other system parameters before initiating
firmwareDownload. It may fail if at least one of the following conditions is encountered:

- The host is not reachable from the switch.

- The user does not have permission on the host.

- The password is not specified correctly.

- Indicated firmware does not exist on the host, or is not in the right format, or is corrupted.

- The FTP or SSH service is not running on the host.

- The platform is not supported by the firmware indicated.

- The USB device may not be plugged in correctly. On standalone switches, the device
  must be plugged into the switch USB port. On enterprise-class platforms, the USB device
  must be plugged into the Active CP

- The USB device is not enabled. Use the **usbStorage** command on the switch to enable
  the USB device. On enterprise-class platforms, the command must be run on the Active
  CP to enable the USB device.

For additional system messages, refer to the *Brocade Fabric OS Message Reference Manual*.

Examples

To download the firmware to both CPs on a dual-CP chassis with an attached USB device (You
would execute the same command on a single-CP switch with USB support. Output may vary
depending on platform.):

```
switch:admin> firmwaredownload -U v7.4.0_amp

Checking system settings for firmwaredownload...
Protocol selected: USB
Trying address-->AF_INET IP: 127.1.1.8, flags : 2
System settings check passed.

Checking version compatibility...
Version compatibility check passed.

This command will upgrade the firmware on both
CP blades. If you want to upgrade firmware on a single
CP only, please use -s option.

You may run firmwaredownloadstatus to get the status
of this command.

This command will cause a warm/non-disruptive boot on
the active CP, but will require that existing telnet,
secure telnet or SSH sessions be restarted.
```

To download firmware interactively:

```
switch:admin> firmwaredownload
Server Name or IP Address: 192.168.32.10
User Name: admin
File Name: ~admin/dist/FOS7.0.0/
Network Protocol(1-auto-select, 2-FTP, 3-SCP, 4-SFTP) [1]:
Password:********
Do you want to continue with CRA (Y/N) [N]:
```

To download firmware without a password using public key authentication:

```
switch:admin> firmwaredownload
Server Name or IP Address: 10.38.17.17
User Name: admin
File Name: /users/home25/admin/dist
Network Protocol(1-auto-select, 2-FTP, 3-SCP, 4-SFTP) [1]: 3
Verifying if the public key authentication is available.
Please wait ...Success.

Do Auto-Commit after Reboot [Y]: y
Reboot system after download [N]: y
Server IP: 10.38.17.17, Protocol IPv4
Checking system settings for firmwaredownload...
System settings check passed.
(Output truncated)
```

See Also

firmwareCommit, firmwareDownloadStatus, firmwareKeyShow, firmwareRestore, firmwareShow, reboot, slotShow, version

firmwareDownloadStatus

Displays the status of a firmware download.

Synopsis

firmwaredownloadstatus

Description

Use this command to display an event log that records the progress and status of events during a firmware download. The event log is created by the firmware download process and is kept until you issue another **firmwareDownload** command. A timestamp is associated with each event. When downloading Fabric OS firmware, the event logs in the two control processors (CPs) are synchronized and you can run this command from either CP.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To display the status of a firmware download on a switch:

```
switch:admin> firmwaredownloadstatus
[1]: Tue Mar 29 21:43:14 2011
Firmware is being downloaded to the switch. This step may take up to
30 minutes.

[2]: Tue Mar 29 21:48:26 2011
Firmware has been downloaded to the secondary partition of the switch.

[3]: Tue Mar 29 22:06:57 2011
The firmware commit operation has started. This may take up to 10
minutes.

[4]: Tue Mar 29 22:10:19 2011
The commit operation has completed successfully.

[5]: Tue Mar 29 22:10:19 2011
Firmwaredownload command has completed successfully. Use firmwareshow
to verify the firmware versions.
```

To display the status of a firmware download on a chassis:

```
switch:admin> firmwaredownloadstatus
```

```
[1]: Fri Mar 25 13:12:56 2011
Slot 7 (CP1, active): Firmware is being downloaded to the switch. This
step may take up to 30 minutes.

[2]: Fri Mar 25 13:33:23 2011
Slot 7 (CP1, active): Firmware has been downloaded to the secondary
partition of the switch.

[3]: Fri Mar 25 16:38:55 2011
Slot 7 (CP1, active): Firmwarerestore is entered. System will reboot
and a firmware commit operation will start upon boot up.

[4]: Fri Mar 25 16:49:12 2011
Slot 7 (CP1, standby): The firmware commit operation has started. This
may take up to 10 minutes.

[5]: Fri Mar 25 16:58:44 2011
Slot 7 (CP1, standby): Firmware commit operation has started to restore
the secondary partition.

[6]: Fri Mar 25 16:58:45 2011
Slot 7 (CP1, standby): The firmware commit operation has started. This
may take up to 10 minutes.

[7]: Fri Mar 25 17:05:34 2011
Slot 7 (CP1, standby): The commit operation has completed successfully.
```

See Also

firmwareCommit, firmwareDownload, firmwareRestore, firmwareShow

firmwareKeyShow

Displays the public key used for firmware validation.

Synopsis

```
firmwarekeyshow
```

Description

This command displays the contents of the public key used for validating the integrity of firmware images.

Notes

A firmware key should be installed on every switch as a part of the Fabric OS installation. By default, the signature is verified for every firmware download.

If the signature validation fails, firmware download also fails.

Refer to the *Brocade Fabric OS Administration Guide* for complete details on upgrading or downgrading firmware.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To display the public key used for firmware validation:

```
switch:admin> firmwarekeyshow
-----BEGIN PUBLIC KEY-----
MIGfMA0GCSqGSIb3DQEBAQUAA4GNADCBiQKBgQDjuQpMk4FrceFvVZ12iAakFNv9
k4ZGhFDMPGIHIems1Ywqdl55U7LTDIVwoViTLevtIDn012r1XlNQ+DORAzvJfkwD
XegkeTn/8wDgHBwotPz4WTd9UGJ9M0Vs52ro1TiukIpsh084LXKgxt+IgdseRCzY
8p8rQZWLpyputx6rgwIDAQAB
-----END PUBLIC KEY-----
```

See Also

firmwareDownload, configureChassis

firmwareRestore

Restores the former active firmware image.

Synopsis

```
firmwarerestore
```

Description

Use this command to restore the former active Fabric OS firmware image. This command can only be run if autocommit was disabled during the **firmwareDownload** process.

After a **firmwareDownload** and a **reboot** (with autocommit disabled), the downloaded firmware becomes active. If you do not want to commit the firmware and want to restore the former firmware, issue the **firmwareRestore** command. After running **firmwareRestore**, you can run **firmwareDownload** again.

This command reboots the system and makes the former firmware active. After the switch reboots, both primary and secondary partitions restore the previous firmware.

This command only takes action if the system is booted after a **firmwareDownload**; otherwise, the process terminates with an error.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To restore the former active firmware image:

```
switch:admin> firmwarerestore
Restore old image to be active ...
Restore both primary and secondary image after reboot.
The system is going down for reboot NOW !!
Broadcast message from root (ttyS0) Fri Oct 22 23:48:54 2010...

Doing firmwarecommit now.
Please wait ...
```

See Also

firmwareCommit, firmwareDownload

firmwareShow

Displays the firmware version and download history.

Synopsis

```
firmwareshow
firmwareshow --history
firmwareshow --help
```

Description

Use this command to display the firmware versions and the firmware download history. The command shows the firmware versions on both the primary and secondary partitions of the storage device. When this command is issued while a firmware download is in process, an appropriate warning message is displayed.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--history

Displays the contents of the firmware download log. For each firmware download record, the command displays the date and time, the switch name, the slot number, port ID, and firmware version.

--help

Displays the command usage.

Examples

To display the firmware versions on a Brocade DCX 8510-8 while a firmware download is in progress:

```
switch:admin> firmwareshow
Slot Name   Appl Primary/Secondary Versions   Status
------------------------------------------------------
  6  CP0    FOS      v7.2.0                     STANDBY
                     v7.2.0
  7  CP1    FOS      v7.2.0                     ACTIVE *
                     v7.2.0

WARNING: Firmwaredownload is in progress.
```

To display the firmware version on a standalone switch:

```
switch:admin> firmwareshow
Appl      Primary/Secondary Versions
------------------------------------------
FOS       v7.2.0
          v7.2.0
```

To display the firmware download history:

```
switch:admin> firmwareshow --history
Firmware version history

Sno Date & Time          Switch Name Slot PID  FOS Version
1 Fri Feb 18 12:58:06 2011  CDCX16   7  1556   Fabos Version v7.0.0d

2 Wed Feb 16 07:27:38 2011  CDCX16   7  1560   Fabos Version v7.0.0c
```

See Also

firmwareDownload, firmwareDownloadStatus

firmwareSync

Synchronizes the firmware from the active control processor (CP) to the standby CP.

Synopsis

```
firmwaresync [-force]
firmwaresync --help
```

Description

Use this command to manually synchronize the firmware from the active CP to the standby CP. Execute the command without arguments to synchronize the active CP firmware to the standby CP.

Notes

This command is applicable only for the dual CP systems. Execution of this command updates the firmware version of the standby CP with that of the active CP. The lowest firmware version on the standby CP can be Fabric OS v6.4.0.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operand:

[-force]

Executes the command without user confirmation. This operand is optional.

--help

Displays the command usage.

Examples

To synchronize the standby CP with active CP firmware version:

```
switch:admin> firmwaresync

This command will copy the firmware on the active CP blade to the
standby CP blade but will require that existing telnet, secure telnet
or
SSH sessions to the standby CP blade to be restarted.

This command may take up to 10 minutes.

Do you want to continue (Y/N) [Y]:
Firmwaresync has started.
```

```
.......................Firmwaresync has been completed successfully.
```

See Also

        aaaConfig

flow

Creates, manages, and displays flows in Flow Vision.

Synopsis

```
flow --create flow_name -feature feature_list
      port_options frame_options [config_options]
flow --activate flow_name -feature feature_list
flow --deactivate flow_name -feature feature_list
flow --control [flow_name] [-feature feature_list]
      [-deviceIdMode mode | -portIdMode mode]
      [-simport port_num -enable | -disable]
      [-size payload_size | -pattern pattern_string]
      [-enable_wrap | -disable_wrap]
flow --modify flow_name port_options
flow --reset flow_name -feature feature_list
flow --show [flow_name] [-feature feature_list | -allzoned]
      [port_options frame_options]
      [-count iterations | -time interval | -verbose [-domain domain_id]]
      [-sortby field] [-ctrlcfg]
      [-increase [count] | -decrease [count]]
flow --delete flow_name | all [-force]
flow --help
```

Description

Use this command to perform the following functions:

- Create a flow

- Activate or deactivate features for a flow

- Clear the data collected for a particular feature of a flow

- Change the control parameters for a feature or a flow

- Modify the definition of the predefined Analytics VTAP flow

- Display the flow statistics

- Delete a flow

Each of these functions is documented in a separate section that includes function, synopsis, description, operands, and examples.

A flow is a set of related Fibre Channel (FC) frames or packets that share similar traits, such as an ingress port, egress port, or frame options that can uniquely differentiate one set of related frames or packets from a different set of frames. A flow is defined by a combination of ingress port, egress port, source device, and destination device parameters. Flow Vision supports Flow Monitor, Flow Generator, and Flow Mirror features to monitor, simulate, and capture the network traffic respectively. You can create up to 512 flows on Brocade director and 128 flow on switch-based system. For more information on Flow Vision, refer to the *Brocade Fabric OS Flow Vision User Guide*.

Notes

This command requires a Fabric Vision license.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Function

Creating a flow

Synopsis

```
flow --create flow_name -feature feature_list
     port_options frame_options [config_options]
```

Description

Use this command to create a flow and by default activate the flow for the specified features. This command validates the flow definition before creating a flow. If the flow definition is not supported by any specified feature or if the flow definition is a duplicate of an existing active flow, the operation will terminate with an appropriate error message. For more information on duplicate flows, refer to the *Brocade Fabric OS Administration Guide*.

The following rules apply for creating a flow:

- You must specify at least one port option (**-ingrport** or **-egrport**) but not both.

- You must specify the source device (**-srcdev**), the destination device (**-dstdev**), or both. The source device and the destination device can be learned using a wildcard ("*").

- The ingress port and egress port must reside in the local switch.

- The source device and destination device can reside in either the local or remote switch.

- You can create 512 flows on a Brocade director and 128 flows on a switch-based system. Note that each flow discovered when using "*" as a source device or destination device will count as one of these flows. These system-discovered flows will impact the number of user-defined flows allowed to be active.

- The configuration options **-noactivate**, **-noconfig**, and **-bidir** are optional.

- You can create up to 64 monitor flows and four generator flows per port.

- You can activate one mirror flow per chassis or switch-based system.

Operands

The **--create** command has the following operands:

flow_name

Specifies the name of the flow. Each flow name must be a unique string composed of a maximum of 20 alphanumeric or underscore characters. The flow name is case-insensitive and is always stored as lowercase.

-feature *feature_list*

Specifies a comma-separated list of features to activate for the flow. Specify "all" to activate all features for a flow. Valid values for *feature_list* include the following:

monitor

Activates the Flow Monitor feature for a flow. The Flow Monitor feature monitors and provides statistics for the specified flow.

The following configuration considerations apply for the Flow Monitor feature:

- The ingress port and egress port can be an SIM Port, F_Port, E_Port, or EX_Port (Gen 5 or later) on the local switch. The ingress port must be a Gen 5 or later port and egress port can be a Gen 4, Gen 5 or later port. The SIM Port must be a Gen 5 or later port.

- VE_Port, VEX_Port, FCoE ports, Ethernet ports, and GigE are not supported.

- The source device and destination device can be a host or target switch, or a wildcard ("*"). Using the wildcard ("*") enables Flow Vision to learn (discover) all flows on an F_Port and displays statistics for each learned flow. The learning mode is supported only on Gen 5 or later F_Ports and trunked F_Ports.

- You can use WWN or Fibre Channel ID (FCID) for the **-srcdev** and **-dstdev** operands when creating Flow Monitor on EX_Ports. If the Flow Monitor feature is configured on the ingress port using FCID addressing mode, you must specify the real SID of the source device and the proxy ID of the destination device. If the Flow Monitor feature is configured on the egress port using FCID addressing mode, you must specify the proxy ID of the source device and real DID of the destination device.

- Inter Fabric Link (IFL) flows can be monitored only on EX_Ports in a Fibre Channel router (FCR).

- You can activate the Flow Monitor feature for a maximum of 64 flows per port.

- Access Gateway (AG) mode is supported

generator

Activates the Flow Generator feature for a flow. The Flow Generator is a traffic flow diagnostics feature that generates traffic at line rate in the fabric to validate connectivity, hardware components, and network performance. You must configure the ingress or egress ports and the source and destination devices to be SIM ports before activating a flow using the Flow Generator feature.

You can modify the frame size and payload pattern using the **--control** options after creating the flow.

The following configuration considerations apply for the Flow Generator feature:

- The Flow Generator feature is not supported on a base switch or ICL port.

- AG mode is not supported.

- You can activate the Flow Generator feature on four flows per port.

- The **-frametype**, **-lun**, and **-bidir** options are not supported with the Flow Generator feature.

mirror

Activates the Flow Mirror feature for a flow. The Flow Mirror captures network traffic in a flow and sends it to the switch CPU or a local mirror port in a switch for traffic analysis. This feature mirrors only the flows that are in active state. The logging mechanism of the frames can be modified by using the **--control -enable_wrap** | **-disable_wrap** options.

For both switch-based system and a chassis-based system, a maximum of 256 frames per second are mirrored. A maximum of 1280 frames are stored for switch-based systems and 5120 frames are stored for chassis-based systems.

The following configuration considerations apply for the Flow Mirror feature:

- The ingress port or the egress port must be an F_Port, which is 8G or less, on the local switch.

- The Flow Mirror feature is supported only on Gen 5 or later ports.

- EX_Ports, XISL ports, DISL ports, E_Ports, trunked E_Ports, and trunked F_Ports are not supported.

- The Flow Mirror feature is not supported on SIM ports.

- The Flow Mirror feature can be active on only one flow per chassis or switch-based system.

port_options

Specifies the options to configure the ingress or egress ports.

-ingrport *port*

Specifies the ingress port. The *port* can be in either [*slot*/]*port* or D,I (Domain, Index) format depending on the port mode configured using the **-portIdMode** operand.

-egrport *port*

Specifies the egress port. The *port* can be in either [*slot*/]*port* or D,I format depending on the port mode configured using the **-portIdMode** operand.

The **-ingrport** and **-egrport** options are mutually exclusive; that is, you can specify only one of the options. The learning mode ("*") is not supported.

-mirrorport *port*

Specifies the port from which mirrored frames exits. The *port* can be in either [*slot*/]*port* or D,I format depending on the port mode configured using the **-portIdMode** operand.

frame_options

Specifies the options that represent the content of the FC frame or attributes of the frame.

-srcdev *device_id*

> Specifies the 3-byte source ID of the originator device. The *device_id* can be in PID or PWWN format depending on the device ID mode configured using the **-deviceIdMode** operand. The PID format is 0xDDAAPP, where DD is the Domain ID, AA is the Area ID and PP is the AL_PA ID. The PWWN format is "XX:XX:XX:XX:XX:XX:XX:XX". Specify "*" to enumerate all originator devices.

-dstdev *device_id*

> Specifies the 3-byte destination ID of the destination device. The *device_id* can be in PID or PWWN format depending on the device ID mode configured using the **-deviceIdMode** operand. The PID format is 0xDDAAPP, where DD is the Domain ID, AA is the Area ID and PP is the AL_PA ID. The PWWN format is "XX:XX:XX:XX:XX:XX:XX:XX". Specify "*" to enumerate all destination devices.

-sfid *fid*

> Specifies the source fabric ID.

-dfid *fid*

> Specifies the destination fabric ID.

-lun *LUN_id*

> Specifies the LUN identification in decimal or hexadecimal (2-byte value) format. The valid range for *LUN_id* is from 0 through 65535 (0x0000 to 0xFFFF). The LUN parameter includes the addressing method and fields associated with the respective addressing method. If the most significant byte (MSB) is not specified in the flow definition, 0x00 is used. This operand is not supported by the Flow Generator feature.

-frametype *type*

> Specifies the predefined frame type. Valid values for *type* include the following: SCSI, SCSIRead, SCSIWrite, SCSIRW, SCSI2Reserve, SCSI3Reserve, scsicmdsts (supported only in Mirror feature), ABTS, BAACC, SCSI2Release, SCSI3Release, SCSITur, SCSI2ReserveRelease, SCSI3ReserveRelease, SCSIGoodStatus, SCSI-CheckStatus, SCSIResvConflict, SCSIInquiry, SCSIXferrdy, Srr, and BARJT. This operand is not supported by the Flow Generator feature.

-srceid *vm_uuid*

> Specifies the source entity ID.

-nsid *nsid*

> Specifies the namespace ID of the NVMe flow to monitor.

config_options

> Specifies the flow configuration options.

-bidir

> Configures the features to act on both incoming and outgoing directions on bidirectional traffic. For example, the Flow Mirror feature mirrors the frames on both directions: traffic originating from the source device and traffic that is destined to the source device. This operand is not supported by the Flow Generator feature.

-noactivate

> Allows a flow to be created, but suppresses activation of a flow.

-noconfig

> Overrides the default behavior, which automatically saves the flow in the persistent configuration when you create a flow. The flow will be lost when the system is rebooted.

Examples

To create a flow on ingress port (1/10) for traffic from the source device (0x020a00) to the destination device (0x030000) and activate the flow for the Flow Mirror and Flow Monitor features:

```
switch:admin> flow --create myflow1 -feature mirror,monitor
    -ingrport 1/10 -srcdev 0x020a00 -dstdev 0x030000
```

To create a flow to monitor SCSI frames going through an egress port:

```
switch:admin> flow --create scsicsflow -feature monitor
    -egrport 1/9 -frametype scsicheckstatus
```

To create a flow to monitor statistics from a particular source to destination on a specified LUN:

```
switch:admin> flow --create lunflow -feature monitor
    -srcdev 0x010502 -dstdev 0x030700 -ingrport 1/5 -lun 4
```

To create a flow from source device (0x010203) to destination device(0x020304) for Flow Generator feature without saving the flow:

```
switch:admin> flow --create myflow2 -feature generator
    -srcdev 0x010203 -dstdev 0x020304 -ingrport 2/3 -noconfig
```

To create a flow from source device (0x01ba00) to destination device(0x01c000) for Flow Generator feature without activating the flow:

```
switch:admin> flow --create myflow3 -feature generator
    -srcdev 0x01ba00 -dstdev 0x01c000 -ingrport 2/18 -noactivate
```

To create a flow to monitor bidirectional traffic from a particular source to destination:

```
switch:admin> flow --create endtoendflow -feature monitor
    -ingrport 2/5 -srcdev 010500 -dstdev 040900 -bidir
```

To create a flow to monitor traffic from source devices to destination devices in learning mode:

```
switch:admin> flow --create flowLearn -feature monitor
    -ingrport 3/5 -srcdev "*" -dstdev "*"
```

To create a flow to mirror ingress and egress traffic flowing through a port to an embedded port:

```
switch:admin> flow --create myflow4 -feature mirror
```

```
        -ingrport 1/20 -srcdev 0x010203 -lun 0x02 -bidir
```

To create a flow to generate traffic from the source device (0x020a00) to all destination devices
that are zoned with the source device:

```
switch:admin> flow --create myflow5 -feature generator
        -ingrport 1/10 -srcdev 0x020a00 -dstdev "*"
```

To create a NVMe flow to monitor from a particular source to destination:

```
switch:admin> flow --create nvmeflow -fea mon -ing 851 -srcdev 497b00 -dst
0feec0 -nsid all
```

To create a VM flow monitor only for a ingressing specific VM source device flow to destination:

```
switch:admin> flow --create vm_mon_165 --srceid "50 0d 07 b6 dc f2 c3
35-5a 93 19 e6 7c 1f 24 a4" \
        -dstdev '*' -fea mon -ingrport 165
```

Function

Activating features or flow

Synopsis

```
flow --activate flow_name -feature feature_list
```

Description

Use this command to activate a flow if it is not in the active state or configure the specified
features for a flow. Use this command if you created a flow using the **-noactivate** operand or if
none of the features are activated for the flow. Note that the flows are not enforced until they
are active and the flows cannot be activated without configuring the features. If one or more of
the flow parameters are not supported by any specified feature, the flow will not be activated
and the operation will fail with an appropriate error message.

Operands

The **--activate** command has the following operands:

flow_name

Specifies the name of the flow on which the specified features must be activated. Specify
"all" to activate the specified features for all flows. The following predefined flows are
supported:

sys_mon_all_fports

Used for automatically learning and monitoring the traffic passing through all the online
F_Ports in the switch. By default, this flow is in the deactivated state. This flow is
supported only with the **monitor** feature.

sys_analytics_vtap

> Used to mirror frames to a port on a remote domain, which is in IO Analyzer Mode. This flow is supported only with the **mirror** feature.

sys_mon_all_vms

> Used to monitor all registered VMs in the local domain. The flow monitors only the ingress traffic for the registered VM. The reported statistics are accumulated for each VM across all the storage devices. This flow is supported only with the **monitor** feature.

sys_gen_all_simports

> Used for monitoring traffic when generated from each SIM port on a switch to all the other SIM ports configured on that switch.

feature_list

> Specifies a comma-separated list of features to activate for a flow. Specify "all" to activate all features for a flow. Valid values for *feature_list* include the following: **monitor**, **generator**, and **mirror**.

Examples

To activate Flow Mirror feature for a flow:

```
switch:admin> flow --activate myflow2 -feature mirror
```

Function

Deactivating features

Synopsis

```
flow --deactivate flow_name -feature feature_list
```

Description

Use this command to deactivate the specified features for a flow. All data associated with the deactivated feature will be cleared.

Operands

The **--deactivate** command has the following operands:

flow_name

> Specifies the name of the flow on which the specified features must be deactivated. Specify "all" to deactivate the specified features for all flows. The following predefined flows are supported:

sys_mon_all_fports

Used for automatically learning and monitoring the traffic passing through all the online F_Ports in the switch. This flow is supported only with the **monitor** feature.

sys_analytics_vtap

Used to mirror frames to a port on a remote domain, which is in IO Analyzer Mode. This flow is supported only with the **mirror** feature.

sys_mon_all_vms

Used to monitor all registered VMs in the local domain. The flow monitors only the ingress traffic for the registered VM. The reported statistics are accumulated for each VM across all the storage devices.

sys_gen_all_simports

Used for monitoring traffic when generated from each SIM port on a switch to all the other SIM ports configured on that switch.

feature_list

Specifies a comma-separated list of features to deactivate for the flow. Specify "all" to deactivate all features for a flow. Valid values for *feature_list* include the following: **monitor**, **generator**, and **mirror**.

Examples

To deactivate the Flow Mirror feature for a flow:

```
switch:admin> flow --deactivate myflow2 -feature mirror
```

Function

Changing the control parameters

Synopsis

```
flow --control [flow_name] [-feature feature_list]
     [-deviceIdMode mode | -portIdMode mode]
     [-simport port_num -enable | -disable]
     [-size payload_size | -pattern pattern_string]
     [-enable_wrap | -disable_wrap]
```

Description

Use this command to modify the port or device addressing mode and to change the control parameters of a flow or features.

Operands

The **--control** command has the following operands:

flow_name

Specifies the flow name. Specify "all" to modify the control parameters for all flows. If a flow name is not specified, the default values of the control parameters, **-size** and **-pattern** will be modified; the flows which are already present does not intake the modified control parameters. The modified control parameters will apply to all flows created in future.

-feature *feature_list*

Specifies a comma-separated list of features on which the control parameters should be applied. Valid values for *feature_list* include the following: **generator**, **monitor**, and **mirror**.

-deviceIdMode *mode*

Specifies the mode for addressing the devices. The valid values for *mode* are **pid** and **wwn**. The default mode is **pid**.

-portIdMode *mode*

Specifies the mode for addressing the ports. The valid values for *mode* are **slotport** and **index**. The default mode is **slotport**.

-simport *port*

Enables or disables a port as a SIM port. The *port* can be in [*slot*/]*port* or D,I format depending on the port ID mode configured using the **-portIdMode** operand. You can specify a single port or a range of ports in *slot*/*port*, *slot*/*port-port*, *slot*/* (all ports in slot), */* (all ports in switch or logical switch), *port*, *port-port*, and * (all ports in switch or logical switch) formats. The flow name is not required for enabling or disabling a port as SIM port.

-enable

Enables the port as a SIM port.

-disable

Disables the SIM port configuration on the port.

-size *payload_size*

Specifies the size of the frame payload. The frame size must be specified in multiples of 4, for example, 64, 68, 120, or 320 characters. The valid range is from 64 through 2048 characters; 0 for random size. The default payload size is 2048 bytes.

The following operands are specific to the flow **generator** feature:

-pattern *pattern_string*

> Specifies the ASCII pattern of the payload. The valid range is from 1 through 32 bytes; 0 for random pattern. The default is random pattern.

> The following operands are specific to the flow **mirror** feature. You can use these operands only if the Flow Mirror feature is not activated for a flow. The flow name is not required for enabling or disabling this option.

-enable_wrap

> Enables the wrapping of mirrored frame logs. This is the default value. The Flow Mirror flow must be deactivated before using this command. The statistics of the Flow Mirror flow are reset during this operation.

-disable_wrap

> Disables the wrapping of mirrored frame logs. The Flow Mirror flow must be deactivated before using this command. The statistics of the Flow Mirror flow are reset during this operation.

Examples

> To change the device addressing mode to WWN:
>
> switch:admin> **flow --control -deviceidmode wwn**
>
> To change the port addressing mode to index:
>
> switch:admin> **flow --control -portidmode index**
>
> To configure the ports from 1 to 40 in slot 1 as SIM port:
>
> switch:admin> **flow --control -simport 1/1-40 -enable**
>
> To remove the SIM port configuration on port 20 in slot 1:
>
> switch:admin> **flow --control -simport 1/20 -disable**
>
> To modify the size and pattern for a flow:
>
> switch:admin> **flow --control myflow2 -feature generator**
>   **-size 100 -pattern "1234"**
>
> To disable wrapping of frame logs for the Flow Mirror feature:
>
> switch:admin> **flow --control -feature mirror -disable_wrap**

Function

> **Modifying definition of Analytics vTap flow**

Synopsis

> **flow --modify** *flow_name port_options*

Description

Use this command to modify the existing flow definition of the predefined flow "sys_analytics_vtap" and specify either a single port, a MAPS logical port group name, or a wildcard (*) as ingress port. You can also override the default mirror port by using the **--mirrorport** *port* option.

Operands

The **--modify** command has the following operands:

flow_name

Specifies the name of the Analytics vTap flow. Valid option is **sys_analytics_vtap**. The sys_analytics_vtap flow is used to mirror frames to a port on a remote domain, which is in IO Analyzer Mode. The flow can be modified only if it is in the deactive state.

port_options

Specifies the options to configure the ingress or mirror port.

-ingrport *port*

Specifies the ingress port. The *port* can be in either [*slot*/]*port* or D,I (Domain, Index) format depending on the port mode configured using the **-portIdMode** operand, or a wildcard (*).

-mirrorport *port*

Specifies the port from which mirrored frames exits. The *port* must be in the D,I (Domain, Index) format.

Examples

To modify and activate the predefined Analytics vTap flow:

```
switch:admin> flow --modify sys_analytics_vtap -ingrport 2/10 -mirrorport
12, 21
switch:admin> flow -activate sys_analytics_vtap -feature mirror
```

Function

Clearing feature data

Synopsis

flow --reset *flow_name* **-feature** *feature_list*

Description

Use this command to clear the data of the specified flow and feature combination. All the data collected for the flow and feature combination will be cleared.

Operands

The **--reset** command has the following operands:

flow_name

Specifies the name of the flow on which the feature data must be cleared. Specify "all" to reset all flows. The following predefined flows are supported:

sys_mon_all_fports

Used for automatically learning and monitoring the traffic passing through all the online F_Ports in the switch. By default, this flow is in the deactivated state. This flow is supported only with the **monitor** feature.

sys_analytics_vtap

Used to mirror frames to a port on a remote domain, which is in IO Analyzer Mode. This flow is supported only with the **mirror** feature.

sys_mon_all_vms

Used to monitor all registered VMs in the local domain. The flow monitors only the ingress traffic for the registered VM. The reported statistics are accumulated for each VM across all the storage devices.

sys_gen_all_simports

Used for monitoring traffic when generated from each SIM port on a switch to all the other SIM ports configured on that switch.

feature_list

Specifies a comma-separated list of features. Specify "all" to reset all features for a flow. Valid values for *feature_list* include the following: **monitor**, **generator**, and **mirror**.

Examples

To clear all the mirrored frames for a flow:

```
switch:admin> flow --reset myflow1 -feature mirror
```

Function

Displaying flow data

Synopsis

```
flow --show [flow_name] [-feature feature_list | -allzoned]
      [port_options frame_options]
      [-count iterations | -time interval | -verbose [-domain domain_id]]
      [-sortby field] [-ctrlcfg]
      [-increase [count] | -decrease [count]]
```

Description

Displays the flow definitions and frame statistics. When used without operand, the **--show** command displays the list of all flows configured in Flow Vision.

The show on demand feature allows you to display the statistics of the features without creating a flow. To display the statistics of the features without creating a flow, you must specify the operands without a flow name and provide a flow definition. The flow will run for a time interval of 6 seconds and the data will be displayed for the specified features.

Operands

The **--show** command has the following operands:

flow_name

Displays the parameters and flow statistics for the specified flow. Specify "all" to display all flows. The following predefined flows are supported:

sys_mon_all_fports

Used for automatically learning and monitoring the traffic passing through all the online F_Ports in the switch. By default, this flow is in the deactivated state. You can activate this flow using the **--activate** operand. This flow is supported only with the **monitor** feature.

sys_analytics_vtap

Used to mirror frames to a port on a remote domain, which is in IO Analyzer Mode. This flow is supported only with the **mirror** feature.

sys_mon_all_vms

Used to monitor all registered VMs in the local domain. The flow monitors only the ingress traffic for the registered VM. The reported statistics are accumulated for each VM across all the storage devices.

sys_gen_all_simports

Used for monitoring traffic when generated from each SIM port on a switch to all the other SIM ports configured on that switch.

-feature *feature_list*

> Displays the statistics for the specified features. Specify "all" to display statistics of all configured features. Valid values for *feature_list* include the following: **monitor**, **generator**, **mirror**, and **fabinfo**.

fabinfo

> Displays the topology data (the summary of all the paths taken by the flows in the flow definition) and the MAPS violations. The *flow_name*, **-lun**, **-frametype**, and **-sortby** options are not supported with this feature.

-allzoned

> Displays all the zoned devices for a specified port, flow name, or flow definition.

port_options

> Specifies the ingress or egress port options.

-ingrport *port*

> Specifies the ingress port. The *port* can be in either [*slot*/]*port* or D,I (Domain, Index) format depending on the port mode configured using the **-portIdMode** operand.

-egrport *port*

> Specifies the egress port. The *port* can be in either [*slot*/]*port* or D,I format depending on the port mode configured using the **-portIdMode** operand.

-mirrorport *port*

> Specifies the port from which mirrored frames exits. The *port* can be in either [*slot*/]*port* or D,I format depending on the port mode configured using the **-portIdMode** operand.

frame_options

> Specifies the options that represent the content of the FC frame or attributes of the frame.

-srcdev *device_id*

> Specifies the 3-byte source ID of the originator device. The *device_id* can be in PID or PWWN format depending on the device ID mode configured using the **-deviceIdMode** operand. The PID format is 0xDDAAPP, where DD is the Domain ID, AA is the Area ID and PP is the AL_PA ID. The PWWN format is "XX:XX:XX:XX:XX:XX:XX:XX". Specify "*" to enumerate all originator devices.

-dstdev *device_id*

> Specifies the 3-byte destination ID of the destination device. The *device_id* can be in PID or PWWN format depending on the device ID mode configured using the **-deviceIdMode** operand. The PID format is 0xDDAAPP, where DD is the Domain ID, AA is the Area ID

and PP is the AL_PA ID. The PWWN format is "XX:XX:XX:XX:XX:XX:XX:XX". Specify "*" to enumerate all destination devices.

-lun *LUN_id*

Specifies the LUN identification in decimal or hexadecimal (2-byte value) format. The valid range for *LUN_id* is from 0 through 65535 (0x0000 to 0xFFFF). The LUN ID includes the addressing mode. If the most significant byte (MSB) is not specified, 0x00 is used. This operand is not supported by the Flow Generator feature.

-frametype *type*

Specifies the predefined frame type. Valid values for *type* include the following: SCSI, SCSIRead, SCSIWrite, SCSIRW, SCSI2Reserve, SCSI3Reserve, scsicmdsts, ABTS, BAACC, SCSI2Release, SCSI3Release, SCSITur, SCSI2ReserveRelease, SCSI3Re-serveRelease, SCSIGoodStatus, SCSICheckStatus, SCSIResvConflict, SCSIInquiry, SCSIXferrdy, Srr, and BARJT. This operand is not supported by the Flow Generator feature.

-nsid *nsid*

Specifies the namespace ID of the NVMe flow to monitor.

-count *value*

Specifies the number of times the output must be repeated. The default value is 1 and the maximum value is 10.

-time *time_interval*

Displays the flow information for the specified time interval until it is terminated with **Ctrl + C**. Values are in seconds. The time interval must be specified in multiples of 6, for example, 6, 12, 18, or 24 seconds. Valid range is from 6 through 300 seconds.

-verbose

Displays the flow or feature statistics in verbose mode.

-domain *domain_id*

Displays detailed information for the specified domain. The operand is valid only with the **fabInfo** feature.

-sortby *field*

Displays the sub-flows for a feature in the specified order. The *field* can be column*X*, where *X* is the column number. The value of *X* can be from 1 to maximum number of columns present in the **--show** output. For the Flow Mirror feature, the sub-flows may or may not be present but the mirrored frames can be sorted. The **-sortby** option can be applied if only one feature is specified with the **--show** command.

-ctrlcfg

>   Displays the control parameters.

-increase [*count*]

>   Displays the monitoring statistics in ascending order based on the throughput. The *count*
>   parameter is optional and it can be used to specify the number of entries to be displayed.
>   This operand is supported only with the **monitor** feature.

-decrease [*count*]

>   Displays the monitoring statistics in descending order based on the throughput. The
>   *count* parameter is optional and it can be used to specify the number of entries to be
>   displayed. This operand is supported only with the **monitor** feature.

Examples

>   To display all flows in Flow Vision:

```
switch:admin> flow --show
-------------------------------------------------------------- \
   Flow Name  |  Feature  |   SrcDev  |   DstDev  |IngrPt|EgrPt  \
-------------------------------------------------------------- \
myflow1        |mon+       |020a00     |030000     |1/10  |-       \
scsicsflow     |mon+       |520a00     |520b00     |-     |1/9     \
lunflow        |mon+       |010502     |030700     |1/5   |-       \
myflow2        |gen+       |010203     |020304     |2/3   |-       \
myflow3        |gen        |01ba00     |01c000     |1/18  |-       \
endtoendflow   |mon+       |010500     |040900     |2/5   |-       \
flowLearn      |mon+       |*          |*          |3/5   |-       \
myflow4        |mir+       |010203     |-          |1/20  |-       \
myflow5        |mon+       |0ac200     |0ac600     |194   |-       \
       --------------------------
       |BiDir | LUN   | NSID   | FrameType |
       --------------------------
       |no     |-       |-        |-
       |no     |-       |-        |sstatc      |
       |no     |4       |-        |-
       |no     |-       |-        |-
       |no     |-       |-        |-
       |yes    |-       |-        |-
       |no     |-       |-        |-
       |no     |0x02   |-        |-
       |no     |-       |5        |-
  + Denotes feature is currently activated for the flow
```

>   To display statistics of a particular flow:

```
switch:admin> flow --show myflow2
=========================================================
Name      : myflow2      Features: gen(Activated)
Definition: IngrPort(3),SrcDev(0x010203),DstDev(0x020304)
```

```
Flow Generator (Activated):
----------------------
|  SrcDev  |  DstDev  |
----------------------
| 0x010203 | 0x020304 |
----------------------
Number of frames generated from IngrPort : 1.50G
============================================================
```

To display the statistics of the Flow Monitor feature:

```
switch:admin> flow --show myflow1 -feature monitor
========================================================================
===
Name      : myflow1     Features: mon(Activated)
Definition: IngrPort(10),SrcDev(0x020a00),DstDev(0x030000)

Flow Monitor (Activated):
Monitor time:  | Tue Jun 25 04:20:06 PDT 2013 |
----------------------------------------------------------
------------------------------------------------------------------------
--- \
|      Frame Count    |    Frames Per Sec.   |      Byte count       \
|   Tx  /   Rx  / Total |   Tx  /   Rx  / Total |   Tx  /   Rx  / Total \
------------------------------------------------------------------------
--- \
| 18.20G/    0 / 18.20G|786.52k/    0 /786.52k| 73.48T/    0 / 73.48T \
------------------------------------------------------------------------
--- \


========================================================================
==== \
      ----------------------------------------------
      |    Throughput(Bps)    |Frame Size(Bytes)|
      |   Tx  /   Rx  / Total |   Tx   /   Rx   |
      ----------------------------------------------
      |  1.56G/     0 /  1.56G|   --   /   --   |
      ----------------------------------------------
      ==========================================
```

To display the monitor statistics from a particular source to destination on a specified LUN:

```
switch:admin> flow --show lunflow
========================================================================
====
Name : lunflow  Features: mon(Activated)
Definition: IngrPort(5),SrcDev(0x010502),DstDev(0x030700),Lun(4)
Flow Monitor:
Monitor time: | Thu Jun 06 15:15:39 UTC 2013 |
----------------------------------------------------------
------------------------------------------------------------------------
--- \
| I/O Count           | I/O Per Sec.(IOPS)   | I/O bytes Transferred \
| Reads / Writes/ Total | Reads / Writes/ Total | Reads / Writes/ Total
\
```

```
--------------------------------------------------------------------------
--- \
| 44.92k/ 44.94k/ 89.85k| 2.00k/ 2.00k/ 4.01k  | 5.88M/ 5.89M/ 11.77M
\
--------------------------------------------------------------------------
--- \
==========================================================================
=== \
        ------------------------
        | I/O bytes Per Sec.    |
        | Reads / Writes/ Total |
        ------------------------
        | 2.62M/ 2.62M/ 5.25M   |
        ------------------------
        ========================
```

To display the Flow Monitor statistics for bidirectional traffic:

```
switch:admin> flow --show endtoendflow -feature monitor
==========================================================================
===
Name : endtoendflow Features: mon(Activated)
Definition: IngrPort(1,5),SrcDev(010500),DstDev(040900),BiDir
Flow Monitor:
Monitor time: | Thu Jun 06 15:15:39 UTC 2013 |
-------------------------------------------------------
--------------------------------------------------------------------------
- \
| Frame Count        | Frames Per Sec.       | Byte count          \
| Tx / Rx / Total    | Tx / Rx / Total       | Tx / Rx / Total     \
--------------------------------------------------------------------------
- \
| 2.92M/ 2.96M/ 5.88M | 159.31k/161.78k/321.10k | 5.99G/ 5.99G/ 11.99G
\
--------------------------------------------------------------------------
- \
        ---------------------------------------------
        | Throughput(Bps)         |Frame Size(Bytes) |
        | Tx / Rx / Total         | Tx / Rx          |
        ---------------------------------------------
        | 327.15M/327.28M/654.44M | 2052 / 2020       |
        ---------------------------------------------
--------------------------------------------------------------------------
---- \
|     I/O Count       |  I/O Per Sec.(IOPS) | I/O bytes Transferred \
| Reads / Writes/ Total | Reads / Writes/ Total | Reads / Writes/ Total
\
--------------------------------------------------------------------------
---- \
| 44.92k/ 44.94k/ 89.85k | 2.00k/ 2.00k/ 4.01k  | 5.88G/ 5.89G/ 11.77G
\
--------------------------------------------------------------------------
---- \
```

```
==========================================================================
==== \
      --------------------------
      | I/O bytes Per Sec.      |
      | Reads / Writes/ Total   |
      | 262.84M/262.73M/525.68M |
      --------------------------
      ==========================
```

To display the monitor statistics for a flow:

```
switch:admin> flow --show flowLearn -feature monitor
--------------------------------------------------------------------------
----- \
| SID(*) | DID(*) | Rx Frames Count | Rx Frames per Sec. | Rx Bytes
Count  \
--------------------------------------------------------------------------
----- \
| 010500 | 030700 | 2.92M           | 159.31k            | 5.99G       \
| 010501 | 030700 | 1.92M           | 100.22k            | 4.91G       \
| 010502 | 030700 | 0.92M           | 51.81k             | 2.36G       \
| 010500 | 040900 | 2.92M           | 259.31k            | 7.89G       \
| 010501 | 040900 | 1.92M           | 159.31k            | 3.72G       \
| 010502 | 040900 | 0.92M           | 159.31k            | 1.08G       \
--------------------------------------------------------------------------
----- \
| *      | *      | 12.72M          | 770.37K            | 25.86G      \
--------------------------------------------------------------------------
----- \
      ---------------------------------------------
      | Rx Throughput(Bps) | Avg Rx Frm Sz(Bytes)|
      ---------------------------------------------
      | 627.15M            | 2052                |
      | 444.62M            | 1052                |
      | 314.17M            | 452                 |
      | 327.15M            | 2052                |
      | 327.15M            | 1052                |
      | 327.15M            | 452                 |
      ---------------------------------------------
      | 2.68G              | 1192                |
      ---------------------------------------------
```

To display the statistics for the Flow Mirror feature in learning mode:

```
switch:admin> flow --show mirFlow -feature mirror
Name : mirFlow        Features: mir(Activated)
Definition: EgrPort(17),DstDev(0x051100),BiDir
Flow Mirror:
--------------------------------------------------------------- \
| SID(*) | DID(*) | OXID | RXID | SOF   | EOF  | Frame_type  \
--------------------------------------------------------------- \
| 051600 | 051100 | 0883 | ffff | SOFi3 | EOFt | SCSIRead    \
| 051600 | 051100 | 0191 | 0bce | SOFn3 | EOFn | Data        \
| 051600 | 051100 | 0c8f | ffff | SOFi3 | EOFt | SCSIWrite   \
| 051600 | 051100 | 0017 | ffff | SOFi3 | EOFt | SCSIWrite   \
```

```
| 051600 | 051100 | 0191 | 0bce | SOFn3 | EOFn | Data            \
   -----------------------
   | Dir| Time-Stamp     |
   -----------------------
   | Tx | Jun 10 11:08:10 |
   | Tx | Jun 10 11:08:10 |
   | Tx | Jun 10 11:08:10 |
   | Tx | Jun 10 11:08:10 |
   | Tx | Jun 10 11:08:10 |
```

To display all the devices zoned with device at port '11' (F_Port) as destination:

```
switch:admin> flow --show -allzoned -src "*" -dst 0x190b00 -egr 11
Active Flows:
---------------------------------------------------------
|  SrcDev                              | DstDev    |
---------------------------------------------------------
| 0x21400 0x21e00 0x21f00 0x31000 0x31100   | 0x190b00  |
---------------------------------------------------------
```

To display all the devices zoned with device at port 11 (F_Port) as source:

```
switch:admin> flow --show -allzoned -src "*" -dst * -ing 11
Active Flows:
---------------------------------------------------------
|  SrcDev   |            DstDev                      |
---------------------------------------------------------
| 0x190b00  | 0x21400 0x21e00 0x21f00 0x31000 0x31100   |
---------------------------------------------------------
```

To display all the zoned devices for port 15 (E_Port):

```
switch:admin> flow --show -allzoned -src "*" -dst "*" -ing 15
Active Flows:
---------------------------------------------------------
|  SrcDev   | DstDev                                 |
---------------------------------------------------------
| 0x190a00  | 0x21400 0x21e00 0x21f00 0x31000 0x31100   |
---------------------------------------------------------
| 0x190b00  | 0x21400 0x21e00 0x21f00 0x31000 0x31100   |
---------------------------------------------------------
```

To display all the zoned devices for a flow:

```
switch:admin> flow --create flow3 -fe mon -src "*" -dst 0x190b00 -egr 11
switch:admin> flow --show flow3 -allzoned
Active Flows:
-------------------------------------------------------
|  SrcDev                                | DstDev    |
-------------------------------------------------------
| 0x21400 0x21e00 0x21f00 0x31000 0x31100 | 0x190b00 |
-------------------------------------------------------
```

To display the statistics for the Flow Mirror feature in verbose mode:

```
switch:admin> flow --show mirFlow1 -feature mirror -verbose
Name : mirFlow1    Features: mir(Activated)
Definition: EgrPort(1/5),SrcDev(010200),DstDev(*),BiDir
```

```
Flow Mirror:
-----------------------------------------------------------------------
--------
Time-Stamp    | Dir | SOF  | EOF  | Frame_Type | Frame Contents
|
-----------------------------------------------------------------------
--------
Jun 04 08:27:04 | Tx  | SOFi3 | EOFt | SCSI3_Res  | 06040500 00010200
08290000
009a0fd3 00000000 00000000 00000000 00000001 5f010300 00000000
18000000 00000000
Jun 04 08:27:04 | Tx  | SOFi3 | EOFt | SCSITxRdy  | 05040500 00010200
08890000
07ce01ca 00000000 00000000 00000018 00000000
Jun 04 08:27:04 | Rx  | SOFi3 | EOFt | Data       | 01010200 00040500
08090008
089a0f71 00000000 00000000 ffaabbcc 00000000 00000000 00000000
00000000
Jun 04 08:27:04 | Rx  | SOFi3 | EOFt | SCSIGoodSts | 07010200 00040500
08990000
089a0f71 00000000 00000000 00000000 00000000 00000000 00000000
00000000
```

To display the feature statistics in sorted order:

```
switch:admin> flow --show myflow -feature monitor -sortby column1
Monitor time:  | Fri Jun 07 03:56:24 MDT 2013 |
----------------------------------------------------------
======================================================================
Name      : myflow Features: gen(Activated), mon(Activated)
Definition: EgrPort(4,8),SrcDev(0x*),DstDev(0x040800)
Flow Monitor:
--------------------------------------------------------------------- \
|SID(*)| Tx Frames Count | Tx Frames per Sec. |  Tx Bytes Count   \
--------------------------------------------------------------------- \
| 40600|     11.99M      |      169.68k        |      25.08G        \
| 40700|     11.99M      |      169.86k        |      25.08G        \
| 40900|     28.49M      |      403.22k        |      59.38G        \
      -----------------------------------------------
      | Tx Throughput(Bps) | Avg Tx Frm Sz(Bytes)|
      -----------------------------------------------
      |       354.97M       |        2088         |
      |       355.35M       |        2088         |
      |       124.48M       |        2080         |
```

To display the SCSI frame statistics for the Flow Monitor feature:

```
switch:admin> flow --show scsicsflow -feature monitor
-------------------------
Frame Statistics
-------------------------------------------
| Tx Frames Count | Tx Frames per Sec. |
-------------------------------------------
| 238             | 5                   |
-------------------------------------------
```

To display the control parameters:

```
switch:admin> flow --show -ctrlcfg
SimPort Information
-----|------|--------|------------------------|----------------- \
Slot | Port | PID    |          PWWN          | SID Frame Count  \
-----|------|--------|------------------------|----------------- \

1    | 2    | 050200 | 20:02:00:05:1e:e2:8e:00 |       0K          \
     |------------------
     | DID Frame Count |
     |------------------
     |      19.46K     |
```

To display the control parameters for the Flow Generator feature:

```
switch:admin> flow --show -ctrlcfg -feature generator
Control Parameters of Generator
Size: 1024
Pattern: SCSITur
```

To display the statistics for the Flow Mirror feature on ingress port (1/10) without creating a flow (show on demand):

```
switch:admin> flow --show -srcdev 0x030000 -ingrport 1/10 -feature mirror
```

To display the flow dashboard data:

```
switch:admin> flow --show -feature fabinfo -srcdev "*" -egrport 17
Flow Dashboard Information:
==========================

Topology Data:
-------------

srcDev (0x170500), dstDev(0x31100)
srcDev(0x170500) <-> (23/1#, 23/5) <<-> (3/7, 3/17) <-> dstDev(0x31100)

srcDev (0x190a00), dstDev(0x31100)
[srcDev: 0x190a00]<-> (25/10, 25/2)<->(23/2#, 23/5)<->(3/7, 3/17#)<->
[dstDev:0x31100]
[srcDev:0x190a00]<-> (25/10, 25/3)<->(21/3, 21/1#)<->(3/4, 3/17#)<->
[dstDev:0x31100]
[srcDev:0x190a00]<-> (25/10, 25/4)<->(21/4, 21/1#)->(3/4, 3/17#)<->
[dstDev:0x31100]

# "Indicates there are MAPS violations on these ports"

Switch Specific Data:
====================================================================
========

SwitchDomain       : 3 (0x3)
Name: sw0   Model  : 121.3   Uptime: (41 days 0 hrs 02 mins)
FirmwareVersion    : v8.0.0
OperationalStatus  : Healthy
```

```
RebootReason          : Reboot
Fenced Ports          : 24
Decommissioned Ports : None
Quarantined Ports     : None

MAPS violation:
---------------
Port Health(24)   |6   | defALL_HOST_PORTSCRC_2|09/17/14
09:13:24|Port17| 5 |
Port Health(15)   |2   | defNON_E_F_PORTSLF_0 |09/17/14
09:18:24|Port17| 3 |


========================================================================
========

SwitchDomain: 25 (0x19)
Name: sw0   Model: 121.3   Uptime: (40 days 21 hrs 12 mins)
FirmwareVersion      : v8.0.0
OperationalStatus    : CRITICAL Reason : FAULTY_BLADE
RebootReason         : Reboot
Fenced Ports         : None
Decommissioned Ports : None
Quarantined Ports    : None


Category(Rule Count)|RepeatCount|Rule Name  |Execution Time  |Object
|Triggered
    Value(Units)|
------------------------------------------------------------------------
--------
No violations on the ports in the flow path

========================================================================
========

SwitchDomain: 21 (0x15)
Name: sw0   Model: 121.3   Uptime: (40 days 03 hrs 10 mins)
FirmwareVersion      : v8.0.0
OperationalStatus    : Healthy
RebootReason         : Reboot
Fenced Ports         : None
Decommissioned Ports : None
Quarantined Ports    : None

No MAPS violations
========================================================================
========
```

To display the bottom five monitoring entries based on throughput:

```
switch:admin> flow --show sys_mon_all_fports -fe mon -increase 5
========================================================================
================================================
```

```
Name     : sys_mon_all_fports Features: mon(Activated)        noConfig:
Off
Definition: IngrPort(*),SrcDev(*),DstDev(*)

Flow Monitor (Activated):
Monitor time:  | Wed Dec 10 23:49:48 UTC 2014 |
-------------------------------------------------------


--------------------------------------------------------------------------
--------------------------------------------------------


|Ingr(*)|SID(*)|DID(*)| Rx Frames Count | Rx Frames per Sec. |  Rx Bytes
Count | Rx Throughput(Bps) | Avg Rx Frm Sz(Bytes)|


--------------------------------------------------------------------------
-------------------------------------------------------
|13     |010d00|010a00|     2.26M    |      377.30k     |      1.51G
|      259.38M       |          720          |
|14     |010e00|010d00|     1.98M    |      330.81k     |      1.74G
|      298.36M       |          948          |
|18     |011200|010c00|     2.28M    |      381.04k     |      1.76G
|      300.72M       |          828          |
|20     |011400|011200|     1.89M    |      315.93k     |      1.78G
|      303.97M       |          1008         |
|16     |011000|011200|     1.99M    |      333.30k     |      1.80G
|      307.82M       |          968          |
--------------------------------------------------------------------------
------------------------------------------------------
|*      |    *|    *|     92.41M    |      15.40M     |      99.69G
|       16.61G       |          1160         |
--------------------------------------------------------------------------
-------------------------------------------------------
|SID(*)|DID(*)|     I/O Count      |   I/O Per Sec.(IOPS) | I/O
bytes Transferred |   I/O bytes Per Sec.  |
|      |      |      | Reads / Writes/ Total | Reads / Writes/ Total | Reads
/ Writes/ Total | Reads / Writes/ Total |
--------------------------------------------------------------------------
-------------------------------------------
|01c700|041000||187.07M/187.07M/374.15M| 38.99k/ 38.99k/ 77.99k|
89.20G/ 89.20G/178.41G| 19.04M/ 19.04M/ 38.08M|
--------------------------------------------------------------------------
------------------------------------------
| I/O Brief Metrics:
|
--------------------------------------------------------------------------
------------------------------------------
|SID(*) |DID(*)|    RD|      Max Time      |       Max Time       |
Avg IOs/sec      |       Max Count       |
|       |      |   WR|      Comp Time      |       First Resp      |
IOPS        |        Pending IOs       |
|       |      |      |      6 sec / All    |       6 sec / All    |      6
sec / All      |       6 sec / All      |
```

```
           --------------------------------------------------------------
           -----------------------------------------
           --------------------------------------------------------------
           -----------------------------------------
           |01c700 |041000|   RD|   1.32m   /    5.50m  |   1.25m   /    5.29m   |
           10.03k  /   8.48k   |    12    /     13    |
           |01c700 |041000|   WR|   2.14m   /    5.66m  |   1.26m   /    5.34m   |
           10.03k  /   8.48k   |    16    /     16    |
           |01c080 |040200|   RD|   1.32m   /    5.50m  |   1.25m   /    5.29m   |
           10.03k  /   8.48k   |    12    /     13    |
           |01c080 |040200|   WR|   2.14m   /    5.66m  |   1.26m   /    5.34m   |
           10.03k  /   8.48k   |    16    /     16    |

            Note: u - microsecond, m - millisecond, s - second K - Kilobyte, M -
           Megabyte,
            G - Gigabyte, T - Terabyte, P - Petabyte
           ======================================================================
           ==================================================
```

To display the cumulative statistics output pertaining to the specified source device:

```
switch:admin> flow --show sys_mon_all_fports -srcdev 010c00 -dstdev 010000
======================================================================
==================================================
Name      : sys_mon_all_fports Features: mon(Activated) noConfig: Off
Definition: IngrPort(*)SrcDev(010c00),DstDev(010000) Flow Monitor
(Activated):
Monitor time:  | Tue May 16 07:44:57 UTC 2017
----------------------------------------------------------------------
--------------------------------------------------------------
|Ingr(*)|SID(*)|DID(*)| Rx Frames Count | Rx Frames per Sec. |  Rx Bytes
Count | Rx Throughput(Bps) | Avg Rx Frm Sz(Bytes)|
----------------------------------------------------------------------
-----------------------------------------
|12    |010c00|010000|    124.60M    |     348.63k     |    231.31G
|      662.71M    |        1996
| --------------------------------------------------------------------
-----------------------------------------
| I/O Byte Performance:
----------------------------------------------------------------------
-----------------------------------------
|         Metric        |   IO Size  |  I/O Byte Count  |    Max(Bps)
|       Avg(Bps)
|                       |            |       All        |      All
|    6 sec   /    All
----------------------------------------------------------------------
-----------------------------------------
| RD IO Count           |  <8K       |                  |
|           /
|                       | 8K - <64K  |                  |
|           /
|                       | 64K - <512K|   239.90G        |   690.29M
|   681.43M  /   677.18M
```

```
|                           | >=512K      |                  |
|                /
|                                  | ALL            |     239.90G         |
690.29M       |     681.43M  /    677.18M
------------------------------------------------------------------------
----------------------------------------
| WR IO Count                | <8K         |                  |
|                /
|                                  | 8K - <64K  |                  |
|                /
|                                  | 64K - <512K|   239.90G         |     690.38M
|    681.54M  /    677.18M
|                                  | >=512K      |                  |
|                /
|                                  | ALL            |     239.90G         |
690.38M       |     681.54M  /    677.18M
------------------------------------------------------------------------
----------------------------------------
| I/O Count Performance:
------------------------------------------------------------------------
----------------------------------------
|        Metric           |  IO Size  | I/O Count        |    Max(IOPS)
|        Avg(IOPS)
|                         |           |      All          |       All             |
6 sec    /     All     |
------------------------------------------------------------------------
----------------------------------------
| RD IO Count                | <8K         |                  |
|                /
|                                  | 8K - <64K  |                  |
|                /
|                                  | 64K - <512K|    1.82M          |     5.26k
|     5.19k  /      5.16k
|                                  |>=512K       |                  |
|                /
|                                  | ALL            |     1.82M          |
5.26k         |     5.19k  /      5.16k
------------------------------------------------------------------------
----------------------------------------
| WR IO Count                | <8K         |                  |
|                /
|                                  | 8K - <64K  |                  |
|                /
|                                  | 64K - <512K|    1.82M          |     5.26k
|     5.19k  /      5.16k
|                                  | >=512K      |                  |
|                /
|                                  | ALL            |     1.82M          |     5.26k
|     5.19k  /      5.16k
------------------------------------------------------------------------
----------------------------------------
| I/O Latency Metrics:
|
```

```
----------------------------------------------------------------------
--------------------------
|           Metric         |   IO Size  |         Max          |
AVG          |
|                          |            |    6 sec   /    All   |
6 sec   /     All     |
----------------------------------------------------------------------
--------------------------
| RD CMD -> Status Time    | <8K        |        /             |
/           |
|                          | 8K - <64K  |        /             |
/           |
|                          | 64K - <512K|    2.64m  /    2.85m  |
826u   /     828u    |
|                          | >=512K     |        /             |
/           |
|                          | ALL        |    2.64m  /    2.85m  |
826u   /     828u    |
----------------------------------------------------------------------
--------------------------
| WR CMD -> Status Time    | <8K        |        /             |
/           |
|                          | 8K - <64K  |        /             |
/           |
|                          | 64K - <512K|    1.64m  /    2.08m  |
496u   /     490u    |
|                          | >=512K     |        /             |
/           |
|                          | ALL        |    1.64m  /    2.08m  |
496u   /     490u    |
----------------------------------------------------------------------
--------------------------
| RD CMD -> 1st Data Time  | <8K        |        /             |
/           |
|                          | 8K - <64K  |        /             |
/           |
|                          | 64K - <512K|    117u   /    1.22m  |
33u   /     33u   |
|                          | >=512K     |        /             |
/           |
|                          | ALL        |    117u   /    1.22m  |
33u   /     33u   |
----------------------------------------------------------------------
--------------------------
| WR CMD -> 1st XFER_RDY Time| <8K      |        /             |
/           |
|                          | 8K - <64K  |        /             |
/           |
|                          | 64K - <512K|    246u   /    1.21m  |
69u   /     69u    |
|                          | >=512K     |        /             |
/           |
```

```
|                                   | ALL        |      246u  /      1.21m  |
69u   /        69u   |
    --------------------------------------------------------------------------
----------------------------
| RD/WR -> 1st Data/XFER_RDY | ALL        |      246u  /      1.22m  |
51u   /        51u   |
    --------------------------------------------------------------------------
----------------------------
| RD Pending IOs            | <8K       |            /           |
/            |
|                            | 8K - <64K |            /           |
/            |
|                            | 64K - <512K|       8   /         8   |
4    /         8    |
|                            | >=512K     |            /           |
/            |
    --------------------------------------------------------------------------
----------------------------
| WR Pending IOs            | <8K       |            /           |
/            |
|                            | 8K - <64K |            /           |
/            |
|                            | 64K - <512K|       8   /         8   |
3    /         6    |
|                            | >=512K     |            /           |
/            |
    --------------------------------------------------------------------------
----------------------------
    --------------------------------------------------------------------------
----------------------------
 Note: u - microsecond, m - millisecond, s - second K - Kilobyte, M -
Megabyte,
 G - Gigabyte, T - Terabyte, P - Petabyte


    ========================================================================
========================
```

To display flow dashboard information for a specific domain:

```
switch:admin> flow --show -feature fabinfo -srcdev 0x011100 \
   -egrport 17 -verbose -domain 3
Flow Dashboard Information:
==========================

Switch Specific Data:

    ========================================================================
========

SwitchDomain: 3 (0x3)
Name: sw0    Model: 121.3    Uptime: (41 days 0 hrs 02 mins)
FirmwareVersion : v8.0.0
OperationalStatus: Healthy
RebootReason: Reboot
```

```
MAPS violation:
---------------
Port Health(24)  |6       | defALL_HOST_PORTSCRC_2|09/17/14
09:13:24|Port17| 5 |
Port Health(15)  |2       | defNON_E_F_PORTSLF_0 |09/17/14
09:18:24|Port17| 3 |

MAPS history data:
------------------

Stats(Units)  Current  05/06/15   05/05/15   05/04/15   04/30/15   04/
29/15   04/28/15
              Port(val) Port(val)  Port(val)  Port(val)  Port(val)
Port(val)  Port(val)
-----------------------------------------------------------------------
--------------------
CRC       32(3)    32(2)     46(34)     45(7)      32(1)        -
32(7)
    42(2)    42(2)     43(33)     44(6)      33(1)        -       33(7)
    12(1)    12(1)     42(31)     42(5)      34(1)        -       34(7)
    06(1)    06(1)     47(20)     46(5)      35(1)        -       35(7)

ITW 32(11)   32(8)     45(2300)   45(539)    32(3)      0(1)    32(21)
    33(3)    33(3)     40(2282)   40(522)    33(1)        -       33(7)
    34(3)    34(3)     44(2276)   41(519)    34(1)        -       34(7)
    35(3)    35(3)     41(2269)   44(517)    35(1)        -       35(7)
```

To display statistics for a specific namespace ID (nsid) of a nvme flow:

```
switch:admin> flow --show nv11
=======================================================================
=====
Name     : nv11Features: mon(Activated)noConfig: Off
Definition: IngrPort(863),SrcDev(0x147800),DstDev(0xbd0700),NSID(1)

Flow Monitor (Activated):
Monitor time: | Fri Feb 09 13:24:30 UTC 2018 |
-----------------------------------------------------------------------
--------------------------
| I/O Byte Performance:
| ---------------------------------------------------------------------
--------------------------
|Metric      |   IO Size   | I/O Byte Count  |   Max(Bps)     |
Avg(Bps)        |
|            |             |       All       |      All        |
6 sec   /   All     |
 ----------------------------------------------------------------------
--------------------------
| RD IO Count | <8K        |     6.67G       |   451.24k      |
264.78k  /   304.00k  |
|             | 8K - <64K  |     2.32G       |   180.72k      |
88.71k  /   105.80k  |
```

```
|                | 64K - <512K|     2.06T        |     108.35M        |
91.71M  /    94.17M  |
|                | <=512K     |                 |                    |
/           |
|                | ALL        |     2.07T        |     108.65M        |
92.07M  /    94.58M  |

-------------------------------------------------------------------------
---------------------------
| WR IO Count | <8K         |                 |                    |
/           |
              | 8K - <64K  |                 |                    |
/           |
              | 64K - <512K|     1.92T        |     100.88M        |
85.19M  /    87.65M  |
     | >=512K    |                 |                 |           /           |
      | ALL          |     1.92T       |     100.88M       |      85.19M
/     87.65M  |
-------------------------------------------------------------------------
---------------------------
| I/O Count Performance:
-------------------------------------------------------------------------
---------------------------
|Metric      |   IO Size   |   I/O Count    |     Max(IOPS)    |
Avg(IOPS)         |
|            |     All     |     All        |   6 sec  /    All   |
-------------------------------------------------------------------------
---------------------------
| RD IO Count | <8K         |     1.63M       |       110          |
64   /       74   |
|             | 8K - <64K  |   113.03k       |        8           |
4   /        5    |
|             | 64K - <512K|    31.44M       |      1.64k          |
1.39k  /     1.43k  |
|             | >=512K     |                 |                    |
/           |
|             | ALL        |    33.19M       |     1.70k          |
1.46k  /     1.51k  |
-------------------------------------------------------------------------
---------------------------
| WR IO Count | <8K         |                 |                    |
/           |
|             | 8K - <64K  |                 |                    |
/           |
|             | 64K - <512K|    29.37M       |     1.53k          |
1.29k  /     1.33k  |
|             | >=512K     |                 |                    |
/           |
|             | ALL        |    29.37M       |     1.53k          |
1.29k  /     1.33k  |
-------------------------------------------------------------------------
---------------------------
```

```
| I/O Latency Metrics:
|
-----------------------------------------------------------------------
--------------------------
| Metric                 |  IO Size |          Max          |
AVG            |
|                         |          |    6 sec   /    All    |   6
sec   /    All    |
-----------------------------------------------------------------------
--------------------------
| RD CMD -> Status Time  | <8K       |    3.74m  /    37.72m  |
893u  /      771u   |
|                         | 8K - <64K |    801u  /     5.46m  |
575u  /      659u   |
|                         | 64K - <512K|    5.24m  /    78.00s  |
2.87m  /      2.12m  |
|                         | >=512K     |          /           |
/            |
|                         | ALL        |    5.24m  /    78.00s  |
2.77m  /      2.05m  |
-----------------------------------------------------------------------
--------------------------
| WR CMD -> Status Time  | <8K       |          /           |
/            |
|                         | 8K - <64K |          /           |
/            |
|                         | 64K - <512K|    8.00m  /    49.96s  |
5.16m  /      3.93m  |
|                         | >=512K     |          /           |
/            |
|                         | ALL        |    8.00m  /    49.96s  |
5.16m  /      3.93m  |
-----------------------------------------------------------------------
--------------------------
| RD CMD -> 1st Data Time| <8K       |    3.73m  /    37.71m  |
881u  /      762u   |
|                         | 8K - <64K |    778u  /     5.41m  |
554u  /      640u   |
|                         | 64K - <512K|    4.73m  /    78.00s  |
2.67m  /      1.97m  |
|                         | >=512K     |          /           |
/            |
|                         | ALL        |    4.73m  /    78.00s  |
2.57m  /      1.90m  |
-----------------------------------------------------------------------
--------------------------
| WR CMD -> 1st          | <8K       |          /           |
/            |
|  XFER_RDY Time          | 8K - <64K |          /           |
/            |
|                         | 64K - <512K|    4.60m  /    49.96s  |
2.45m  /      1.83m  |
```

```
|                          |  >=512K      |              /            |
/              |
|                          |  ALL         |    4.60m   /    49.96s  |
2.45m   /     1.83m   |
------------------------------------------------------------------------
---------------------------
|  RD/WR -> 1st Data/XFER_RDY |  ALL       |    4.73m   /    78.00s  |
2.51m   /     1.87m   |
------------------------------------------------------------------------
---------------------------
|  RD Pending IOs          | <8K          |        1   /        4   |
1    /        2    |
|                          |  8K - <64K   |        2   /        5   |
1    /        3    |
|                          |  64K - <512K |       13   /       17   |
5    /       11    |
|                          |  >=512K      |            /            |
/            |
------------------------------------------------------------------------
---------------------------
|  WR Pending IOs          | <8K          |            /            |
/            |
|                          |  8K - <64K   |            /            |
/            |
|                          |  64K - <512K |       16   /       24   |
8    /       17    |
|                          |  >=512K      |            /            |
/            |
------------------------------------------------------------------------
---------------------------

Note: u - microsecond, m - millisecond, s - second K - Kilobyte, M -
Megabyte, G - Gigabyte,
T - Terabyte, P - Petabyte
========================================================================
===========================
```

To display flow statistics for all namespace ID (nsid) of the nvme flows:

```
switch:admin> flow --show nvme_egr_act   \
========================================================================
=======================================================
Name     : nvme_egr_act              Features: mon(Activated)
noConfig: Off
Definition: EgrPort(0),SrcDev(0x490000),DstDev(0x620900),NSID(all)

Flow Monitor (Activated):
Monitor time:  | Wed Oct 11 13:35:53 UTC 2017
------------------------------------------------------------------------
---------------------------------
| Tx Frames Count | Tx Frames per Sec. |  Tx Bytes Count | Tx
Throughput(Bps) | Avg Tx Frm Sz(Bytes)|
------------------------------------------------------------------------
---------------------------------
```

```
|      2.19G    |      365.02k    |      3.95T      |       688.19M
|       1980          |
-----------------------------------------------------------------------
-------------------------------
-----------------------------------------------------------------------
----------------------------------------
| I/O Byte Performance:
|
-----------------------------------------------------------------------
----------------------------------------
|          Metric   |   IO Size    |   I/O Byte Count  |    Max(Bps)
|      Avg(Bps)        |
|                   |              |       All         |       All
|    6 sec   /     All    |
-----------------------------------------------------------------------
----------------------------------------
| RD IO Count     | <8K       |    4.00M      |    42.30k      |
/      196   |
|                | 8K - <64K |   11.70M       |   117.34k       |
/      574    |
|                 | 64K - <512K|    4.23T       |     1.33G        |
687.13M   /   207.67M  |
|                 | >=512K    |                |                |
/          |
|                 | ALL       |     4.23T       |     1.33G
|   687.13M  /   207.67M  |
-----------------------------------------------------------------------
-----------------------------------
| WR IO Count     | <8K       |                |                |
/          |
|                 | 8K - <64K |                |                |
/          |
|                 | 64K - <512K|    4.23T       |     1.34G        |
689.14M  /   207.57M  |
|                 | >=512K    |                |                |
/          |
|                 | ALL       |     4.23T       |     1.34G
|   689.14M  /   207.57M  |
-----------------------------------------------------------------------
----------------------------------------
-----------------------------------------------------------------------
----------------------------------------
| I/O Count Performance:
|
-----------------------------------------------------------------------
----------------------------------------
|          Metric   |   IO Size  |   I/O Count       |    Max(IOPS)
|      Avg(IOPS)        |
|                   |            |       All         |       All         |
6 sec   /     All    |
-----------------------------------------------------------------------
----------------------------------------
```

```
| RD IO Count      | <8K       |       362       |       18       |
/          |
|                  | 8K - <64K |       92        |       7        |
/          |
|                  | 64K - <512K|   34.07M        |   10.75k       |
5.57k   /     1.67k   |
|                  | >=512K    |                 |                |
/          |
|                  | ALL       |    34.07M       |   10.75k       |
|    5.57k  /     1.67k   |
-----------------------------------------------------------------------
---------------------------------------
| WR IO Count      | <8K       |                 |                |
/          |
|                  | 8K - <64K |                 |                |
/          |
|                  | 64K - <512K|   34.13M       |   10.86k       |
5.55k   /     1.67k   |
|                  | >=512K    |                 |                |
/          |
|                  | ALL       |    34.13M       |   10.86k       |
|    5.55k  /     1.67k   |
-----------------------------------------------------------------------
--------------------------------------
-----------------------------------------------------------------------
---------------------------
| I/O Latency Metrics:
|
-----------------------------------------------------------------------
---------------------------
|         Metric          |  IO Size |        Max       |
AVG           |
|                         |          |   6 sec  /    All   |
6 sec   /     All    |
-----------------------------------------------------------------------
---------------------------
| RD CMD -> Status Time   | <8K      |        /   125.56s |
/    12.46s  |
|                         | 8K - <64K |       /   116.24s  |
/    19.34s  |
|                         | 64K - <512K|  117.70s  /   228.66s  |
1.57s  /     1.39s  |
|                         | >=512K   |        /          |
/          |
|                         | ALL      |   117.70s  /   228.66s  |
|    1.57s  /     1.39s  |
-----------------------------------------------------------------------
---------------------------
| WR CMD -> Status Time   | <8K      |        /          |
/          |
|                         | 8K - <64K |       /          |
/          |
```

```
|                          | 64K - <512K|   120.73s  /    228.44s  |
1.04s  /    939.84m  |
|                          | >=512K      |           /           |
/              |
|                          | ALL         |   120.73s  /    228.44s
|    1.04s  /    939.84m  |
------------------------------------------------------------------------
---------------------------
| RD CMD -> 1st Data Time  | <8K         |          /    48.85s  |
/    572.08m  |
|                          | 8K - <64K   |          /    38.65s  |
/    514.82m  |
|                          | 64K - <512K|   117.70s  /    131.80s  |
1.16s  /       1.05s  |
|                          | >=512K      |          /           |
/              |
|                          | ALL         |   117.70s  /    131.80s
|    1.16s  /       1.05s  |
------------------------------------------------------------------------
---------------------------
| WR CMD -> 1st XFER_RDY Time| <8K       |          /           |
/              |
|                          | 8K - <64K   |          /           |
/              |
|                          | 64K - <512K|   120.73s  /    131.88s  |
906.41m  /    815.27m  |
|                          | >=512K      |          /           |
/              |
|                          | ALL         |   120.73s  /    131.88s
|    906.41m  /    815.27m  |
------------------------------------------------------------------------
---------------------------
| RD/WR -> 1st Data/XFER_RDY | ALL       |   120.73s  /    131.88s  |
1.03s  /    934.72m  |
------------------------------------------------------------------------
---------------------------
| RD Pending IOs           | <8K         |          /        59  |
/        26  |
|                          | 8K - <64K   |          /        23  |
/        15  |
|                          | 64K - <512K|      112   /     9.59k  |
43  /       145  |
|                          | >=512K      |          /           |
/              |
------------------------------------------------------------------------
---------------------------
| WR Pending IOs           | <8K         |          /           |
/              |
|                          | 8K - <64K   |          /           |
/              |
|                          | 64K - <512K|       69   /     6.93k  |
29  /       134  |
```

```
|                               | >=512K    |            /             |
/             |
------------------------------------------------------------------------
-------------------------
------------------------------------------------------------------------
-------------------------
Note:
u - microsecond, m - millisecond, s - second
K - Kilobyte, M - Megabyte, G - Gigabyte, T - Terabyte, P - Petabyte
================================================================================
=========
```

Function

Deleting a flow

Synopsis

flow --delete *flow_name*

Description

Use this command to delete the specified flow from Flow Vision. All the data associated with the flow will be cleared.

Operands

The **--delete** command has the following operands:

flow_name **| all**

Specifies the name of the flow to be deleted. Specify **all** to delete all flows. Use of **all** option prompts for a confirmation.

-force

Executes the command without confirmation. This operand is optional.

Examples

To delete a flow:

```
switch:admin> flow --delete myflow1
```

To delete all flows:

```
switch:admin> flow --delete all
This operation will delete all user defined flows and deactivate pre-
defined flows.
Are you sure? (yes, y, no, n): [no] y
All flows deleted successfully.
```

Function

        Displaying the command help

Synopsis

        flow --help [*operand*] [...]

Description

        Use this command to display the command usage.

Operands

        operand

            Displays the syntax and usage guidelines for the specified operand or sub-option.

Examples

        To display the command usage:

```
switch:admin> flow --help
Description - Perform Flow Vision operations
SYNTAX: flow <Flow_operations>

<Flow_operations>
--create      <flowname> -feature <list>
              <Port options> <Frame options> <Config options>
--delete      <flowname>
--control     [flowname] [-feature <list>]
              [-deviceIdMode <mode> | -portIdMode <mode>]
              [-simport <portID> -enable/-disable]
              [-size <frame size> | -pattern <pattern string>]
              [-enable_wrap/-disable_wrap]
--reset       <flowname> -feature <list>
--activate    <flowname> -feature <list>
--deactivate  <flowname> -feature <list>
--show        [flowname] [-feature <list>]
              [<Port options> <Frame_options>]
              [-count <iterations> | -time <interval> | -verbose]
              [-sortby <field>] [-ctrlcfg]
```

        To display the command usage for an operand:

```
switch:admin> flow --help --create
Description - Create a flow definition for Flow Vision features
SYNTAX: flow --create <flowname> -feature <list>
                  <Port options> <Frame options> <Config options>

<flowname>        : Unique string of characters to identify a flow
-feature <list>   : Comma separated list of Flow Vision features
```

```
                              (mirror, monitor and generator)
            <Port options>
              -ingrport <portID>: Switch receive port on which feature(s) is
            applied
              -egrport <portID>: Switch transmit port on which feature(s) is
            applied

            <Frame options>
              -srcdev <devID>  : FC device that is flow source (SID or PWWN)
              -dstdev <devID>  : FC device that is flow destination (DID or PWWN)
              -sfid <FID>      : FID that is flow source
              -dfid <FID>      : FID that is flow destination
              -lun <LUN ID>    : SCSI LUN identifier
              -frametype <ftyp>: Frame type applicable to the flow
              -srceid <VM UUID>: Source Entity ID(UUID) of the VM
              -nsid <nsid>     : Namespace ID of the NVMe flow

            <Config options>
              -bidir           : Applies Flow Vision features for both directions
            of flow
              -noactivate      : Creates flow without activating the flow
              -noconfig        : Creates flow without saving persistently
```

To display the command usage for an operand and sub-option:

```
switch:admin> flow --help --create -frametype
-frametype <ftyp>: FC frame types applicable to the flow.
                <ftyp> can be one of scsi, srd, swr, srdwr, sres2, sres3,
                    scsirel2, stur, scsiresrel2, scsigoodstatus,
                scsicheckstatus, scsirel3, scsiresrel3, srescnfl, sinq,
                    sxfr, scmdsts, abts, bacc, barjt.
```

See Also

                        None

fosConfig

Displays or modifies Fabric OS features.

Synopsis

```
fosconfig --enable feature
fosconfig --disable feature
fosconfig --show
```

Description

Use this command to enable or disable a feature, or to display the current operating status of features on a switch. This command can be run while the switch is online.

The following features are supported (refer to the Notes for limitations):

- FC Routing service (see **fcrConfigure**)

- Virtual Fabrics (see **lfCfg** and **lsCfg**)

Notes

The features described may not be supported on all platforms. If you attempt to enable a feature that is not supported on your platform, an error message stating "Command not supported on this platform" is displayed.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--enable *feature*

Enables a feature on the switch. Valid values for *feature* include the following:

fcr

Enables the FC Routing service on the switch. The FC Routing service is disabled by default. Use **fosConfig --show** to determine if FCR is enabled or disabled,

When enabling FCR, you may encounter one of the following system messages:

"FC Routing service is in the process of being disabled, please try again after a few minutes." This means that a command to disable the FC Routing service is still in progress. Wait a few minutes and try again.

"FC Routing service is already enabled." This means that the FC Routing service is already enabled.

vf

> Enables Virtual Fabrics. By default, Virtual Fabrics are enabled. Before enabling the Virtual Fabrics, ensure that there are no Administrative Domains (ADs) in effect. Administrative Domains must be disabled before enabling Virtual Fabrics. This command prompts for confirmation, because the chassis reboots after this command is executed.

--disable *feature*

> Disables a feature on the switch. Valid values for *feature* include the following:

fcr

> Disables the FC Routing service on the switch. All enabled EX_Ports and VEX_Ports on the switch must be offline for this command to succeed.
>
> To use this command to disable the FC Routing service only instead of disabling the switch, issue this command, then change the BB fabric ID using **fcrConfigure**.
>
> When disabling the FCR service, you may encounter the following system messages:
>
> *"Please disable all EX/VEX_Ports first before running this command."* This means that there were EX_Ports or VEX_Ports online when this command was issued. Take these ports offline and try the command again.
>
> *"FC Routing service is already disabled"* -This means that the FC Routing service is already disabled.

vf

> Disables Virtual Fabrics on the switch. This command prompts for confirmation, because the chassis reboots after this command is executed.

--show

> Displays the current operating status of features on the switch.

Examples

> To display the operating status of the services on a Brocade 6510:

```
switch:admin> fosconfig --show
FC Routing service:          disabled
Virtual Fabric:              enabled
Ethernet Switch Service:     Service not supported on this Platform
```

> To disable the FC Routing service:

```
switch:admin> fosconfig --disable fcr
 FC Routing service is disabled
```

> To enable the FC Routing service:

```
switch:admin> fosconfig --enable fcr
 FC Routing service is enabled
```

To enable Virtual Fabrics:

```
switch:admin> fosconfig --enable vf
WARNING:  This is a disruptive operation that \
   requires a reboot to take effect.
All EX ports will be disabled upon reboot.
Would you like to continue [Y/N]y
```

To disable Virtual Fabrics:

```
switch:admin> fosconfig --disable vf
WARNING:  This is a disruptive operation that \
   requires a reboot to take effect.
Would you like to continue [Y/N]y
```

See Also

fcrConfigure, switchShow

fosExec

Executes any Fabric OS command on a specified or all the remote domains, logical switches, or AG switches.

Synopsis

```
fosexec --fid FID -cmd "cmd [args]"
fosexec --fid all [-force] -cmd "cmd [args]"
fosexec --domain DID -cmd "cmd [args]"
fosexec --domain all -cmd "cmd [args]"
fosexec --ag switch_name -cmd "cmd [args]"
fosexec --ag all -cmd "cmd [args]"
```

Description

Use this command to execute any Fabric OS command on a specified remote domain, logical switch context, AG switch or all remote domains, logical switches, or AG switches.

The target logical switch is identified by its fabric ID (FID). When used with the **--fid all** option, the specified command is executed in all logical switches.

The target remote domain is identified by its Domain ID (DID). When used with the **--domain all** option, the specified command is executed in all remote domains.

The target AG switch is identified by its name. When used with the **--ag all** option, the specified command is executed in all AG switches connected to the fabric.

The FIDs must be part of the FID permission list associated with the user account. If you execute **fosexec --fid all** and you do not have permission to one or more of the logical switches (FIDs), the command prompts for confirmation to continue with the execution of the command in the FIDs for which you do have permission. You can override the prompt for confirmation with the **-force** option. Refer to **userConfig** help for more information on logical switch access permissions.

Executing chassis-level commands through **fosexec --fid all** results in redundant output.

Use the **configure** command to set the Remote Fosexec feature. By default, the Remote Fosexec feature is disabled.

Notes

The **--domain** option can be executed only if the Remote Fosexec feature is enabled on local and remote switches.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Usage of "|" (pipe) along with the command to be executed in the **--fid** option will yield unexpected results.

Operands

This command has the following operands:

-cmd "*cmd* [*args*]"

Specifies the command to be executed including command options if applicable. The entire command string must be enclosed in double quotation marks. Use a backslash (\) to omit the double quotes, if the double quotes are used in the arguments of the command.

--fid *FID*

Specifies the Fabric ID of the logical switch for which the command is executed.

--fid all

Executes the specified command in all logical switch contexts configured on the physical switch.

-force

Executes the specified command on all logical switches in your permission list without prompting for confirmation.

--domain *DID*

Specifies the Domain ID of the remote switch for which the command is executed.

--domain all

Executes the specified command on all switches in the fabric.

--ag *switch_name*

Specifies the name of the switch for which the command is executed.

--ag all

Executes the specified command on all AG switches connected to the fabric.

Examples

To display switch information for a logical switch with FID 10:

```
switch:admin> fosexec --fid 10 -cmd "switchshow"
------------------------------------
"switchshow" on FID 10
switchName:     switch_10
switchType:     66.1
switchState:    Online
switchMode:     Native
switchRole:     Subordinate
switchDomain:   1
switchId:       fffc01
switchWwn:      10:00:00:05:1e:41:5f:c2
zoning:         ON (lsan_cfg)
```

```
switchBeacon:   OFF
FC Router:      OFF
Allow XISL Use: ON
LS Attributes:  [FID: 10, Base Switch: No, \
   Default Switch: No, Address Mode 0]
Index Slot Port Address Media Speed State     Proto
====================================================
  0    1    0   640000   --    N8   No_Module   FC
  1    1    1   640100   --    N8   No_Module   FC
  2    1    2   640200   --    N8   No_Module   FC
```

To enable port 5/0 on all logical switches:

```
switch:admin> fosexec --fid all -cmd "portenable 5/0"


----------------------------------------------------


"portenable" on FID 128:


----------------------------------------------------


"portenable" on FID 10:

A port or ports is/are not part of this switch.


----------------------------------------------------


"portenable" on FID 20:

A port or ports is/are not part of this switch.
```

To display the firmware version for all logical switches:

```
switch:user> fosexec --fid all -cmd "firmwareshow -v"
LF permission does not exist for one or more \
   logical switches.
Would you like to continue [Y/N] : y

-------------------------------------------


"firmwareshow" on FID 10:
Appl    Primary/Secondary Versions

-------------------------------------------


FOS     v7.0.0
        v7.0.0

-------------------------------------------


"firmwareshow" on FID 20:
Appl    Primary/Secondary Versions

-------------------------------------------
```

```
FOS       v7.0.0
          v7.0.0
```

To display the switch name for all logical switches without confirmation:

```
switch:user> fosexec --fid all -force -cmd "switchname"


-----------------------------------


"switchname" on FID 10:

switch_10

----------------------------------

"switchname" on FID 20:

switch_20
```

To display the fabric information for all switch in the fabric:

```
switch:user> fosexec --domain all -cmd "fabricshow"
Domain 3
=========
Switch ID   Worldwide Name          Enet IP Addr    FC IP Addr      Name
---------------------------------------------------------------------
----
  3: fffc03 10:00:00:05:1e:61:28:0a 10.17.33.66    0.0.0.0        "TOM-
1"
  4: fffc04 10:00:00:05:1e:61:28:22 10.17.33.68    0.0.0.0
"TOM_4"

The Fabric has 2 switches
Fabric Name: POD_1


Domain 4
=========
Switch ID   Worldwide Name          Enet IP Addr    FC IP Addr      Name
---------------------------------------------------------------------
----
  3: fffc03 10:00:00:05:1e:61:28:0a 10.17.33.66    0.0.0.0        >"TOM-
1"
  4: fffc04 10:00:00:05:1e:61:28:22 10.17.33.68    0.0.0.0
"TOM_4"
The Fabric has 2 switches
Fabric Name: POD_1
```

To display the fabric information for domain 3 in the fabric:

```
switch:user> fosexec --domain 3 -cmd "fabricshow"
Domain 3
=========
Switch ID   Worldwide Name          Enet IP Addr    FC
IP Addr      Name
```

```
--------------------------------------------------------------------
----
  3: fffc03 10:00:00:05:1e:61:28:0a 10.17.33.66  0.0.0.0         "TOM-1"
  4: fffc04 10:00:00:05:1e:61:28:22 10.17.33.68  0.0.0.0         "TOM_4"

The Fabric has 2 switches
Fabric Name: POD_1
```

To display firmware version information in an AG switch:

```
switch:user> fosexec --ag C3_CORE_AG -cmd "version"
Access Gateway: 10:00:00:27:f8:fd:1f:80
=========
Kernel:    2.6.14.2
Fabric OS: v8.1.0
Made on:   Mon Aug 8 06:32:02 2016
Flash:     Tue Jul 21 19:32:17 2015
BootProm:  1.0.11
```

To display the firmware version information in all AG switches:

```
switch:user> fosexec --ag all -cmd "version"
Access Gateway: C4_CORE_AG(10:00:00:05:33:e6:ce:80)
=========
Kernel:    2.6.34.6
Fabric OS: v8.1.0
Made on:   Mon Aug 8 06:40:42 2016
Flash:     Wed Jul 22 12:18:02 2015
BootProm:  3.0.1

Access Gateway: C3_CORE_AG(10:00:00:27:f8:fd:1f:80)
=========
Kernel:    2.6.14.2
Fabric OS: v8.1.0
Made on:   Mon Aug 8 06:32:02 2016
Flash:     Tue Jul 21 19:32:17 2015
BootProm:  1.0.11

Access Gateway: sw0(10:00:c4:f5:7c:16:98:14)
=========
Remote fosexec feature is disabled.
Access Gateway: C4_EDGE_AG(10:00:c4:f5:7c:16:a4:60)
=========
Kernel:    2.6.34.6
Fabric OS: v8.1.0
Made on:   Mon Aug 8 06:40:42 2016
Flash:     Tue Jul 21 11:06:38 2015
BootProm:  3.0.1
```

See Also

setContext, userConfig

fpgaUpgrade

Upgrades and verifies the field-programmable gate array (FPGA) firmware image.

Synopsis

```
fpgaupgrade
fpgaupgrade --slot slot_num
fpgaupgrade --latest
fpgaupgrade --verbose
fpgaupgrade --help
```

Description

Use this command to update the flash reserved for FPGA with a new image and to verify the newly downloaded image. If the operation is successful, the switch must be power cycled for changes to take effect and therefore this operation is disruptive. If the operation fails, an error message is displayed.

When this command is executed on a system that is already running with the latest FPGA image, it displays the following warning message: "The switch is already running the latest FPGA version."

The behavior of this command is platform-specific; output varies depending on the platform.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following optional operands:

--slot *slot_num*

Specifies the slot number on bladed systems.

--latest

Displays the current and latest version.

--verbose

Displays the statistics in verbose mode.

--help

Displays the command usage.

Examples

To upgrade FPGA image:

```
switch:admin> fpgaupgrade
This is a disruptive operation and will require a power-cycle after the
completion of the operation.
Do you want to continue (y/n)? y
Programming new FPGA, this may take a few minutes ...
Device #1 IDCODE is 0310A0DD
full-chip erasing Max 10 FPGA device(s) ...
programming Max 10 FPGA CFM0 block at sector 5 ...
programming Max 10 FPGA CFM1 block at sector 3 ...
programming Max 10 FPGA CFM1 block at sector 4 ...
programming Max 10 FPGA UFM block at sector 2 ...
verifying Max 10 FPGA CFM0 block at sector 5 ...
verifying Max 10 FPGA CFM1 block at sector 3 ...
verifying Max 10 FPGA CFM1 block at sector 4 ...
verifying Max 10 FPGA UFM block at sector 2 ...
programming Max 10 FPGA DSM block ...
DONE
Test time elapsed = 162.764267 sec
Exit code = 0... Success
Programmed new FPGA successfully. Please power-cycle for it to take
effect.
```

To upgrade FPGA image (in this example, the command is executed on a system that is already running with the latest FPGA image):

```
switch:admin> fpgaupgrade
The switch is already running the latest FPGA version
```

To upgrade FPGA image (in this example, the command failed with an error message):

```
switch:admin> fpgaupgrade
This is a disruptive operation and will require a power-cycle after the
completion of the operation.
Do you want to continue (y/n)? y
Programming new FPGA, this may take a few minutes ...
The FPGA installer did not pass sanity check. Please firmwaredownload
to a target path firmware and retry.
Failed to program new FPGA (-1)
```

To display the current and latest version of FPGA image:

```
switch:admin> fpgaupgrade --l
Slot          Current          Latest
1             0x06.03          0x06.0a
5             0x06.00          0x06.00
6             0x06.00          0x06.00
8             0x06.02          0x06.02
```

See Also

None

frameLog

Displays information about discarded frames.

Synopsis

```
framelog --disable [-type timeout | du | unroute
      | type1miss | type2miss | type6miss | all]
framelog --enable [-type timeout | du | unroute
      | type1miss | type2miss | type6miss | all]
framelog --clear
framelog --status
framelog --show [-type timeout | du | unroute
      | type1miss | type2miss | type6miss | all]
      [-txport [slot/]port]
      [-rxport [slot/]port]
      [-sid source_PID][-did destination_PID]
      [-sfid fabric_ID] [-dfid fabric_ID>]
      [-mode summary | dump] [-n num_items]
```

Description

Use this command to disable or re-enable the frame log, and to display detailed information about the discarded frames logged by the frame log. The frame log stores information about frames discarded due to certain reasons. The frame log sees information about only 40 discarded frames per second per chip on the chassis.

When frame drops occur on a switch, the frame log can help you identify to which flows the dropped frames belong and zero in on the affected applications by finding out the end-points of the dropped frame.

Use the **--show** option to display detailed information about the discarded frames that match the filter criteria provided by this command. The **--show** option supports two viewing modes: summary and dump mode. In summary mode, the command aggregates similar frames (those that have the same log timestamp, TX port, RX port, SID, DID, SFID, DFID, Src Entity Id, and Dst Entity Id) without displaying the raw frame contents. In dump mode, the command displays the raw frame contents, but the frames are not aggregated in the manner of the summary mode. In either mode, you can specify additional filters to customize the number and properties of the frames for closer examination.

When viewed in summary mode, the frame log displays the following information:

Log timestamp

> The date and time when the frames described in this line of output were discarded. This value is accurate to within one second, that is, the displayed frames were not necessarily dropped at precisely the same time.

TX port

> Egress port where the frames were bound to exit the chassis. A port displayed as -1 (or -1/-1 on slot-based systems) indicates an internal port.

RX port

> Ingress port where the frames entered the chassis. A port displayed as -1 (or -1/-1 on slot-based systems indicates an internal port.

SID

> Source port ID in hexadecimal PID format.

DID

> Destination port ID in hexadecimal PID format.

SFID

> Source Fabric ID

DFID

> Destination Fabric ID

Src Entity Id

> Source ID

Dst Entity Id

> Destination ID

Type

> Reason for the frame discard. Frames can be discarded for a variety of reasons. The discard reasons currently handled by the frame log are timeout, unroute, du, type1miss, type2miss, and type6miss.

Count

> The number of discarded frames logged in the frame log that have the log timestamp, TX port, RX port, SID, DID, SFID and DFID values listed on this line of output. Note that this count may be less than the actual number of such frames discarded, because the frame log cannot log the details of all discarded frames.

When viewed in dump mode, the frame log displays the following information:

Log timestamp

> The date and time when the frames described in this line of output were discarded.

TX port

> Egress port where the frames were bound to exit the chassis. A port displayed as -1 (or -1/-1 on slot-based systems) indicates an internal port.

RX port

Ingress port where the frames were bound to enter the chassis. A port displayed as -1 (or -1/-1 on slot-based systems indicates an internal port.

Type

Reason for the frame discard. Frames can be discarded for a variety of reasons. The discard reasons currently handled by the frame log are timeout, unroute, du, type1miss, type2miss, and type6miss.

Frame contents

The first 64 bytes of the frame contents in hexadecimal format.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

The Frame Log operation is chassis-wide.

Operands

This command has the following operands:

-type

Specifies the discard frame types. Valid values for this operand include the following:

- **timeout**: Timeout discard frames

- **du**: Destination unreachable frames

- **unroute**: Unroutable frames

- **type1miss**: FTB type 1 miss discarded frames

- **type2miss**: FTB type 2 miss discarded frames

- **type6miss**: FTB type 6 miss discarded frames

- **all**: Specifies all discard frame types

--disable

Disables logging of discarded frames, which is enabled by default. This command clears the history of discarded frames and gathering of new information ceases. When frame logging is disabled, only the **--help** and **--enable** operations are permitted.

--enable

Enables logging of discarded frames after the feature was disabled.

--clear

> Clears the stored history of discarded frames. This operation is permitted only when the feature is enabled.

--status

> Displays the current status of the frame log service, and the type of discard frames that are being logged.

--show

> Prints a listing of details about stored frames that match the specified filter criteria. This operation is permitted only when the feature is enabled. You can specify one or more of the following options to filter the output. When used without operands, the **--show** command displays the unfiltered output. This option supports specifying that the TX port or RX port of displayed frames should be a backend port.

-type timeout | du | unroute | type1miss | type2miss | type6miss | all

> Specifies the discard frame types to display.

-txport [*slot/*]*port*

> Displays only the frames that were bound to exit by the specified egress port. The **-txport** option accepts argument "-1" (for fixed-port switches) or "-1/-1" (for modular switches). These stand for "any backend port". Using this notation, you can select specifically those discarded frames that have a backend port in the TX port field. Individual backend ports cannot be specified, only the quality of being a backend port can be specified.

-rxport [*slot/*]*port*

> Displays only the frames that entered the chassis on the specified port. The **-rxport** option accepts argument "-1" (for fixed-port switches) or "-1/-1" (for modular switches). These stand for "any backend port". Using this notation, you can select specifically those discarded frames that have a backend port in the RX port field. Individual backend ports cannot be specified, only the quality of being a backend port can be specified.

-sid *source_PID*

> Displays only the frames with the specified 24-bit source address in the FC header. The port ID (PID) must be written in hexadecimal and must be prefixed by 0x.

-did *destination_PID*

> Displays only the frames with the specified 24-bit destination address in the FC header. The port ID (PID) must be written in hexadecimal and must be prefixed by 0x.

-sfid *fabric_ID*

> Displays only the frames with the specified fabric ID as the source fabric ID.

-sdfid *fabric_ID*

> Displays only the frames with the specified fabric ID as the destination fabric ID.

-mode summary | dump

> Specifies the command output mode. In dump mode, the command prints the 64 bytes of frame contents. In summary mode, the frame contents are not displayed. Summary mode is the default.

-n *num_items*

> Displays the specified number of items. In summary mode, an item is a record of frames with the same values of log timestamp, TX port, RX port, SID, DID, SFID and DFID. Note that more frames may be represented in the lines of output than specified in the *num_items* value, because one line can aggregate multiple frames in summary mode. In dump mode, each item represents a single frame. The default value of *num_items* is 20. The maximum value in summary mode is 1200, and in dump mode it is 12,000.

Examples

> To display the status of the frame log service and the discard frame type:

```
switch:user> framelog --status
Service Status:                 Enabled
Enabled Disc Frame Types:       timeout unroute
```

> To display the framelog when unroute type is enabled:

```
switch:user> framelog --show
======================================================================
====================================
        Wed Aug 03 19:54:07 UTC 2016
======================================================================
====================================

Timestamp               |Tx Port|Rx Port|SID     |DID     |SFID|DFID|Src
Entity Id|Dst Entity Id|Type   |Count|
----------------------------------------------------------------------
---------------------------------------
Aug 03 2016 19:53:28|--   |8      |0x520800|0x101010|128 |128 |vm_2
|vm_2         |unrout|10    |
                    |       |       |       |        |    |    |
|             |e     |      |
Aug 03 2016 19:52:26|--   |8      |0x520800|0x101010|128 |128 |N/A
|N/A          |unrout|10    |
                    |       |       |       |        |    |    |
|             |e     |      |
```

> To display eight lines of an unfiltered frame log view in summary mode:

```
switch:user> framelog --show -mode summary -n 8
======================================================================
```

```
        Mon Jan 31 23:54:59 UTC 2011
======================================================================
=
Log               TX   RX
timestamp         port port SID        DID       SFID  DFID Type      Count
======================================================================
=
Jan 31 23:49:37 2    2     0xfffffd  0xfffffd  1     1     timeout   1
Jan 31 23:49:37 2    1     0x051500  0x060100  1     1     timeout   4
Jan 31 23:49:37 2    0     0x051700  0x060000  1     1     timeout   4
Jan 31 23:49:36 2    1     0x051500  0x060100  1     1     timeout   3
Jan 31 23:49:36 2    0     0x051700  0x060000  1     1     timeout   3
Jan 31 23:49:35 2    1     0x051500  0x060100  1     1     timeout   2
```

To display the frame contents in dump mode:

```
switch:user> framelog --show -mode dump -n 4


======================================================================
        Mon Jan 31 18:34:47 UTC 2011
======================================================================
Log               TX   RX
timestamp         port port Type    Frame contents (first 64 bytes)
======================================================================
Jan 31 18:34:46 7/32 7/33 timeout
                 00 03 a0 00 00 03 a1 00 00 28 00 00 00 00 00 00
                 80 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
                 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
                 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00

Jan 31 18:34:46 7/32 7/33 timeout
                 00 03 a0 00 00 03 a1 00 00 28 00 00 00 00 00 00
                 80 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
                 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
                 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00

Jan 31 18:34:46 7/32 7/33 timeout
                 00 03 a0 00 00 03 a1 00 00 28 00 00 00 00 00 00
                 80 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
                 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
                 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00

Jan 31 18:34:46 7/32 7/33 timeout
                 00 03 a0 00 00 03 a1 00 00 28 00 00 00 00 00 00
                 80 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
                 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
                 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
```

See Also

None

fruDump

Collects limited debug information related to field-replaceable units (FRUs) that can be displayed on screen or can be sent to a remote directory through FTP, SFTP, or SCP. This command is a minimal version of the **supportsave** command.

Synopsis

```
frudump [-u user_name -p password -h host_ip
    -c -d remote_dir -l protocol]
frudump [-a]
```

Description

Use this command to collect limited debug information related to FRUs that can be displayed on screen/console or can be sent to a remote directory through FTP, SCP, or SFTP. This command is a minimal version of the **supportsave** command.

The files generated by this command are compressed before being sent off the switch. The core files and panic dumps remain on the switch after the command is run. The FFDC data is removed after the command has finished.

This command accepts IPv4 and IPv6 addresses. If the configured IP address is in IPv6 format, the RAS auto-file transfer and event notification to syslog will not work when the Fabric OS version is downgraded. You must reconfigure auto-file transfer and syslog with IPv4 addresses.

In a Virtual Fabric environment, the command saves all chassis-based information and iterates through the defined switch-based information for all logical switches. Chassis permissions are required to execute this command.

Note that quotes should be used around path entries to ensure proper handling of special shell characters.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

-u *user_name*

Specifies the user name for the FTP, SCP, or SFTP server. This operand is optional; if omitted, anonymous FTP is used.

-p *password*

Specifies the password for the FTP, SCP, or SFTP server. If special characters are used in the password, the password must be enclosed in double quotes. This operand is optional with FTP; if omitted, anonymous FTP is used.

-h *host_ip*

> Specifies the IPv4 or IPv6 address for the remote server.

-c

> Uses the FTP, SCP, or SFTP parameters saved by the **supportFtp** command. This operand is optional; if omitted, specify the FTP, SCP, or SFTP parameters through command line options or interactively. This option is same as in the **supportsave** command.

-d *remote_dir*

> Specifies the remote directory to which the file is to be transferred.

-l *protocol*

> Specifies the transfer protocol. Valid values are File Transfer Protocol (FTP), Secure Copy (SCP), or Secure File Transfer Protocol (SFTP).
>
> If you plan to use SCP to transfer files, it is important to test the command prior to its use with various SCP-mode services. Because the **fruDump** command makes several access requests to copy files, it is important that the SCP-mode service be configured so that passwords are not required for each attempted transfer. Failure to configure the service correctly may result in significant delays in obtaining transferred output from the **fruDump** command.
>
> When using SCP, **fruDump** may create a directory if it does not already exist and the parent directory has the appropriate permissions. Use of FTP requires the directory to exist on the remote server.

-a

> Displays all FRU-related commands output to the screen.

Examples

> To collect FRU dump information in a remote directory through SCP:
>
> ```
> switch:admin> frudump  -u admin -h 10.70.4.104 -d /temp/support -l scp
> Password:
> Saving support information for switch:sw0, module:RAS...
> ..............................................................
>
> Saving support information for switch:sw0, module:FRUDUMP...
> Saving support information for switch:sw0, module:CORE_FFDC...
>
> SupportSave completed.
> ```

See Also

supportFtp, supportSave, supportShow

fspfShow

Displays Fabric Shortest Path First (FSPF) protocol information.

Synopsis

```
fspfshow
```

Description

Use this command to display FSPF protocol information and internal data structures of the FSPF module. The command displays the following fields:

version

Version of the FSPF protocol.

domainID

Domain number of the local switch.

switchOnline

State of the local switch.

switchGenNum

Switch generation number.

switchGenNum(mmap)

Switch's current generation number managed by the switch driver.

domainValid

TRUE if the domain of the local switch is currently confirmed.

isl_ports

Bit map of all ISL ports. Bit positions correspond to the default areas of the ports. Bit 0 refers to default area of the switch, bit 1 refers to default area 1, and so forth.

trunk_ports

Bit map of all trunk slave ports.

f_ports

Bit map of all FX_Ports.

seg_ports

Bit map of all segmented ports.

active_ports

Bit map of all online ports.

minLSArrival

FSPF constant.

minLSInterval

FSPF constant.

LSoriginCount

Internal variable.

startTime

Start time of the FSPF task from boot time, in milliseconds.

fspfQ

FSPF input message queue.

fabP

Pointer to fabric data structure.

agingTID

Aging timer ID.

agingTo

Aging time out value in milliseconds.

lsrDlyTID

Link State Record delay timer ID.

lsrDelayTo

Link State Record delay time out value in milliseconds.

lsrDelayCount

Counter of delayed Link State Records.

ddb_sem

>   FSPF semaphore ID.

event_sch

>   FSPF scheduled events bit map.

Notes

The output displays only the lines with a bit set. If a port bitmap does not have any bits set, the output displays as "None" for the first line of the bitmap.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To display FSPF protocol information:

```
switch:admin> fspfshow
version                = 2
domainID               = 1
switchOnline           = TRUE
switchGenNum           = 4
switchGenNum(mmap)     = 4
domainValid            = TRUE
isl_ports              = None
trunk_ports            = None
fports                 = None
seg_ports              = None
active_ports           = None
le_ports               = None
nbStFullPortsP         = None
ve_portsP              = None
minLSArrival           = 3000
minLSInterval          = 5000
LSoriginCount          = 0
startTime              = 0
fspfQ                  = 0x111ffba8
fabP                   = 0x11209bc8
agingTID               = 0x11329ae0
agingTo                = 10000
lsrDlyTID              = 0x1132ac90
lsrDelayTo             = 5000
lsrDelayCount          = 0
ddb_sem                = 0x11209bd8
```

```
fabP:
event_sch            = 0x0
max port             = 200
max phy port         = 40
```

See Also

```
fabP:
```

gePortErrShow

Displays error statistics of Gigabit Ethernet (GbE) port and XGE ports.

Synopsis

```
geporterrshow
geporterrshow --help
```

Description

Use this command to display error statistics of Gigabit Ethernet (GbE) ports on the Brocade FX8-24 extension blade. Values for the following parameters are displayed:

frames tx

Number of frames transmitted (Tx).

frames rx

Number of frames received (Rx).

crc err

Number of CRC errors.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operand:

--help

Displays command usage.

Examples

To display error statistics:

```
switch:admin> geporterrshow
              frames        crc
            tx      rx      err
         ===================
1/ge0  :     0       0       0
1/ge1  :     0       0       0
1/ge2  :     0       0       0
```

```
1/ge3  :      0          0          0
1/ge4  :      0          0          0
1/ge5  :      0          0          0
1/ge6  :      0          0          0
1/ge7  :      0          0          0
1/ge8  :      0          0          0
1/ge9  :      0          0          0
```

See Also

portCfgShow, portErrShow

gePortPerfShow

Displays throughput information for Gigabit Ethernet (GbE) ports and XGE ports.

Synopsis

```
geportperfshow
geportperfshow [-slot [slot] [-tx | -rx | -tx -rx]
     [-t time_interval]]
geportperfshow --help
```

Description

Use this command to display throughput information for all GbE ports on a switch or chassis or to display the information of GE ports in the specified slot of chassis. Output includes the number of bytes received and transmitted per interval. Throughput values are displayed as bytes per second. Values are rounded down.

The data is displayed one column per GbE port plus one column that displays the total for these GbE ports. Results display every second or over a specified interval. Press **Enter**, **Ctrl-c**, or **Ctrl-d** to terminate the command.

When executed with the command line arguments **-tx**, **-rx**, or **-tx -rx**, this command displays the transmitter throughput, the receiver throughput, or both. For ports with status of "No_Module," "No_Light," "No_SigDet," or "Loopback" throughput is displayed as 0.

An asterisk (*) in the output indicates a SIM port that is generating or receiving traffic.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

This command is supported on the Brocade 7810, Brocade 7840, Brocade SX6, and Brocade FX8-24 blade.

Operands

This command has the following operands:

-slot *slot*

   Displays throughput information for the GbE ports in the specified slot.

-t *time_interval*

   Specifies the interval, in seconds, between each sample. The default interval is one second. If no interval is specified, the default is used.

-tx

   Displays the transmitter throughput.

-rx

> Displays the receiver throughput.

-tx -rx

> Displays the transmitter and receiver throughput.

--help

> Displays the command usage.

Examples

To display performance information for all GbE ports at a one second (default) interval:

```
switch:user> geportperfshow
slot 1:
 ge0    ge1    ge2    ge3    ge4    ge5
================================================
  0      0      0     71.8m   0      0

 ge6    ge7    ge8    ge9    xge0   xge1   Total
================================================
  0      0      0      0      0      0     71.8m

slot 2:
 ge0    ge1    ge2    ge3    ge4    ge5
================================================
  0      0      0      0      0      0

 ge6    ge7    ge8    ge9    xge0   xge1   Total
================================================
  0      0      0     32.9m   0      0     32.9m
```

To display transmitter throughput for a single slot:

```
switch:user> portperfshow 1 -tx
slot 1:
 ge0    ge1    ge2    ge3    ge4    ge5
================================================
  0      0      0     55.7m   0      0

 ge6    ge7    ge8    ge9    xge0   xge1
================================================
  0      0      0      0      0      0
```

To display receiver throughput for a single slot:

```
switch:user> portperfshow 1 -rx
slot 1:
 ge0    ge1    ge2    ge3    ge4    ge5
================================================
  0      0      0     1.4m    0      0
```

```
   ge6    ge7    ge8    ge9    xge0    xge1
===============================================
    0      0      0      0       0       0
```

To display transmitter and receiver throughput for all GbE ports:

```
switch:user> portperfshow -tx -rx
slot 1:
  ge0            ge1            ge2            ge3            ge4            ge5
==TX=====RX=====TX=====RX=====TX=====RX=====TX=====RX=====TX=====RX=====TX==
===TX=====RX===
    0      0      0      0      0      0    40.2m 964.3k   0      0      0      0

  ge6            ge7            ge8            ge9            xge0            xge1
==TX=====RX=====TX=====RX=====TX=====RX=====TX=====RX=====TX=====RX=====TX==
===TX=====RX===
    0      0      0      0      0      0      0      0      0      0      0      0

slot 2:
  ge0            ge1            ge2            ge3            ge4            ge5
==TX=====RX=====TX=====RX=====TX=====RX=====TX=====RX=====TX=====RX=====TX==
===TX=====RX===
    0      0      0      0      0      0      0      0      0      0      0      0

  ge6            ge7            ge8            ge9            xge0            xge1
==TX=====RX=====TX=====RX=====TX=====RX=====TX=====RX=====TX=====RX=====TX==
===TX=====RX===
    0      0      0      0      0      0    16.1m 347.2k   0      0      0      0
```

See Also

portStatsShow

h

Displays shell history.

Synopsis

```
h
history
```

Description

Use this command to view the shell history. The shell history mechanism is similar to the UNIX shell history facility. The **h** command displays the 20 most recent commands typed into the shell; the oldest commands are replaced as new ones are entered.

Operands

None

Examples

To display previous shell commands:

```
switch:admin> h
1 version
2 switchshow
3 portdisable 2
4 portenable 2
5 switchshow
```

See Also

None

haDisable

Disables the High Availability feature.

Synopsis

```
hadisable
```

Description

Use this command to disable the High Availability (HA) feature on a switch. If the HA feature is already disabled, this command does nothing.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To disable the High Availability feature:

```
switch:admin> hadisable
HA is disabled
```

See Also

haEnable, haShow

haDump

Displays High Availability status information.

Synopsis

hadump

Description

Use this command to display information about the status of the High Availability (HA) feature on a switch or a chassis. This command displays the following information:

- Time Stamp

- Local CP state (slot number and CP ID)

- Remote CP state (slot number and CP ID)

- Type of recovery (warm or cold)

- High Availability (enabled or disabled)

- Heartbeat (up or down)

- Health of standby CP

- HA synchronization status

- IP and Fibre Channel addresses configured for the switch or chassis.

- Additional internal HA state information, subject to change.

The health of the standby CP is defined as follows:

Healthy

The standby CP is running and the background health diagnostic has not detected any errors.

Failed

The standby CP is running, but the background health diagnostic has discovered a problem with the blade. Check the logs to determine an appropriate course of action. Failover is disabled until the standby CP is repaired. Information about the failing device in the standby CP is displayed.

Unknown

The standby CP health state is unknown because the standby CP does not exist, heartbeat is down, or Health Monitor detects a configuration file error.

The High Availability synchronization status is defined as follows:

HA State synchronized

The system is currently fully synchronized. If a failover becomes necessary, it is nondisruptive.

HA State not in sync

The system is unable to synchronize the two control processors (CPs) because the standby CP is faulty, an **haSyncStop** command was issued, or a system error occurred. If a failover becomes necessary at this time, active CP reboots and the failover is disruptive.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To view information about the High Availability feature status on a Brocade DCX 8510-8:

```
switch:admin> hadump
----------------------------------------
TIME_STAMP: Mar 30 12:57:35.109173
----------------------------------------
Local CP (Slot 7, CP1): Active, Warm Recovered
Remote CP (Slot 6, CP0): Standby, Healthy
HA enabled, Heartbeat Up, HA State synchronized

CHASSIS
Ethernet IP Address: 10.20.114.57
Ethernet Subnetmask: 255.255.240.0

CP0
Ethernet IP Address: 10.20.114.58
Ethernet Subnetmask: 255.255.240.0
Host Name: cp0
Gateway IP Address: 10.20.112.1

CP1
Ethernet IP Address: 10.20.114.59
Ethernet Subnetmask: 255.255.240.0
Host Name: cp1
Gateway IP Address: 10.20.112.1

Backplane IP address of CP0 : 10.0.0.5
Backplane IP address of CP1 : 10.0.0.6
IPv6 Autoconfiguration Enabled: Yes
```

```
Local IPv6 Addresses:
IPv6 Gateways:
----------------------------------------
TIME_STAMP: Mar 30 12:57:37.31282
----------------------------------------
== Service ==
chassis0:0(8.0)
major:          8     part:           0
lo:             0     role:           2
id:             0     dump:           3
epoch:          3     log:            0
block:          0     bits:         321
recov:          0     index:         14
upper:         14     coldnum:        3
warmnum:       14     stbynum:        4
stat:           4     prevstat:       4
sv_winsz:      64     nscm:          10
== Config ==
(Output truncated)
```

See Also

haShow

haEnable

Enables the High Availability feature.

Synopsis

```
haenable
```

Description

Use this command to enable the High Availability (HA) feature on a switch. If the HA feature is already enabled, this command has no effect.

If the HA feature is disabled, this command enables it. The standby CP reboots as part of the process. The command displays a warning message and prompts for confirmation before rebooting the CP.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To enable the High Availability feature on a Brocade DCX 8510-8:

```
switch:admin> haenable
Warning: This command will enable the HA. It will reboot the standby
CP and require all telnet, secure telnet, and SSH sessions to the
standby CP to be restarted

Are you sure you want to go ahead  [y/n]?y
y
```

To verify that High Availability is enabled:

```
switch:admin> hashow
Local CP (Slot 7, CP1): Active, Warm Recovered
Remote CP (Slot 6, CP0): Standby, Healthy
HA enabled, Heartbeat Up, HA State synchronized
```

See Also

haDisable, reboot

haFailover

Forces the failover mechanism so that the standby control processor (CP) becomes the active CP.

Synopsis

hafailover

Description

Use this command to force the failover mechanism to occur so that the standby CP becomes the active CP. In case the active and standby CPs are not synchronized or the system is not in redundant mode, the command aborts.

Notes

When High Availability (HA) synchronization is enabled and the CPs are in sync, the port traffic light does not flash during the failover, even while traffic is continuing to flow.

This command is supported only on dual-CP systems.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To force the failover of the active CP to the standby CP in the switch:

```
switch:admin> hafailover
Local CP (Slot 7, CP1): Active, Warm Recovered
Remote CP (Slot 6, CP0): Standby, Healthy
HA enabled, Heartbeat Up, HA State synchronized
Warning: This command is being run on a redundant control processor(CP)
system, and this operation will cause the active CP to reset.
Therefore all existing telnet sessions are required to be restarted.

Are you sure you want to fail over to the standby CP [y/n]?
```

See Also

haDisable, haEnable, haShow

haReboot

Performs high availability (HA) reboot.

Synopsis

hareboot

Description

Use this command to perform warm reboot in the switch-based systems. On chassis-based systems, this command behaves similar to the **haFailover** command so that the standby CP becomes the active CP.

In chassis-based systems, if the active and standby CPs are not synchronized or the system is not in the redundant mode, the command aborts.

When the switch-based system is not fully up or stable, the **haReboot** command cannot be completed.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To perform Ha reboot in the switch-based systems:

```
switch:admin> hareboot
HA Rebooting ...
```

To perform Ha reboot in the chassis-based systems:

```
switch:admin> hareboot
Restarting system with command 'Machine Rebooting
```

See Also

haDisable, haEnable, haFailover, haShow

haRedundancy

Displays switch uptime.

Synopsis

```
haredundancy --show
haredundancy --help
```

Description

Use this command to display the switch uptime and the chassis control processor redundancy statistics. For chassis, the command displays the control processor redundancy settings and switch uptime. For switches, the command displays the switch uptime only.

The display includes the following information:

- Current active session: Displays the settings for the current session.
    - HA synchronization status.
    - Active slot state: Displays CP ID, whether CP is local or remote, and recovery type information.
    - Standby slot state: Displays CP ID, and whether CP is local or remote.
    - Start time: Displays the start time of the services in sync state.
- Previous active session: Displays the settings for the previous active session.
    - Active slot state: Displays CP ID, and recovery type information.
    - Standby slot state: Displays CP ID information.
    - Start time: Displays the start time of the services in sync state for the session.
    - End time: Displays end time of the session caused by expected or unexpected recovery.
- System uptime: Displays the start time of the system services. This changes when there is a power cycle or both CPs are reset together.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--show

Displays the switch uptime and other information.

--help

      Displays the command usage.

Examples

      To display switch uptime with a health standby CP:

```
switch:admin> haredundancy --show
=== HA Redundancy Statistics ===
        HA State synchronized
        Current Active Session:
        Active Slot = CP0 (Local), Expected Recovered
        Standby Slot = CP1 (Remote)
        Start Time: 17:55:33 UTC Fri Jan 03 2014

        Previous Active Session:
        Active Slot = CP1, Expected Recovered
        Standby Slot = CP0
        Start Time: 17:49:46 UTC Fri Jan 03 2014
        End Time: 17:54:10 UTC Fri Jan 03 2014

        System Uptime: 17:42:11 UTC Fri Jan 03 2014
```

To display switch uptime without a standby CP:

```
switch:admin> haredundancy --show
=== HA Redundancy Statistics ===
        Non-redundant

        System Uptime: 17:42:11 UTC Fri Jan 03 2014
```

To display switch uptime:

```
switch:admin> haredundancy  --show
        === HA Redundancy Statistics ===

        Not supported on this platform

        System Uptime: 09:42:12 UTC Wed Nov 22 2013
```

See Also

      haShow

haShow

Displays control processor (CP) status.

Synopsis

```
hashow
```

Description

Use this command to display the control processor status. The display includes the following information:

- Local CP state (slot number and CP ID), warm or cold, recovering or recovered.

- Remote CP state (slot number and CP ID).

- High Availability (enabled or disabled).

- Heartbeat (up or down).

- Health of standby CP

- HA synchronization status

The health of the standby CP is defined as follows:

Healthy

The standby CP is running and the background health diagnostic has not detected any errors.

Failed

The standby CP is running, but the background health diagnostic has discovered a problem with the blade. Check the logs to determine the appropriate action. Failover is disabled until the standby CP is repaired. Information about the failing device in the standby CP is displayed.

Unknown

The standby CP health state is unknown because of one of the following reasons: the standby CP does not exist, Heartbeat is down, or the Health Monitor has detected a configuration file error.

The High Availability synchronization status is defined as follows:

HA State synchronized

The system is currently fully synchronized. If a failover becomes necessary, it is nondisruptive.

HA State not in sync

The system is unable to synchronize the two CPs. This may be caused by one or more of the following conditions:

- The **haFailover** command was issued. In this case the "HA State not in sync" state is transitory.

- The standby CP is faulty.

- The **haSyncStop** command was issued.

- A system error occurred.

If a failover becomes necessary while the CPs are not in sync, the standby CP reboots, and the failover is disruptive.

Notes

This command may not be supported on nonbladed systems.

Slot numbers for CP1 and CP0 vary depending on the hardware platform. On the Brocade DCX 8510-8, CP0 is in slot 6 and CP1 is in slot 7. On the Brocade DCX 8510-4, CP0 is in slot 4 and CP1 is in slot 5. On the Brocade X6 Director, CP0 is in slot 1 and CP1 is in slot 2.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To display CP status on a Brocade DCX 8510-8 with a healthy standby CP:

```
switch:admin> hashow
Local CP (Slot 7, CP1) : Active, Warm Recovered
Remote CP (Slot 6, CP0) : Standby, Healthy
HA Enabled, Heartbeat Up, HA State Synchronized
```

To display CP status on a Brocade X6 Director with a healthy standby CP:

```
switch:admin> hashow
Local CP (Slot 1, CP0): Active, Cold Recovered
Remote CP (Slot 2, CP1): Standby, Healthy
HA enabled, Heartbeat Up, HA State synchronized
```

See Also

None

haShutdown

Shuts down high availability (HA) reboot.

Synopsis

hashutdown

Description

Use this command to shut down the High Availability (HA) feature on a switch. If the HA feature is already shut down, this command has no effect.

After **haShutdown**, switch reboot is required to enable the HA feature.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To shut down the High Availability feature:

switch:admin> **hashutdown**

See Also

haDisable, haEnable, haFailover, haReboot, haShow

haSyncStart

Enables High Availability state synchronization.

Synopsis

```
hasyncstart
```

Description

Use this command to enable the High Availability (HA) state synchronization.

After issuing **haSyncStop**, the switch does not go back to sync start unless you perform one of the following actions: reboot the active CP, reboot the standby CP, insert a new standby CP (blade), or issue the **haSyncStart** command The time it takes for the HA sync to complete depends on the system configuration. The HA sync timeout is set to 10 minutes.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Examples

To enable the HA state synchronization:

switch:admin> **hasyncstart**

See Also

haShow

haSyncStop

Disables High Availability state synchronization.

Synopsis

hasyncstop

Description

Use this command to temporarily disable High Availability (HA) synchronization.

After issuing **haSyncStop**, the switch does not go back to sync start unless you perform one of the following actions: reboot the active CP, reboot the standby CP, insert a new standby CP (blade), or issue the **haSyncStart** command The time it takes for the HA sync to complete depends on the system configuration. The HA sync timeout is set to 10 minutes.

Notes

Disabling HA synchronization may cause failover to be disruptive.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To disable the HA state synchronizing process:

switch:admin> **hasyncstop**

See Also

haShow

help

Displays command help information.

Synopsis

```
help [command]
help [-p | -page]
help --help
```

Description

Use this command without operands to display an alphabetical listing of commands for which help is available. When used without an operand, the command listing displays without page break.

Pipe the output through the Unix **grep** command to filter the output.

Use the **-page** operand to display the commands for which help is available one page at a time. Press **Enter** to go to the next page. When using help with the **-page** option, you can search for specific strings by entering a forward slash, followed by a text string, for example **/zone**.

The help listing includes only commands that are available to the current user; command availability may vary depending on the following conditions:

- Login user role

- License key

- Hardware platform

To access help information for a specific command, enter the command name as an operand.

Commands ending in "Help" display grouped commands for a particular subsystem; for example, the **diagHelp** command displays a list of diagnostic commands.

Operands

This command has the following operands:

command

Specifies the name of the command for which to display help information. This operand is optional.

p | -page

Displays help output with page breaks.

--help

Displays the command usage.

Examples

To display a listing of commands for which help is available (with page breaks):

```
switch:admin> help -p
aaaconfig           Configure RADIUS for AAA services
ag                  Configure the Access Gateway feature
agshow              Displays the Access Gateway information
                    registered with the fabric
aliadd              Add a member to a zone alias
alicreate           Create a zone alias
alidelete           Delete a zone alias
aliremove           Remove a member from a zone alias
alishow             Print zone alias information
aptpolicy           Get and set Advanced Performance
                    Tuning policy
auditcfg            Modifies and displays audit log filter
                    configuration.
auditdump           Display audit log
(output truncated)
```

To search for the string "zone" while paging is enabled (enter /zone after issuing the command):

```
switch:admin> help -p
aaaconfig           Configure RADIUS for AAA services
ag                  Configure the Access Gateway feature
agshow              Displays the Access Gateway information
                    registered with the fabric
aliadd              Add a member to a zone alias
alicreate           Create a zone alias
alidelete           Delete a zone alias
aliremove           Remove a member from a zone alias
alishow             Print zone alias information
aptpolicy           Get and set Advanced Performance Tuning
                    policy
auditcfg            Modifies and displays audit log filter
                    configuration.
auditdump           Display audit log
authutil            Get and set  configuration
backplanetest       Backplane connection test for multi-blade
                    systems.
backport            Test for back-end ASIC pair to ASIC pair links.
bannerset           Set security banner
bannershow          Display security banner
bcastshow           Display broadcast routing information
Type <CR> or <SPACE BAR> to continue, <q> to stop
/zone
aliadd              Add a member to a zone alias
alicreate           Create a zone alias
alidelete           Delete a zone alias
aliremove           Remove a member from a zone alias
alishow             Print zone alias information
aptpolicy           Get and set Advanced Performance Tuning policy
auditcfg            Modifies and displays audit log filter
                    configuration.
```

```
(output truncated)
```

To filter the output with the **grep** command:

```
switch:admin> help | grep errshow
errshow             Print error log
porterrshow         Print port  summary
switch:admin>
```

See Also

diagHelp, routeHelp, zoneHelp

historyLastShow

Displays the latest entry in the field replaceable unit (FRU) history log.

Synopsis

```
historylastshow
```

Description

Use this command to display the latest entry of the history log, which records insertion and removal events for field-replaceable units (FRUs), such as blades, power supplies, fans, and world wide name (WWN) cards. The type of FRU supported depends on the hardware platform.

Each history record contains three lines of information. The first line of each record contains the following fields:

Object type

On standalone platforms: FAN, POWER SUPPLY, WWN (WWN card), or UNKNOWN. On enterprise-class platforms: FAN, POWER SUPPLY, CORE BLADE (core switch blade), AP BLADE (application processor), SW BLADE (port blade), CP BLADE (control processor), WWN (WWN card), or UNKNOWN.

Object number

Slot number for blades. Unit number for all other object types.

Event type

Inserted, Removed, or Invalid.

Time of the event

Format: *Day Month dd hh:mm:ss yyyy,*

The second and third lines of a record contain the factory part number and factory serial number, if applicable.

Factory Part Number

xx-yyyyyyy-zz or Not available.

Factory Serial Number

xxxxxxxxxxxx or Not available.

The size of the history log depends on the hardware platform. The Brocade DCX supports a maximum log size of 50 entries. Because the WWNs are completely separate FRUs in the DCX, they have redundant data in these units. All other platforms that contain FRUs support 28 history log entries.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To display the late FRU insertion or removal event:

```
switch:admin> historylastshow

POWER SUPPLY  Unit 2    Inserted at Tue Aug 14 15:52:10 2001
Factory Part Number:    60-0001536-02
Factory Serial Number:  1013456800

Records:  11
```

See Also

historyShow

historyMode

Displays the mode of the field replaceable unit (FRU) history log.

Synopsis

historymode

Description

Use this command to display the mode of the history buffer, which records the insertion and removal of FRUs on a switch or chassis.

This command supports two modes of handling new log entries once the history buffer has reached its maximum size:

Rotating mode

Any new entry exceeding the maximum buffer size overwrites the oldest entry in the log. This is the default mode.

First-in mode

Any new entry exceeding the maximum buffer size is discarded. The original entries in the buffer is preserved.

The history mode is a factory setting that cannot be modified. The size of the history buffer depends on the hardware platform. The Brocade DCX backbone supports a maximum log size of 50 entries. Because the WWNs are completely separate FRUs in the DCX, they have redundant data in these units. All other platforms containing FRUs support 28 history log entries.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To display the mode of the history log:

switch:admin> **historymode**

History Mode is: Rotating.

See Also

   historyLastShow, historyShow

historyShow

Displays the entire field replaceable unit (FRU) history log.

Synopsis

```
historyshow
```

Description

Use this command to display the entire history log, which records insertion and removal events for field-replaceable units (FRUs), such as blades, power supplies, fans, and world wide name (WWN) cards. The type of FRU supported depends on the hardware platform.

Each history record contains three lines of information. The first line of each record contains the following:

Object type

On standalone platforms: FAN, POWER SUPPLY, WWN (WWN card), or UNKNOWN.

On enterprise-class platforms: FAN, POWER SUPPLY, CORE BLADE (core switch blade), SW BLADE (port blade), AP BLADE (application processor), CP BLADE (control processor), WWN (WWN card), or UNKNOWN.

Object number

Slot number for blades. Unit number for all other object types.

Event type

Inserted, Removed, or Invalid

Time of the event

Format: *Day Month dd hh:mm:ss yyyy*

The second and third lines of a record contain the factory part number and factory serial number, if applicable:

Factory Part Number

xx-yyyyyyy-zz or Not available

Factory Serial Number

xxxxxxxxxxxx or Not available

The size of the history buffer depends on the HW platform. The Brocade DCX supports a maximum log size of 50 entries. Because the WWNs are completely separate FRUs in the DCX, they have redundant data in these units. All other platforms that contain FRUs support 28 history log entries.

Notes

> The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

> None

Examples

> To display the history log of FRUs and removal events on a standalone switch:

```
switch:admin> historyshow

FAN   Unit 3            Removed at Tue Aug 14 10:05:37 1970
Factory Part Number:    20-123456-12
Factory Serial Number:  1013456800

POWER SUPPLY  Unit 1    Inserted at Tue Aug 14 10:52:10 1970
Factory Part Number:    60-0001536-02
Factory Serial Number:  Not Available

FAN   Unit 3            Inserted at Tue Aug 14 10:23:45 2001
Factory Part Number:    20-123456-12
Factory Serial Number:  1013456800

WWN   Unit 1            Inserted at Tue Aug 14 11:03:45 2001
Factory Part Number:    40-0000031-03
Factory Serial Number:  1013456800

SW BLADE   Slot 3       Removed at Tue Aug 14 12:10:09 2001
Factory Part Number:    60-0001532-03
Factory Serial Number:  1013456800

CP BLADE   Slot 6       Removed at Tue Aug 14 13:45:07 2001
Factory Part Number:    60-0001604-02
Factory Serial Number:  FP00X600128

SW BLADE   Slot 3       Inserted at Tue Aug 14 13:53:40 2001
Factory Part Number:    60-0001532-03
Factory Serial Number:  1013456800

CP BLADE   Slot 6       Inserted at Tue Aug 14 13:59:50 2001
Factory Part Number:    60-0001604-02
Factory Serial Number:  FP00X600128

POWER SUPPLY  Unit 2    Inserted at Tue Aug 14 15:52:10 2001
Factory Part Number:    60-0001536-02
Factory Serial Number:  1013456800

Records:  11
```

See Also

historyLastShow

i

Displays a process summary.

Synopsis

i [*processID*]

Description

Use this command to display information about a specified process or about all processes running on the local switch. One line is displayed per process. Fields displayed with this command include the

F

Process flags:

ALIGNWARN

001 print alignment warning messages

STARTING

002 being created

EXITING

004 getting shut down

PTRACED

010 set if ptrace (0) has been called

TRACESYS

020 tracing system calls

FORKNOEXEC

040 forked but did not exec

SUPERPRIV

100 used super-user privileges

DUMPCORE

200 dumped core

SIGNALED

> 400 killed by a signal

S

> Process state codes:

D

> Uninterruptable sleep (usually IO)

R

> Runable (on run queue)

S

> Sleeping

T

> Traced or stopped

Z

> A defunct ("zombie") process

UID

> The effective user ID number of the process

PID

> The process ID of the process

PPID

> The process ID of the parent process

C

> Processor utilization for scheduling

PRI

> Priority number of the process; higher numbers mean lower priority

NI

> Nice value used in priority computation

ADDR

Memory address of the process

SZ

The total size of the process in virtual memory, in pages

WCHAN

The address of an event for which a process is sleeping (if blank, process is running)

TTY

The controlling terminal of the process (? displayed for no controlling terminal)

TIME

The cumulative execution time for the process

CMD

The command name of the process.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operand:

processID

Specifies the process name or process ID for the process to display.

Examples

To display information about process ID 433:

```
switch:admin> i 433
F   S UID PID PPID C PRI NI ADDR   SZ  WCHAN TTY   TIME    CMD
000 S  0  433    1 0  69  0   -   1283  5c64 ?  00:00:02 fabricd
```

See Also

diagHelp, routeHelp

iflShow

Displays the interfabric link (IFL) information.

Synopsis

```
iflshow
iflshow --help
```

Description

Use this command to display the current connection and information of the interfabric links (IFL) on an edge switch. The command output includes the following information:

E-Port

Port number of the local switch to which FC Router switch is connected

Ex-Port

Port Number of FC Router switch

FCR WWN

WWN of the FC Router switch

FCR FID

Fabric ID of FC Router switch

FCR Name

Switch name of FC Router

Speed

IFL connection speed, if applicable. Connection speed not applicable to VE_Ports. For these port types, speed displays as '-'.

BW

Bandwidth of the link.

- TRUNK - Trunking enabled, if applicable

- QOS - QoS enabled, if applicable

- ENCRYPT - Encryption enabled, if applicable

- COMPRESS - Compression enabled, if applicable

- CR_RECOV - Credit recovery enabled, if applicable

- FEC - Forward Error Correction enabled, if applicable

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operand:

--help

Displays the command usage.

Examples

To display the interfabric links:

```
switch:admin> iflshow
    E-   EX-        FCR WWN          FCR  FCR  Speed  BW
#  Port Port                        FID  Name
------------------------------------------------------------
1: 7->  8   10:00:00:05:1e:8b:68:10  8   fcr1  4G     4G TRUNK
2: 12-> 13  10:00:00:05:1e:a1:e3:3a  15  fcr2  4G     4G TRUNK
3: 15-> 15  10:00:00:05:1e:a1:e1:f9  12  sw87  4G     4G TRUNK QOS
4: 16-> 16  10:00:50:eb:1a:00:00:02  4   fcr3  -      4G
```

See Also

fcrEdgeShow, fcrFabricShow

interfaceShow

Displays FSPF interface information.

Synopsis

interfaceshow [*slot/*][*port*]

Description

Use this command to display the two data structures associated with FSPF interfaces (E_Ports) on the switch:

• The permanently allocated interface descriptor block (IDB).

• The neighbor data structure. This data structure is allocated when a switch port becomes an E_Port. The neighbor data structure contains all the information relating to the switch that is connected to an adjacent switch.

This command displays the content of both data structures, if they have been allocated.

The following fields are displayed:

idbP

Pointer to IDB.

nghbP

Pointer to neighbor data structure.

ifNo

Interface number.

masterPort

Port number of the trunk master port, if present, of the trunk group of which this port is a part.

prgm_if_id

Internal variable

curr_if_id

Internal variable

prgmCnt

Number of remote domains the link has been programmed to reach for routing traffic.

defaultCost

Default cost of sending a frame over the interswitch link (ISL) connection to this interface.

cost

Cost of sending a frame over the ISL connected to this interface. A value of 1000 indicates a 1Gb/s link. A value of 500 indicates a 2Gb/s link. For links with a bandwidth greater than 2Gb/s, the cost is 500. For links with less than 1Gb/s, the cost is 2000. Refer to **linkCost** for more information.

ifBw

The rounded bandwidth of the interface, in Gb/s.

totalBw

The summed total bandwidth for the entire trunk and ISL, in Gb/s.

delay

Conventional delay incurred by a frame transmitted on this ISL. A fixed value required by the FSPF protocol.

lastScn

Type of the last State Change Notification received on this interface.

lastScnTime

Time the last State Change Notification was received on this interface.

upCount

Number of times this interface came up, with respect to FSPF.

lastUpTime

Last time this interface came up.

downCount

Number of times this interface went down.

lastDownTime

Last time this interface went down.

downReason

Type of last State Change Notification that caused this interface to go down.

iState

Current state of this interface. The state can be UP or DOWN. An interface in DOWN state does not have an allocated neighbor data structure and cannot be used to route traffic to other switches.

state

Current state of this interface. This E_Port is used to route traffic to other switches only if the state is NB_ST_FULL.

lastTransition

Time the last state changed on this interface.

nghbCap

Neighbor capabilities. Should be 0.

nghbId

Domain ID of the neighbor (adjacent) switch.

idbNo

IDB number. Should be equal to *port*.

remPort

Port number on the remote switch connected to this port.

nflags

Internal FSPF flags.

initCount

Number of times this neighbor was initialized without the interface going down.

lastInit

Time of the last initializing state, NB_ST_INIT, on this interface.

firstHlo

Time of the first hello sent on this interface.

nbstFull

Time of the last finishing state, NB_ST_FULL, on this interface.

&dbRetransList

Pointer to the database retransmission list.

&lsrRetransList

Pointer to the link state records (LSR) retransmission list.

&lsrAckList

Pointer to the link state acknowledgements (LSA) retransmission list.

inactTID

Inactivity timer ID.

helloTID

Hello timer ID.

dbRtxTID

Database retransmission timer ID.

lsrRtxTID

LSR retransmission timer ID.

inactTo

Inactivity timeout value, in milliseconds. When this timeout expires, the adjacency with the neighbor switch is broken and new paths are computed to all possible destination switches in the fabric.

helloTo

Hello timeout value, in milliseconds. When this timeout expires, a Hello frame is sent to the neighbor switch through this port.

rXmitTo

Retransmission timeout value, in milliseconds. It is used to transmit topology information to the neighbor switch. If no acknowledgement is received within this value, the frame is retransmitted.

nCmdAcc

Total number of commands accepted from the neighbor switch. Number includes Hellos, Link State Updates (LSUs), and LSAs.

nInvCmd

Number of invalid commands received from the neighbor switch. Usually commands with an FSPF version number higher than the one running on the local switch.

nHloIn

Number of Hello frames received from the neighbor switch.

nInvHlo

Number of invalid Hello frames (Hello frames with invalid parameters) received from the neighbor switch.

nLsuIn

Number of LSUs received from the neighbor switch.

nLsaIn

Number of LSAs received from the neighbor switch.

attHloOut

Number of attempted transmissions of Hello frames to the neighbor switch.

nHloOut

Number of Hello frames transmitted to the neighbor switch.

attLsuOut

Number of attempted transmissions of LSUs to the neighbor switch.

nLsuOut

Number of LSUs transmitted to the neighbor switch.

attLsaOut

Number of attempted transmissions of LSAs to the neighbor switch.

nLsaOut

Number of LSAs transmitted to the neighbor switch.

StuckCnt

Number of HLO timeouts that occurred before the port changed to the NB_ST_FULL state.

state

Substate of the port. The port can be in one of the following 12 substates:

INIT (0)

The port is initializing.

ROUTABLE (1)

The port is ready to receive frames.

ROUTABLE_WAIT (2)

The port is waiting for notification from the neighbor.

ROUTABLE_SEND (3)

The port is preparing for local route update; negotiates for the necessary locks before updating the routes.

ROUTABLE_TIMER (4)

The request for one or more locks failed; delay for a short interval before retrying.

DONE (5)

The port is online and in use.

DECOM_START (6)

The decommissioning request is sent to the neighbor and waiting for a response.

DECOM_WAIT (7)

Waiting for neighbor to remove routes using the interswitch link (ISL).

DECOM_SEND (8)

Preparing to update routes of the local port; negotiates for the necessary before updating the routes.

DECOM_TIMER (9)

The request for one or more locks failed; delay for a short interval before retrying.

DECOM_DONE (10)

The local routes are updated; waiting for acknowledgement from the neighbor.

DECOM_BLOCK (11)

The local routes are updated; the neighbor sent acknowledgement.

chassis_lock

> Internal variable

lock_request

> Internal variable

nbr_lock_lock

> Internal variable

r_rdy_rcvd

> Indicates if the neighbor has reported as ready to receive frames.

nbr r_rdy flags

> Internal flags reported by the neighbor.

lock_busy_cnt

> Number of times a lock has reported as busy.

decom_active

> Indicates if a decommissioning request is active on the port.

decom_initiator

> Indicates if the local port is the decommissioning request initiator.

decom_active_port

> Indicates the port for which the decommissioning request is active.

decom_trunk_member

> Indicates if decommissioning request is for a multi-link trunk.

Notes

> The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

> This command has the following operands:

slot

> For bladed systems only, specify the slot number of the port to be displayed, followed by a slash (/).

port

> Specify the number of the port to be displayed, relative to its slot for bladed systems. Use **switchShow** for a list of valid ports. This operand is optional; if omitted, the interface information for all ports is displayed.

When invoked without operands, this command displays the interface information for all ports on the switch (including non-E_Ports).

Examples

To display FSPF interface information:

```
switch:user> interfaceshow 1/19
idbP            = 0x102651a0

Interface 131 data structure:

nghbP           = 0x10b968f0
ifNo            = 131
masterPort      = 131
prgm_if_id      = 0x43120021
curr_if_id      = 0x43120021
prgmCnt         = 1
defaultCost     = 500
cost            = 500
ifBw            = 8G
totalBw         = 24G
delay           = 1
lastScn         = 0
lastScnTime     = Jan 01 00:00:00.000
upCount         = 0
lastUpTime      = Jan 01 00:00:00.000
downCount       = 0
lastDownTime    = Jan 01 00:00:00.000
downReason      = 0
iState          = UP

Neighbor 131 data structure:

state           = NB_ST_FULL
lastTransition  = Jun 04 05:05:02.592
nghbCap         = 0x0
nghbId          = 188
idbNo           = 131
remPort         = 243
nflags          = 0xf
initCount       = 0
```

```
lastInit        = Jun 04 05:05:02.592
firstHlo        = Jun 04 05:05:21.474
nbstFull        = Jan 01 00:00:00.000
&dbRetransList  = 0x10b96928
&lsrRetransList = 0x10b96930
&lsrAckList     = 0x10b96938
inactTID        = 0x10b96b08
helloTID        = 0x10b97cb8
dbRtxTID        = 0x10b98e68
lsrRtxTID       = 0x10b9b1c8
inactTo         = 160000
helloTo         = 20000
rXmitTo         = 5000
nCmdAcc         = 38
nInvCmd         = 0
nHloIn          = 35
nInvHlo         = 0
nLsuIn          = 2
nLsaIn          = 1
attHloOut       = 35
nHloOut         = 35
attLsuOut       = 1
nLsuOut         = 1
attLsaOut       = 2
nLsaOut         = 2
StuckCnt        = 0

Port Sub-State Data:
state            = DONE (5)
chassis_lock     = 0
lock_request     = 0
nbr_lock_lock    = 0
r_rdy_rcvd       = 0
nbr r_rdy flags = 0x0
lock_busy_cnt    = 0
decom_active     = 0
decom_initiator = 0
decom_active_port = -1
decom_trunk_member = 0
```

See Also

nbrStateShow, portShow, switchShow

iodReset

Disables in-order delivery (IOD) on a switch.

Synopsis

iodreset

Description

Use this command to disable in-order delivery enforcement on the local switch. IOD is disabled by default, and can only be disabled after it has been enabled with the **iodSet** command. This command disables the legacy IOD enforcement only.

Disabling IOD allows faster rerouting after a fabric topology change, but it may cause out-of-order delivery of frames during fabric topology changes.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To disable IOD enforcement:

```
switch:admin> iodreset

IOD is not set
```

See Also

iodSet, iodShow

iodSet

Enables in-order delivery (IOD).

Synopsis

```
iodset
iodset --help
```

Description

Use this command to enforce in-order delivery of frames during a fabric topology change.

In a stable fabric, frames are always delivered in order, even when the traffic between switches is shared among multiple paths. However, when topology changes occur in the fabric (for instance, a link goes down), traffic is rerouted around the failure and some frames might be delivered out of order. This command ensures that frames are not delivered out-of-order, even during fabric topology changes. It enforces a sufficient delay between the event that causes an existing path to be removed and the establishment of a new path, so that frames are delivered in order. However, this also means that frames are dropped during the delay, causing I/O failures.

When used without operands, **iodSet** enables in-order-delivery of frames on a switch (legacy IOD behavior). Frame loss is unavoidable when a port goes down.

IOD is disabled by default. Use **iodShow** to display current settings. Use **iodReSet** to restore the default setting.

Notes

This command is not supported on the Brocade Analytics Monitoring Platform.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--help

Displays the command usage.

Examples

To display the default legacy IOD setting:

```
switch:admin> iodshow

IOD is not set
```
To enable IOD:

```
switch:admin> iodset
```

```
IOD is set
```

See Also

iodShow, iodReset

iodShow

Displays the in-order delivery (IOD) setting.

Synopsis

```
iodshow
```

Description

Use this command to display the IOD setting on the switch. By default, IOD is disabled.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To display the current setting of the IOD setting:

```
switch:admin> iodshow

IOD is not set
```

See Also

None

ipAddrSet

Sets the Ethernet and FC IP addresses.

Synopsis

```
ipaddrset [-ipv6 ] [--add x:x:x:x:x:x:x/n | --delete]
ipaddrset [-cp cp_number | -chassis]
     [-ipv6 ] [--add x:x:x:x:x:x:x/n | --delete]
ipaddrset [-slot slot] [-eth0 | -eth1] [--add x.x.x.x/n | --delete]
ipaddrset [-slot slot] -gate [--add x.x.x.x | --delete]
ipaddrset -ls FID --add IPv4_address/prefix
ipaddrset -ls FID --delete
ipaddrset -ipv6 [-auto | -noauto]
ipaddrset [-cp cp_number | -chassis]
ipaddrset -cp cp_number -ipv4 -add -host hostname
     -ethip ipaddress -ethmask mask
     -gwyip gateway_ip
ipaddrset -ipv4 -add -ethip ipaddress -ethmask mask
     -gwyip gateway_ip -dhcp [ON | OFF]
ipaddrset -chassis -ipv4 -add
     -ethip ipaddress -ethmask mask
ipaddrset -ipv6 [-dhcpv6 | -nodhcpv6]
ipaddrset -ipv6 [-add | -del] -gwyip gateway_ip
ipaddrset --clear
ipaddrset --help
```

Description

Use this command to configure the IP addresses on a switch, a control processor (CP), a blade processor (BP), or a standalone application processor (AP). On platforms that support Logical Fabrics, this command configures the IPv4 Fibre Channel addresses for the logical fabric IPFC network interface. The IPFC (IP over Fibre Channel) protocol allows switches to send IP traffic over Fibre Channel rather than through Ethernet connections.

Any update to **ipAddrSet** command on a chassis-based system will validate if RON has been set, and the command fails unless RON is set.

This command supports an interactive legacy mode and a command line interface. Use the command line interface to configure IPv6 addresses, to enable or disable stateless IPv6 autoconfiguration, to assign a Fibre Channel IPv4 address and prefix to a logical switch IPFC network interface, and to configure a service port on the CP blade of a Brocade DCX. When run interactively in legacy mode, this command sets the Ethernet IPv4 address, subnet mask, and Gateway on a switch or a chassis.

Command usage depends on the type of IP address and on the platform on which the command is run. Some of the platform- and IP address-specific features of the command are outlined below. For complete details, refer to the *Brocade Fabric OS Administration Guide*.

Configuring IP Addresses using the command line interface

- The command accepts the **-ipv6** command line syntax with the **--add** or **--delete** option on all platforms that support IPv6 addresses. The **--add** option configures a single static IPv6 address and prefix for the specified managed entity (chassis, CP, or AP). The **--delete**

option deletes a static IPv6 address and prefix for the specified managed entity. On modular platforms, the command can be executed only on the active CP.

– When using the command line syntax to add or delete IPv6 addresses, the managed entity is identified only on modular platforms. To set the CP IPv6 address, use the **-cp**option; to set the IP address for the entire chassis, use the **-chassis** option.

– When using the command line syntax to add or delete IPv6 addresses on stand-alone platforms, the implied entity is the single managed entity supported by the platform and must be left unspecified.

– Additionally, the **-eth0**, **-eth1**, and **-gate** command line options are available with the **--add** or **--delete** option on platforms with blade processors to set the BP Ethernet or Gateway addresses. On a chassis with a blade processor the values for the blade in can be set from the command line using the **-slot** option. The **-slot** option is not accepted in standalone application processors with a hidden blade, such as the AP7600.

• Use the **-auto** and **-noauto** options to enable or disable stateless IPv6 autoconfiguration.

• Use the **-gwyip** operand with the **--add** or **--delete** option to add or delete IPv6 gateway address.

• Use the **-ls** option with appropriate arguments to set or delete the IPv4 Fibre Channel address and prefix for the IPFC interface of a logical switch. In a Virtual Fabric environment, each logical fabric is represented by a separate IPFC network interface. Each of these network interfaces can be assigned a unique IPv4 FC address and prefix. The logical switches that make up a logical fabric are identified by the fabric ID (FID) that is assigned to each of the logical switch instances.
When setting the IPFC interface of a switch that is not in Virtual Fabric mode, use the **-ls** option with FID 128. FID 128 identifies the switch when Virtual Fabrics are disabled.

Setting IP addresses interactively (IPv4 Ethernet address only):

• To set the CP Ethernet IPv4 address, use the **-cp** option; to set the Ethernet IP address for the entire chassis, use the **-chassis** option. When setting the chassis IP address, the command prompts for the Ethernet IP address and Ethernet subnet mask. When setting the CP Ethernet IP address, the command prompts for the host name, Ethernet IP address, Ethernet subnet mask, and Gateway IP address. Valid switch and CP numbers depend on the platform on which the command is run. The command must be executed on the active CP.

• On most standalone platforms (with the exception of the AP7600), **ipAddrSet** runs interactively if invoked without operands. The command prompts for the Ethernet IP address, Ethernet subnet mask, and Gateway IP address. In addition, the command prompts for a specification of whether the Dynamic Host Control Protocol (DHCP) should be used to acquire the Ethernet IP address, Ethernet subnet mask and Gateway IP address. Valid entries are "On" to enable DHCP and "Off" to disable it. When DHCP is enabled, any user-configured Ethernet IP address, Ethernet subnet mask or Gateway IP address is ignored.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

If the IP address is changed while there is an Ethernet connection, connectivity may be lost. The reason for this is explained in detail in the *Brocade Fabric OS Administration Guide*. If this happens, take one of the following actions to recover the interface:

- Unplug the network cable, wait 5 seconds, and then plug it back in.

- Perform a High Availability (HA) failover routine or hareboot for fixed port switches.

- Power down the switch and then power it back up again.

- Re-establish new Telnet or SSH sessions for the disconnected session after IP address change.

Operands

When used in command line mode, the following operands are supported:

-Ipv6

Specifies IP address type as static IPv6 including prefix as needed.

--add *x:x:x:x:x:x:x/n*

Sets the specified IPv6 address.

--delete [*x:x:x:x:x:x:x/n***]**

Deletes the specified IPv6 address. If no address is specified, any existing IPv6 addresses and prefixes are deleted from the specified or implied entity.

-cp *cp_number*

Specifies the CP on a chassis. Valid values are **0** or **1**.

-chassis

Specifies the IPv6 address and prefix of a chassis.

-gwyip *gateway_ip*

Specifies the IPv6 gateway address.

On platforms with blade processors, the following additional command line options are supported with the **--add** or **--delete options**:

-eth0 | -eth1

Specifies the local IPv4 address of the blade processor. A prefix is required.

-gate

Specifies the IPv4 address of the blade processor (BP) Gateway (no prefix).

-slot *number*

On a chassis with a blade processor (BP), specifies the slot number. On standalone platforms with a hidden BP, such as the AP76500, this parameter is not accepted.

-ipv6 [-auto | -noauto]

Enables or disables stateless IPv6 autoconfiguration on a switch or chassis. When autoconfiguration is enabled, the host automatically performs configuration of IPv6 addresses and periodic nondisruptive reconfiguration. By default, autoconfiguration is disabled.

-ls *FID*

Specifies the logical fabric ID for which to configure an IPFC network interface. The FID is a decimal number. A switch that is not in Virtual Fabric mode uses the -ls parameter with *FID* 128 (the effective, single Logical Fabric number on such switches) to set the IPv4 FC address. Note that setting the IP address for the logical switch is only for the IPFC interface, not for the Ethernet interface.

--add

Assigns a specified IPv4 FC address and prefix to the logical switch instance represented by the specified FID. This command replaces any existing FC IPv4 address.

IPv4_address/prefix

Specifies the IPv4 address and prefix for the IPFC network interface. The IP Address is represented by a dotted decimal number, followed by a slash and a prefix. This operand is required with the **--add** option.

--delete

Deletes the IPv4 FC address and prefix from a logical switch.

-ls *IFID*

Specifies the fabric ID that identifies the logical switch for which to delete the FC IPv4 address and prefix. This operand is required when deleting an FC IPv4 address from a logical switch. On a switch that is not in Virtual Fabric mode, use the **-ls** parameter with *FID* 128 (the effective, single Logical Fabric number on such switches) to delete the IPv4 FC address.

When used interactively to configure IPv4 addresses on a modular platform, ipAddrSet prompts for the following parameters:

-cp *cp_number*

Specifies the managed entity as a CP. Valid values include the following:

0

Sets the Ethernet IP address, Ethernet subnet mask, gateway IP address and host name of CP0.

1

Sets the Ethernet IP address, Ethernet subnet mask, gateway IP address and host name of CP1.

-chassis

Specifies the managed entity as the chassis.

-ipv4

Specifies IP address type as static IPv4.

-add

Sets the specified IPv4 address.

-host *hostname*

Sets the hostname.

-ethip *ipaddress*

Sets the ethernet IP address.

-ethmask *mask*

Sets the ethernet mask.

-gwyip *gateway_ip*

Sets the gateway IP address.

-dhcp[ON | OFF]

Enables or disables DHCP.

-dhcpv6

Enables DHCPv6. DHCPv6 is supported only on Brocade 6547 and Brocade 6549.

-nodhcpv6

Disables DHCPv6. DHCPv6 is supported only on Brocade 6547 and Brocade 6549.

--clear

Clears all IP (IPv4 and IPv6) addresses on a management interface.

--help

Displays command usage.

Examples

To configure an IPv6 address and prefix on a standalone platform:

```
switch:admin> ipaddrset -ipv6 --add  \
     fec0:60:69bc:60:260:69ff:fed0:107/64
```

To configure an IPv6 address and prefix on a single CP of a chassis:

```
switch:admin> ipaddrset -cp 0 -ipv6 --add  \
     1080::8:800:200C:417A/64
```

To delete any existing IPv6 address and prefix on CP0 on an enterprise-class platform:

```
switch:admin> ipaddrset cp 0 -ipv6 --delete
```

To configure an IPv4 FC address for the IPFC interface associated with a logical switch with fabric ID 123:

```
switch:admin> ipaddrset -ls 123 --add 11.1.2.4/24
IP address is being changed...Done.
```

To verify the IPv4 FC address for the logical switch:

```
switch:admin> ipaddrshow

CHASSIS
Ethernet IP Address: 10.32.220.10
Ethernet Subnetmask: 255.255.240.0

CP0
Ethernet IP Address: 10.32.220.11
Ethernet Subnetmask: 255.255.240.0
Host Name: cp0
Gateway IP Address: 10.32.208.1

CP1
Ethernet IP Address: 10.32.220.12
Ethernet Subnetmask: 255.255.240.0
Host Name: cp1
Gateway IP Address: 10.32.208.1
IPFC address for logical fabric ID 128: 1.2.3.4/24

Backplane IP address of CP0 : 10.0.0.5
Backplane IP address of CP1 : 10.0.0.6
```

To delete the IPv4 address for the IPFC interface associated with a logical switch with Virtual Fabric ID 67:

```
switch:admin> ipaddrset -ls 67 --delete
IP address is being changed...Done.
```

To configure an IPv4 FC address for the IPFC interface associated with a switch that is not in Virtual Fabric mode:

```
switch:admin> ipaddrset -ls 128 --add 10.32.72.70/24
IP address is being changed...Done.
```

To verify the changes:

```
switch:admin> ipaddrshow
```

```
SWITCH
Ethernet IP Address: 10.32.72.9
Ethernet Subnetmask: 255.255.240.0
Gateway IP Address: 10.32.64.1
DHCP: Off
IPFC address for virtual fabric ID 128: 10.32.72.70/24
```

To set the IPv4 address details for a switch chassis in interactive mode:

```
switch:admin> ipaddrset -chassis
Ethernet IP Address [192.168.166.148]:
Ethernet Subnetmask [255.255.255.0]:
Committing configuration...Done.
```

To enable DHCP on a standalone, non-AP platform:

```
switch:admin> ipaddrset
Ethernet IP Address [192.168.74.102]:
Ethernet Subnetmask [255.255.255.0]:
Gateway IP Address [192.168.74.1]:
DHCP [Off]: on
```

To enable DHCPv6 on a device:

```
switch:admin> ipaddrset -ipv6 -dhcpv6
```

To clear all IP address information on a management interface and verify the changes:

```
switch:admin> ipaddrset --clear
Warning: All management interface will be closed, \
   which will result in all network connections \
   being terminated.
Please initiate a connection to the serial console of \
   the switch to configure the management interface.
Would you like to continue with clearing the IP \
   configuration?(y/n)y
switch:admin> ipaddrshow
CHASSIS
Ethernet IP Address: none
Ethernet Subnetmask: none

CP0
Ethernet IP Address: none
Ethernet Subnetmask: none
Host Name: cp0
Gateway IP Address: none

CP1
Ethernet IP Address: none
Ethernet Subnetmask: none
Host Name: cp1
Gateway IP Address: none
```

See Also

ipAddrShow, ron

ipAddrShow

Displays IP address information for a switch or control processor (CP).

Synopsis

```
ipaddrshow
ipaddrshow [-cp cp_number] | -chassis
ipaddrshow -slot slot [-eth0 | -eth1 | -gate]
```

Description

Use this command to display the IP addresses configured in the system.

The **-cp** option displays the IP address for a specified CP on modular platforms, or use the command without arguments to display the IP address on a standalone switch, or the IP addresses for both CPs on a chassis.

On a standalone switch, the command displays the following information:

- Ethernet IP Address

- Ethernet Subnet mask

- The Gateway IP Address

- Dynamic Host Control Protocol (DHCP): on or Off

The following information is available only when the switch is configured with a static IPv6 address/gateway or DHCPv6 or Autoconfigured address or gateway:

- IPv6 Autoconfiguration Enabled: Yes or No

- Local IPv6 Addresses

- IPv6 Gateway address

- DHCPv6: on or off

On modular platforms, the command displays the following information:

For the chassis:

- Ethernet IP Address

- Ethernet Subnet mask

For each CP:

- Ethernet IP Address

- Ethernet Subnet mask

- Host Name

- Gateway IP Address

If the IPFC network interface is configured for logical switches:

- IPFC address for Virtual Fabric ID
  For each CP:

  – Backplane IP address

  – IPv6 Autoconfiguration Enabled: Yes or No. If enabled, the command displays:

  – All local IPv6 Addresses

  – Gateway IP addresses for both CPs

Local IPv6 addresses display the following identifiers:

- IP Address type:
  – **static** - A statically configured IPv6 address.

  – **stateless** - Acquired through stateless autoconfiguration.

- IP Address state:
  – tentative

  – preferred

  – deprecated

Refer to the RFC 2462 specification for more information.

On modular platforms with intelligent blades, the addresses configured for each slot can be shown with the **-slot** option. On standalone platforms, all command options are ignored.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

-cp *cp_number*

On dual-CP systems, specifies the CP card number to be displayed (0 or 1).

-chassis

On dual-CP systems, displays the IP addresses for the chassis.

-slot *slot*

Specifies the slot for a blade.

-eth0 | -eth1 |-gate

For a specified slot, shows only the selected Ethernet interface or the gateway . This operand is optional with the **-slot** option.

Examples

To display the IP addresses on a standalone switch:

```
switch:admin> ipaddrshow

SWITCH
Ethernet IP Address: 10.20.21.204
Ethernet Subnetmask: 255.255.240.0
Gateway IP Address: 10.20.16.1
DHCP: Off
IPv6 Autoconfiguration Enabled: Yes
Local IPv6 Addresses:
dhcpv6 fd00:60:69bc:82:a6f3:568b:a9cc:a149/64 preferred
stateless fd00:60:69bc:82:205:33ff:fe94:771f/64 preferred
IPv6 Gateways:
fe80::21b:edff:fe0b:2400
fe80::21b:edff:fe0b:7800
DHCPv6: On
```

To display all IP addresses on a Brocade DCX backbone:

```
switch:admin> ipaddrshow

Chassis
Ethernet IP Address: 10.33.60.85
Ethernet Subnetmask: 255.255.240.0

CP0
Ethernet IP Address: 10.33.60.86
Ethernet Subnetmask: 255.255.240.0
Host Name: cp0
Gateway IP Address: 10.33.48.1

CP1
Ethernet IP Address: 10.33.60.87
Ethernet Subnetmask: 255.255.240.0
Host Name: cp1
Gateway IP Address: 10.33.48.1

Backplane IP address of CP0 : 10.0.0.5
Backplane IP address of CP1 : 10.0.0.6
IPv6 Autoconfiguration Enabled: Yes
Local IPv6 Addresses:
chassis 0 stateless fd00:60:69bc:63:205:1eff:fe39:e45a/64 preferred
chassis 0 stateless fec0:60:69bc:63:205:1eff:fe39:e45a/64 preferred
cp 0 stateless fd00:60:69bc:63:205:1eff:fe40:6230/64 preferred
cp 0 stateless fec0:60:69bc:63:205:1eff:fe40:6230/64 preferred
cp 1 stateless fd00:60:69bc:63:205:1eff:fe39:ff2a/64 preferred
cp 1 stateless fec0:60:69bc:63:205:1eff:fe39:ff2a/64 preferred
IPv6 Gateways:
cp 0 fe80:60:69bc:63::3
cp 0 fe80:60:69bc:63::1
cp 0 fe80:60:69bc:63::2
cp 1 fe80:60:69bc:63::1
```

```
cp 1 fe80:60:69bc:63::2
cp 1 fe80:60:69bc:63::3
```

To display the IP addresses for a chassis:

```
switch:admin> ipaddrshow -chassis
CHASSIS
Ethernet IP Address: 10.32.220.10
Ethernet Subnetmask: 255.255.240.0
IPv6 Autoconfiguration Enabled: Yes
Local IPv6 Addresses:
chassis 0 stateless fd00:60:69bc:63:205:1eff:fe39:e45a/64 preferred
chassis 0 stateless fec0:60:69bc:63:205:1eff:fe39:e45a/64 preferred
IPv6 Gateways:
```

To display only the IP addresses for CP 1:

```
switch:admin> ipaddrshow

CP1
Ethernet IP Address: 10.33.60.87
Ethernet Subnetmask: 255.255.240.0
Host Name: cp1
Gateway IP Address: 10.33.48.1
```

See Also

ipAddrSet

ipFilter

Manages the IP filter policies.

Synopsis

```
ipfilter --create policyname -type ipv4 | ipv6
ipfilter --clone policyname -from src_policyname
ipfilter --show [-a] [policyname]
ipfilter --save [policyname]
ipfilter --activate policyname
ipfilter --delete policyname
ipfilter --addrule policyname -rule rule_number -sip source_IP
      -dp destination_port -proto protocol -act permit | deny
      [-type INPUT | FWD] -dip destination_IP
ipfilter --delrule policyname -rule rule number
ipfilter --transabort
ipfilter --clrcounters
ipfilter --showcounters
ipfilter --help
```

Description

Use this command to manage IP filter policies. The **ipFilter** command and command options are noninteractive, except when prompting for a confirmation.

The IP filter policy sets up a packet filtering firewall to provide access control on the management IP interface. The IPv4 and IPv6 policies are either in the defined configuration or in the active configuration.

Excluding the default policies, there can be a maximum of six policies in the defined configuration and one policy per IPv4 and IPv6 type in the active configuration.

The active policy must be the default policy or one of the policies in the defined configuration. Only the active policies are enforced. All of the **ipFilter** options except **--show** and **--transabort**, create a transaction owned by the management session initiating the commands.

An open transaction prevents other transactions from being created on different management sessions. The **--create**, **--clone**, **--delete**, **--addrule**, and **--delrule** operands modify policies in memory buffer, while operands, **--save** and **--activate** commit policies to the persistent configuration. The operands, **--save** and **--activate**, implicitly end the transaction if all policy changes are committed. The operand **--transabort** explicitly ends an open transaction and aborts policy changes in memory buffer. Closing the management session that owns the transaction also aborts policy changes and closes the transaction.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

In a Virtual Fabric environment, IP Filter policies are treated as chassis-wide configurations and apply to all logical switches in the chassis. Chassis permissions are required to manage IP Filter policies.

Operands

This command has the following operands:

policyname

Specifies an IP filter policy name. The policy name is a unique string composed of a maximum of 20 alphanumeric or underscore characters. The default_ipv4 and default_ipv6 names are reserved for default IP filter policies. The policy name is case-insensitive and is always stored as lower case. The policy type identifies the policy as an IPv4 or IPv6 filter. You can create a maximum of eight IP filter policies.

--create *policyname* **-type ipv4 | ipv6**

Creates an IP filter policy with the specified name and type. The policy created is stored in a temporary buffer and is lost if the policy is not saved to the persistent configuration.

--clone *policyname* **-from** *src_policyname*

Creates a replica of an existing IP filter policy. The cloned policy is stored in a temporary buffer and has the same rules as the original policy.

--show [-a] [*policyname*]

Displays the IP filter policy content for the specified policy name or all IP filter policies if *policyname* is not specified. For each IP filter policy, the policy name, type, persistent state, and policy rules are displayed. The policy rules are listed by the rule number in ascending order. The **-a** option displays the traffic type and the configured destination IP.

Command output displays without pagination. Use *command* | **more** to display the output with page breaks. If a temporary buffer exists for an IP filter policy, the **--show** operand displays the content in the temporary buffer, with the persistent state set to modified defined or modified active.

--save [*policyname*]

Saves one or all IP filter policies persistently as the defined configuration. This operand is optional. If a policy name is specified, only the specified IP filter policy in the temporary buffer is saved; otherwise, all IP filter policies in the temporary buffer is saved. Only the CLI session that owns the updated temporary buffer can run this command. Modification to an active policy cannot be saved without being applied. Therefore, the **--save** option is blocked for the active policies; instead use the **--activate** option.

--activate *policyname*

Activates the specified IP filter policy. IP filter policies are not enforced until they are activated. Only one IP filter policy per IPv4 and IPv6 type can be active. If there is a temporary buffer for the policy, the policy is saved to the defined configuration and activated at the same time. If there is no temporary buffer for the policy, the policy existing in the defined configuration becomes active. The policy to be activated replaces the existing active policy of the same type. Activating the default IP filter policies returns the IP management interface to its default state. An IP filter policy without any rule cannot be activated. This operand prompts for confirmation before proceeding.

--delete *policyname*

> Deletes the specified IP filter policy. Deleting an IP filter policy removes it from the tempo-rary buffer. To permanently delete the policy from the persistent database, issue the **ipfilter --save** command. An active IP filter policy cannot be deleted.

--addrule *policyname*

> Adds a new rule to the specified IP filter policy. The change made to the specified IP filter policy is not saved to the persistent configuration until saved or activated.

> The following arguments are supported with the **--addrule** option:

-sip *source_IP*

> Specifies the source IP address. For filters of type IPv4, the address must be a 32-bit address in dot notation, or a CIDR-style IPv4 prefix. For filters of type IPv6, the address must be a 12- bit IPv6 address in any format specified by RFC3513, or a CIDR-style IPv6 prefix. The source IP option is not supported for FORWARD traffic.

-dp *destination_port*

> Specifies the destination port number, a range of port numbers, or a service name. Note that blocking or permitting of port from 1 through 65535 is allowed. These ports are used by various applications and services on the switch.

-proto *protocol*

> Specifies the protocol type, for example, *tcp* or *udp*.

-act permit | deny

> Specifies the permit or deny action associated with this rule. Blocking or permitting of port from 1 through 65535 is allowed.

rule *rule_number*

> Adds a new rule at the specified rule index number. The rule number must be between 1 and the current maximum rule number plus one and you can also set a rule for a range of ports.

-type INPUT | FWD

> Specifies the type of traffic that is allowed for the specified IP address. Forwarding rules manage the bidirectional traffic between the external Ethernet interface (eth0/bond0) and the inband management interface (inbd+). For Forwarding rules, **-sip** is optional. INPUT traffic is the default type of traffic for IP filter rules and **-dip** is optional.

-dip *destination_IP*

> Specifies the destination IP address. For filters of type IPV4, the address must be a 32-bit address in dot notation, or a CIDR-style IPv4 prefix. For filters of type IPv6, the

address must be in a 128-bit IPv6 address in any format specified by RFC3513, or a CIDR-style IPv6 prefix.

--delrule *policyname* **-rule** *rule_number*

Deletes a rule from the specified IP filter policy. Deleting a rule in the specified IP filter policy causes the rules following the deleted rule to shift up in rule order. The change to the specified IP filter policy is not saved to the persistent configuration until it is saved or activated.

--transabort

A transaction is associated with a CLI or manageability session, which is opened implicitly when you execute the **--create**, **--addrule** and **--delrule** subcommands. The **--transabort** command explicitly ends the transaction owned by the current CLI or manageability session. If a transaction is not ended, other CLI or manageability sessions are blocked on the subcommands that would open a new transaction.

--clrcounters

Clears the IP filter counters. This command requires root permissions.

--showcounters

Displays the IP filter counters. This command requires root permissions.

--help

Displays the command usage.

Examples

To create an IP filter for a policy with an IPv6 address:

```
switch:admin> ipfilter --create ex1 -type ipv6
```

To add a new rule to the policy and specify the source IP address, destination port, and protocol, and to permit the rule:

```
switch:admin> ipfilter --addrule abc -rule 1 \
     -sip fec0:60:69bc:60:260:69ff:fe80:d4a -dp 65000  \
     -proto tcp -act permit

 switch:admin> ipfilter --addrule B_custom_ipv4 \
     -rule 10 -sip any -dp 1024-65535 -proto tcp -act deny
```

To display all existing IP filter policies:

```
switch:admin> ipfilter --show

Name: default_ipv4, Type: ipv4, State: active
Rule   Source IP       Protocol   Dest Port    Action
1      any             tcp        22           permit
2      any             tcp        23           permit
```

```
3      any              tcp         80            permit
4      any              tcp         443           permit
5      any              udp         161           permit
6      any              udp         123           permit
7      any              tcp         600 - 1023    permit
8      any              udp         600 - 1023    permit

Name: default_ipv6, Type: ipv6, State: active
Rule    Source IP    Protocol    Dest Port    Action
1      any              tcp         22           permit
2      any              tcp         23           permit
3      any              tcp         80           permit
4      any              tcp         443          permit
5      any              udp         161          permit
6      any              udp         123          permit
7      any              tcp         600 - 1023   permit
8      any              udp         600 - 1023   permit
```

To activate the IP Filter policy "ex1":

```
switch:admin> ipfilter --activate ex1
```

To display al l IP Filter policies, including the activated policy:

```
switch:admin> ipfilter --show

Name: default_ipv4, Type: ipv4, State: active
Rule    Source IP             Protocol Dest Port  Action
1      any                     tcp       22          permit
2      any                     tcp       23          permit
3      any                     tcp       80          permit
4      any                     tcp       443         permit
5      any                     udp       161         permit
6      any                     udp       123         permit
7      any                     tcp       600 - 1023 permit
8      any                     udp       600 - 1023 permit

Name: default_ipv6, Type: ipv6, State: defined
Rule    Source IP             Protocol Dest Port  Action
1      any                     tcp       22          permit
2      any                     tcp       23          permit
3      any                     tcp       80          permit
4      any                     tcp       443         permit
5      any                     udp       161         permit
6      any                     udp       123         permit
7      any                     tcp       600 - 1023 permit
8      any                     udp       600 - 1023 permit

Name: ex1, Type: ipv6, State: active
Rule    Source IP             Protocol   Dest Port Action
1 fec0:60:69bc:60:260:69ff:fe80:d4a tcp 23         permit
```

To create an IPv4-type IP filter policy:

```
switch:admin> ipfilter --create ex2 -type ipv4
```

To add a rule to the created policy "ex2":

```
switch:admin> ipfilter --addrule ex2 -sip 10.32.69.99 \
      -dp 23 -proto tcp -act permit
```

To display the IP filter policies, including the new policy:

```
switch:admin> ipfilter --show

Name: default_ipv4, Type: ipv4, State: active
Name: default_ipv4, Type: ipv4, State: active
Rule    Source IP             Protocol Dest Port  Action
1    any                      tcp        22         permit
2    any                      tcp        23         permit
3    any                      tcp        80         permit
4    any                      tcp       443         permit
5    any                      udp       161         permit
6    any                      udp       123         permit
7    any                      tcp      600 - 1023 permit
8    any                      udp      600 - 1023 permit

Name: ex2, Type: ipv4, State: defined (modified)
Rule    Source IP             Protocol   Dest Port Action
1    10.32.69.99              tcp          23         permit
```

To save the IP Filter policy "ex2" (the status of the policy changes from modified to defined after the policy is saved):

```
switch:admin> ipfilter --save ex2
switch:admin> ipfilter --show
Name: default_ipv4, Type: ipv4, State: active
Name: default_ipv4, Type: ipv4, State: active
Rule    Source IP             Protocol Dest Port  Action
1    any                      tcp        22         permit
2    any                      tcp        23         permit
3    any                      tcp        80         permit
4    any                      tcp       443         permit
5    any                      udp       161         permit
6    any                      udp       123         permit
7    any                      tcp      600 - 1023 permit
8    any                      udp      600 - 1023 permit

Name: ex2, Type: ipv4, State: defined
Rule    Source IP             Protocol   Dest Port Action
1    10.32.69.99              tcp          23         permit
```

To add a rule for traffic of type FORWARD and to display the result:

```
switch:admin> ipfilter --addrule ex2 -rule 1 -sip \
      10.32.69.99 -dp 23 -proto tcp -act permit -type fwd  \
      -dip 10.32.69.90

switch:admin> ipfilter --show -a
Legends: [Proto-Protocol, P-Permit, D-Deny, FWD-FORWARD, I/P-INPUT]

Name: default_ipv4, Type: ipv4, State: active
```

```
Rule      Source_IP    Proto  Dest_Port  Action   Flow   Destination_IP
1   any               tcp           22  P    I/P           any
2   any               tcp           23  P    I/P           any
3   any               tcp           80  P    I/P           any
4   any               tcp          443  P    I/P           any
5   any               udp          161  P    I/P           any
6   any               udp          123  P    I/P           any
7   any               tcp     600-1023  P    I/P           any
8   any               udp     600-1023  P    I/P           any

Name: default_ipv6, Type: ipv6, State: active
Rule      Source_I     Proto  Dest_Port  Action   Flow   Destination_IP
1   any               tcp           22  P    I/P           any
2   any               tcp           23  P    I/P           any
3   any               tcp           80  P    I/P           any
4   any               tcp          443  P    I/P           any
5   any               udp          161  P    I/P           any
6   any               udp          123  P    I/P           any
7   any               tcp     600-1023  P    I/P           any
8   any               udp     600-1023  P    I/P           any

Name: ex2, Type: ipv4, State: defined (modified)
Rule      Source_IP    Proto  Dest_Port  Action   Flow   Destination_IP
1   10.32.69.99       tcp           23  P    FWD   10.32.69.99
```

See Also

None

islShow

Displays interswitch link (ISL) information.

Synopsis

```
islshow
```

Description

Use this command to display the current connections and status of the interswitch link (ISL) for each port on a switch. The command output includes the following information:

*   Node world wide name (WWN)

*   Domain ID

*   Switch name

*   ISL connection speed, if applicable

*   Bandwidth

*   Trunking enabled, if applicable

*   QOS - QoS enabled, if applicable

*   ENCRYPT - Encryption enabled, if applicable

*   COMPRESS - Compression enabled, if applicable

*   CR_RECOV - Credit recovery enabled, if applicable

*   FEC -Forward Error Correction enabled, if applicable

When issued on a switch that is part of a logical fabric configuration, the **islShow** command displays logical interswitch links (LISLs) along with regular ISLs. However, speed (sp) displays N/A for logical ports. The bandwidth (bw) displayed is the sum of the bandwidth of all extended ISLs (XISLs) that form the LISL. A shared ISL (XISL) connects the base switches and is shared by different logical fabrics. It allows devices to communicate with each other within the logical fabric.

Connection speed is not applicable to LE_Ports or VE_Ports. For these port types, speed displays as "sp:-------".

Beginning with Fabric OS 7.1.0, this command will display the neighbor WWN information even when the ISL is segmented during exchange link parameter (ELP) or post ELP segmentation phase. In a fabric that has switches running Fabric OS 7.1.0 and pre-7.0.1 firmware, the neighbor information of the segmented links is displayed only on switches running Fabric OS 7.1.0 firmware. In a rare situation when ELP is not exchanged between two switches, the neighbor WWN information will be displayed only on the responder side that received ELP.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To execute **islshow** in a base fabric:

```
switch:user> islshow
1:  2->300 10:00:00:05:1e:43:00:00 100 DCX \
     sp:  8.000G bw: 32.000G TRUNK QOS
2:  8->  3 10:00:00:05:1e:41:8a:d5  30 B5300\
     sp:  4.000G bw: 16.000G TRUNK QOS
3: 19-> 10 10:00:00:05:1e:41:43:ac  50 B300 sp:\
     8.000G bw: 64.000G TRUNK
```

To execute **islshow** in a logical fabric:

```
switch:user> islshow
1: 33-> 29 10:00:00:60:69:80:4f:84   3 B3200 \
    sp:  2.000G bw:  4.000G TRUNK
2: 39->  7 10:00:00:60:69:45:68:04   4 B3850 \
    sp:  2.000G bw:  8.000G TRUNK
3: 41-> (incompatible)
4: 47-> (incompatible)
5: 95->  0 10:00:00:05:1e:01:0b:4a  15 B5100 \
    sp:  2.000G bw:  2.000G TRUNK
6:162->160 10:00:00:60:69:e2:09:fa   5 B2400 \
    sp:-------- bw:  0.001G
7:384-> 16 10:00:00:05:1e:37:02:73  39 DCX \
    sp:-------- bw:  10.000G
8:385-> 16 10:00:00:05:1e:37:02:73  43 B53000 \
     sp:-------- bw:  11.000G
```

To display interswitch links with encryption or compression enabled:

```
switch:user> islshow
1: 33-> 29 10:00:00:60:69:80:4f:84   3 B3200  \
   sp:  2.000G bw:  4.000G TRUNK ENCRYPT
2: 39->  7 10:00:00:60:69:45:68:04   4 B3850 \
   sp:  2.000G bw:  8.000G ENCRYPT COMPRESS
2: 38->  6 10:00:00:60:69:45:68:03   4 B3850 \
   sp:  2.000G bw:  8.000G COMPRESS
```

To display interswitch links with Credit Recovery and Forward Error correction enabled:

```
switch:user> islshow
1: 95-> 26 10:00:00:05:33:7e:69:c4   1 sw0 \
   sp: 16.000G bw: 16.000G CR_RECOV FEC
2:164-> 28 10:00:00:05:33:7e:69:c4   1 sw0  \
   sp: 16.000G bw: 16.000G TRUNK QOS CR_RECOV FEC
3:165-> 30 10:00:00:05:33:7e:69:c4   1 sw0  \
   sp: 16.000G bw: 16.000G QOS CR_RECOV FEC
4:166-> 31 10:00:00:05:33:7e:69:c4   1 sw0  \
   sp:  4.000G bw:  4.000G QOS CR_RECOV
5:167-> 29 10:00:00:05:33:7e:69:c4   1 sw0  \
```

```
     sp: 16.000G bw: 16.000G CR_RECOV FEC
6:340-> 27 10:00:00:05:33:7e:69:c4   1 sw0  \
   sp: 16.000G bw: 16.000G QOS CR_RECOV FEC
7:341-> 25 10:00:00:05:33:7e:69:c4   1 sw0  \
   sp: 16.000G bw: 16.000G QOS CR_RECOV FEC
8:342-> 32 10:00:00:05:33:7e:69:c4   1 sw0  \
   sp:  4.000G bw:  4.000G QOS CR_RECOV
9:343-> 24 10:00:00:05:33:7e:69:c4   1 sw0  \
   sp: 16.000G bw: 16.000G CR_RECOV FEC
```

To display interswitch links with D_Port enabled:

```
switch:user> islshow
  1: 24->343 10:00:00:05:1e:e5:e4:00   1 D-Port_DCX      sp: 16.000G
bw: 16.000G CR_RECOV FEC
  2: 25->341 10:00:00:05:1e:e5:e4:00   1 D-Port_DCX      sp: 16.000G
bw: 16.000G CR_RECOV FEC
  3: 26-> 95 10:00:00:05:1e:e5:e4:00   1 D-Port_DCX      sp: 16.000G
bw: 16.000G CR_RECOV FEC
  4: 27->340 10:00:00:05:1e:e5:e4:00   1 D-Port_DCX      sp: 16.000G
bw: 16.000G CR_RECOV FEC
  5: 29->166 10:00:00:05:1e:e5:e4:00   1 D-Port_DCX      sp: 16.000G
bw: 16.000G CR_RECOV FEC
  6: 30->165 10:00:00:05:1e:e5:e4:00   1 D-Port_DCX      sp: 16.000G
bw: 16.000G QOS CR_RECOV FEC
```

To display the neighbor switch WWN for the segmented ISLs during ELP and post ELP phase:

```
switch:user> islshow
[...]
1:9-> 2 10:00:00:05:1e:a3:00:59 (incompatible)
[...]
```

See Also

switchShow, trunkShow

itemList

Lists parameter syntax information.

Synopsis

```
item_list = element | element white item_list
element = item | item - item
item = num | slot [white]/ [white] num
slot = num
num = hex | int
int = int digit | digit
hex = 0x hex digit | hex hex digit
digit = 0|1|2|3|4|5|6|7|8|9
hex digit = digit |A|B|C|D|E|F|a|b|c|d|e|f
white = *["\\t\\f\\r ,"]
```

Description

All kernel diagnostics have at least one item list parameter to specify which ports to test. The normal default value for this parameter is to select everything.

This is not a command; rather, it is a common parameter to many commands.

If you want to restrict the items to be tested to a smaller set, the parameter value is an item list with the following characteristics:

- It is a comma-separated list of items.

- Each item in the list can be a single element or a range of elements separated by a dash character or a combination of both. For example,"0,3,4-6,1","0,1,3,4,5,6", and"0 3 4 - 6 1" each select items 0, 1, 3, 4, 5, 6, and 7.

- Spaces and tab stops are skipped.

- Each item might be proceeded by an optional slot number followed by a slash ("/").

Besides the syntax rules, there are also some grammatical restrictions on the slot numbers:

- Once specified, a slot selection applies to all items to the right of the slot selections until the next slot selection or the end of the item list. For example,"1/0 - 15" and"1/0 - 1/15" are equivalent.

- If no slot number is specified, user port lists are specified by area number. For instance,"0, 16, 32" and"1/0, 2/0, 3/0" specify the same ports on a 16-port/blade system. On that same system,"1/0, 16, 32" is not a valid list: even though it is legal syntax, the ports do not exist.

- If no slot number is specified, all lists except user port lists use the default slot 0.

- No list type except for user port lists may specify multiple conflicting slot numbers. For instance,"1/0, 2/0, 3/0" is a valid user port list but is not valid for any other type of list.

In the case of conflicting settings within a single item list, an error is generated, as described earlier. In the case of multiple item list parameters, the last one on the command line overrides previous settings.

The exact type of list varies, depending on the test and the parameter; however, the most common are blade ports and user ports. A list of blade ports is most commonly used by ASIC-level tests such as **turboRamTest** and represents which ports on the current blade (specified with **--slot** *number*) are tested. A list of user ports is used by higher-level tests to specify which user-accessible external ports within the current switch (selected during Telnet login) are tested. When specified in an item list, user ports might be specified by either the area portion of the ports Fibre Channel address or with *slot*/*port* notation. For nonblade systems, the port number on the silkscreen is the area number, so the two notations are identical.

For item list parameters, the parameter type is PT_LIST and the list type is one of the following:

```
Type    Grouping  Description
_____
BPORTS  Blade     Blade ports, internal and external ports.
UPORTS  Switch    User ports, ports with external connections.
QUADS   Blade     Quadrants, group of (normally 4) ports.
CHIPS   Blade     Chips, Asics within a blade.
MINIS   Blade     Mini switches.
SLOTS   Chassis   Slots.
INDEX   N/A       Anything.
```

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

None

See Also

portLedTest, portLoopbackTest

killTelnet

Terminates an open Telnet session.

Synopsis

```
killtelnet
```

Description

Use this command to terminate an open Telnet session. The command lists all current Telnet and serial port login sessions and information such as session number, login name, idle time, IP address of the connection, and timestamp of when the login session was opened. The command prompts you to specify the number of the session you want to terminate. The list of open sessions displayed with **killTelnet** includes your current session; be sure not kill your own Telnet session.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Examples

To terminate an open Telnet connection:

```
switch:admin> killtelnet
Collecting login information....Done
                   List of telnet sessions (3 found)

_____
Session No  USER      TTY       IDLE      FROM              LOGIN@
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
    0       root0     ttyS0     1:17m     -                 5:13pm
    1       admin0    pts/0     16.00s    192.168.130.29    6:29pm
    2       admin0    pts/1     3.00s     192.168.130.29    6:31pm
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
Enter Session Number to terminate (q to quit) 1
Collecting process information... Done.
   You have opted to terminate the telnet session:-
        logged in as "admin0 ", from "192.168.130.29 "
        since " 6:29pm" and has been inactive for "16.00s ",
        the current command executed being: "-rbash ".
        The device entry is: "pts/0 ".
  This action will effectively kill these process(es):-
                    USER       PID ACCESS COMMAND
/dev/pts/0          root     12868 f....  login
                    root     12869 f....  login
                    root     12877 f....  rbash
Please Ensure (Y/[N]): y
killing session.... Done!
Collecting login information....Done
```

```
          List of telnet sessions (2 found)
_____
Session No  USER     TTY      IDLE   FROM              LOGIN@
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
     0      root0    ttyS0    1:17m  -                 5:13pm
     1      admin0   pts/1    3.00s  192.168.130.29    6:31pm
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
Enter Session Number to terminate (q to quit) q
```

See Also

        None

lacp

Configures or displays various parameters of Link Aggregation Control Protocol (LACP) modules.

Synopsis

```
lacp --config -sysprio priority
lacp --default
lacp --show
lacp --help
```

Description

Use this command to configure or display various parameters of LACP modules.

Notes

This command is supported only on the Brocade 7840 and Directors that support Brocade FC32-64 Port Blade or Brocade SX6 blades.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--config -sysprio *priority*

Configures system priority. The valid values are from 0 through 65535.

--default

Removes all the non-default configuration with respect to LACP and reverts to default.

--show

Displays the LACP system information.

--help

Displays the command usage.

Examples

To configure system priority:

switch:admin> **lacp --config -sysprio 100**

To display protocol parameters:

```
switch:admin> lacp --show
LACP system prio 100
LACP System ID: 0x0064,00-27-f9-02-87-94
```

To revert to default configuration:

```
switch:admin> lacp --default
```

See Also

       None

ldapCfg

Maps LDAP AD server roles to default switch roles.

Synopsis

```
ldapcfg --maprole ldaprole switchrole
ldapcfg --unmaprole ldaprole
ldapcfg --mapattr ldaprole [-l LF_ID_list]
    [-h LF_ID] [-c chassis_role]]
ldapcfg --show
ldapcfg --help
```

Description

Use this command to map a Lightweight Directory Access Protocol (LDAP) Active Directory (AD) server role to one of the default roles available on a switch. This command also provides options to add Brocade and vendor-specific attributes or remove an existing mapping.

This command creates an alias for a customer-defined group, which allows a user belonging to that group to login to the switch with the permissions associated with the mapped switch role.

This command supports one-to-one role mapping only. For example, you might map the "SAN administrator" role on the AD server to the "admin" role on the switch, or the "SAN maintenance" role to the switch "operator" role. But the command fails if you attempt to map an already mapped AD server role.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command takes as input an action and its associated arguments. When no operand is specified, the command prints the usage.

This command has the following operands:

--maprole

Maps an LDAP role to a specified switch role. The following operands are required:

ldaprole

Specifies the LDAP role to be mapped to a switch role. The role must be a valid AD server role. A maximum of 64 characters are allowed for the ldaprole string. The string can consist of upper and lowercase letters, numbers, and special characters underscore(_) and hyphen(-).

switchrole

Specifies the switch role to which the LDAP role is mapped. Valid switch roles include the following:

- admin
- user
- switchadmin
- zoneadmin
- fabricadmin
- basicswitchadmin
- operator
- securityadmin
- userdefined

--unmaprole

Removes the mapping between an LDAP role and a switch role. Use the **--show** option for a listing of existing mappings. The following operand is required:

ldaprole

Specifies the LDAP AD sever role to be removed from the mapping.

--mapattr *ldaprole*

Adds the specified attributes to an existing LDAP role. This operand is valid only in VF mode. The attribute mapping for an LDAP role are to be removed before disabling the VF mode on a device when you configure to non-VF mode. Use **ldapcfg --unmaprole** to unmap the role and its corresponding attributes, followed by **ldapcfg --maprole** to remap only the LDAP role without any attributes before configuring device to non-VF mode. To map attributes, specify one or more of the following operands:

-l *LF_ID_list*

Specifies the Logical Fabrics to be added to the LDAP role. The value for the LF_ID_list format is "switchrole1=start_lf_id-end_lf_id [;switchrole2=start_lf_id-end_lf_id]". For example, "user=1-10;admin=11-128".

-h *LF_ID*

Specifies the home Logical Fabric. Home LF Role is the default logical switch context when you have no permission to log in to a particular logical switch context or over management interface.

-c *chassis_role*

>   Specifies the access permissions at the chassis level. Valid chassis roles include the
>   default roles except root and any of the user-defined roles.

--show

>   Displays a table of existing mappings between LDAP roles and their corresponding
>   switch role.

--help

>   Displays the command usage.

Examples

To display current LDAP and switch role map:

```
switch:admin> ldapcfg --show
  LDAP Role  |  Switch Role  |  Home VF  |  Chassis Role
-----------------------------------------------------------
  ldaprole   |  admin=1-128  |  25       |  admin
-----------------------------------------------------------
```

To map an LDAP AD server role to the switch role of "operator":

```
switch:admin> ldapcfg --maprole SANoperator operator
LDAP role SANoperator has been successfully mapped.

switch:admin> ldapcfg --unmaprole SANoperator
LDAP role SANoperator has been successfully unmapped.
```

To add attributes to an LDAP AD server role:

```
switch:admin> ldapcfg --mapattr ldaprole -l "user=1-10;admin=11-128" -h 128
-c admin
```

See Also

aaaConfig, userConfig

lfCfg

Configures and displays logical fabrics.

Synopsis

```
lfcfg [--show | --showall] -cfg
lfcfg [--show | --showall] -lisl [-v]
lfcfg [--show -xisl [slot/]port | --showall -xisl
lfcfg --lislenable
lfcfg --help
```

Description

Use this command to display logical fabric configuration information, to determine the status of logical interswitch links (LISLs), to enable LISLs between logical switches, and to display information about the XISLs and LISLs associated with each XISL.

A logical switch is a partition created on a physical switch that shares the physical resources of the base fabric while functioning as an independent entity in a "virtual" logical fabric. The logical fabric sits on top of a base physical fabric and ties otherwise disconnected logical switches together to share the same connectivity and physical resources. At the same time, the logical fabric provides protocol and management isolation, and each logical fabric is independently scalable.

The display options provided with this command show the logical fabric configuration for a given logical switch context or for a chassis context. Each logical switch displays only the user ports that are configured to be part of that switch instance. The switch context is defined by the fabric ID. The default context is the base logical switch that you are placed in upon login. The default logical switch context is defined by the fabric ID 128. To change the context, use the **setContext** command.

When issued with the **-cfg** option, this command displays the following information:

Chassis

Numeric identifier for the chassis.

Chassis WWN

Chassis world wide name.

Base switch Domain

The domain ID of the base switch.

For each logical switch, the following information is displayed:

Logical Switch

Numeric identifier for the logical switch within the chassis.

Base switch

Yes or No. This field indicates whether or not this logical switch is the base switch.

Fabric Id

The logical switch fabric ID (FID).

State

The state of the logical switch: Online or Offline.

Switch WWN

The logical switch world wide name.

When issued with the **-lisl** option, the command displays the following information:

FID

Fabric ID of the logical switch.

Port

Number of the logical LISL port.

remote-domain

Domain ID of the base switch in the remote chassis.

Name

Switch name.

State

Port state: Online or Offline.

Associated physical ports

Physical ports associated with the LISL ports.

When **lfCfg** is issued within a logical switch context, only the configuration regarding that switch and the fabrics reachable from that switch is displayed. When the command is issued in a chassis context the information for all chassis in the base fabric reachable from the current chassis is displayed. Executing chassis-level commands requires chassis permissions. Refer to the **userConfig** command for information on setting chassis user permissions.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

This command is supported only on hardware platforms that are Virtual Fabric-aware and run Fabric OS v6.2.0 or later. Refer to the *Brocade Fabric OS Administration Guide* for specific hardware support.

You cannot use the **portEnable** command on logical ports. Use **lfcfg** with the **--lislenable** option to re-enable disabled LISL ports on a logical switch.

This command is not supported on the Brocade Analytics Monitoring Platform.

Operands

This command has the following operands:

--show -cfg

Displays information for the fabric ID set by the context in all chassis reachable from the base fabric.

--showall -cfg

Displays information for all fabrics in all chassis reachable from the chassis context in which the command is executed. This option requires chassis permissions.

--show -lisl

Displays status information about the LISLs in the logical switch set by the context.

--showall -lisl

Displays status information of all LISLs in the chassis. This option requires chassis permissions.

-v

Displays, in addition to the LISLs, the physical ports on the base switch that are associated with the LISL ports. This operand is optional with the **-lisl** option.

--show -xisl [*slot/***]***port*

Displays the XISL and the LISLs associated with it for the specified XISL port. For each LISL port, the output displays the FID, LISL State (online/offline) and the local and remote logical switch WWNs. This command must be executed from the base switch.

--showall -xisl

Displays the XISL connections between two base switches for all XISL ports. This command must be executed from the base switch.

--lislenable

Re-enables all LISLs in the fabric that were disabled either due to **-lisldisable** option used during logical switch creation or by some conflict or error condition in the fabric. This command provides the option of manually reestablishing the LISLs after the error condition has been resolved.

--help

      Displays the command usage.

Examples

To display logical fabric information for FID 2 in all chassis reachable from the base fabric.

```
switch:admin> lfcfg --show -cfg

---------------------- Chassis: 1 --------------------
Chassis WWN: 10:00:00:05:1e:39:82:64
Number of Partitions: 2
Base switch domain: 1

   Logical switch: 2  Base switch: YES      Fabric Id: 2
   State: Online(1)   Switch WWN: 10:00:00:05:1e:39:81:67


---------------------- Chassis: 2 ----------------------
Chassis WWN: 10:00:00:05:1e:0b:a4:5e
Number of Partitions: 2
Base switch domain: 2

   Logical switch: 2  Base switch: YES      Fabric Id: 2
   State: Online(1)   Switch WWN: 10:00:00:05:1e:0b:a4:41
```

To display information for all fabrics in all chassis reachable from the base fabric:

```
switch:admin> lfcfg --showall -cfg

--------------------- Chassis: 1 -----------------------
Chassis WWN: 10:00:00:05:1e:39:82:64
Number of Partitions: 2
Base switch domain: 1

   Logical switch: 2  Base switch: YES      Fabric Id: 2
   State: Online(1)   Switch WWN: 10:00:00:05:1e:39:81:67

   Logical Switch: 1  Base switch: NO       Fabric Id: 1
   State: Online(1)   Switch WWN: 10:00:00:05:1e:39:81:66

--------------------- Chassis: 2 ------------------------
Chassis WWN: 10:00:00:05:1e:0b:a4:5e
Number of Partitions: 2
Base switch domain: 2

   Logical switch: 2  Base switch: YES      Fabric Id: 2
   State: Online(1)   Switch WWN: 10:00:00:05:1e:0b:a4:41

   Logical Switch: 1  Base switch: NO       Fabric Id: 1
   State: Online(1)   Switch WWN: 10:00:00:05:1e:0b:a4:40
```

To display the LISLs in the logical switch:

```
switch:admin> lfcfg --show -lisl
FID     Port#   remote-domai Name    State

2       384     24              sw0   PT Online
```

Displays status information about the LISLs in the logical switch set by the context:

```
switch:admin> lfcfg --show -lisl -v

ID Port# remote-domain Name State Associated Physical Ports
2  384   24            sw0  PT Online 1/29, 2/41, 3/33, 4/24
```

To display information about all LISLs in the chassis:

```
switch:admin> lfcfg --showall -lisl

FID     Port#   remote-domain   Name    State
2       384     24              sw0     PT Online
3       385     24              sw0     PT Online
```

To display all XISLs and the LISLs associated with each XISL:

```
switch:admin> lfcfg --showall -xisl

XISL Port No. : 12/30
LISL Pt. FID LISL State Local LS WWN          Remote LS WWN

450   10  PortOnline 10:00:00:05:1e:48:f8:02 10:00:00:05:1e:58:b2:5a
451   20  PortOnline 10:00:00:05:1e:48:f8:03 10:00:00:05:1e:58:b2:5b
452   30  PortOnline 10:00:00:05:1e:48:f8:04 10:00:00:05:1e:5b:69:d5
453   10  PortOnline 10:00:00:05:1e:48:f8:02 10:00:00:05:1e:5b:69:d4
454   30  PortOnline 10:00:00:05:1e:48:f8:04 10:00:00:05:1e:58:bd:6b
455   10  PortOnline 10:00:00:05:1e:48:f8:02 10:00:00:05:1e:58:bd:6a

XISL Port No. : 12/31
LISL Pt. FID LISL State       Local LS WWN            Remote LS WWN
448   10  PortOnline 10:00:00:05:1e:48:f8:02 10:00:00:05:1e:0b:87:dd
449   20  PortOnline 10:00:00:05:1e:48:f8:03 10:00:00:05:1e:0b:87:de
```

To display a specific XISL and the LISLs associated with it

```
switch:admin> lfcfg --show -xisl 12/31

XISL Port No. : 12/31
LISL Pt. FID LISL State  Local LS WWN            Remote LS WWN
448 10  PortOnline  10:00:00:05:1e:48:f8:02 10:00:00:05:1e:0b:87:dd
449 20  PortOnline  10:00:00:05:1e:48:f8:03 10:00:00:05:1e:0b:87:de
```

See Also

None

licenseAdd

Adds a license key to a switch.

Synopsis

licenseadd *license*

Description

Use this command to add a license key to a switch.

Some features of the switch and the fabric to which it is connected are optional, licensed products. Without a valid license installed for such products, their services are not available.

A license key is a string of any length consisting of upper- and lowercase letters and numbers. License keys are case-sensitive. The license must be entered exactly as issued. The system may accept an incorrectly entered license, but the licensed products will not function. After entering the license, use the **licenseShow** command to validate the product associated with the license. If no licensed products are shown, the license is invalid.

After you enter a license, the licensed product is generally available immediately without requiring further action. The following exceptions apply:

- Some licenses may require you to refresh the ports in order to activate the license. Depending on your system, use the **portDisable**/**portEnable**, **switchDisable**/**switchEnable** or **chassisDisable**/**chassisEnable** commands to refresh the ports.

- Some licenses may require that you reboot the switch to activate the license. The **licenseAdd** command will prompt you to reboot the switch.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operand:

license

Specifies the license key to be installed. This operand is required.

Examples

To add a license key to the switch:

```
switch:admin> licenseadd DXXtN3LmRSMWCSW3XmfSBPfrWKLZ3HMTN73rP9GANJMA
adding license-key [DXXtN3LmRSMWCSW3XmfSBPfrWKLZ3HMTN73rP9GANJMA]
```

See Also

licenseRemove, licenseShow

licenseIdShow

Displays the system license ID.

Synopsis

`licenseidshow`

Description

Use this command to display the license ID of the system.

Some features of the switch and the fabric are optional, licensed products. Without a license installed for such products, the services provided by these features are not available.

This command displays the system license ID used for generating and validating licenses on the system. The license ID format consists of eight pairs of hexadecimal values, separated by colons. Each hexadecimal value is between 00 (0) and FF (255).

Notes

While the format of this identifier might be similar or even identical to other identifiers in the system, no inferences should be made about the relationships between them as they are subject to change independently of one another.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To display the license ID:

```
switch:admin> licenseidshow
a4:f8:69:33:22:00:ea:18
```

See Also

licenseAdd, licensePort, licenseRemove, licenseShow, licenseSlotCfg

licensePort

Manages Dynamic Ports On Demand (DPOD) licenses.

Synopsis

```
licenseport --release port1[-port2]
licenseport --reserve port1[-port2]
licenseport --show
licenseport --method dynamic | static
```

Description

Use this command to manage and display Dynamic Ports on Demand (DPOD) license assignments.

Dynamic Ports On Demand (DPOD) is an optional feature available on all embedded platforms. DPOD takes the expansion capability of static Ports On Demand (POD) and adds the flexibility of activating any available port as long as a valid license is available. In Static mode, POD allows only specific fixed ports to be activated or licensed. With DPOD, any physical port can be made active as long as the total number of licenses is not exceeded.

The Dynamic POD feature assigns ports to the POD license in the order in which they come online until they equal the number of online licensed ports. This command provides the mechanism to make adjustments to the dynamic assignments by reserving assignments for specific ports in the event that there are more online ports than the purchased POD licenses can support.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

On unsupported platforms, this command returns a "not supported" message.

Operands

This command has the following operands:

port1[-*port2*]

Specifies a single port or a range of ports to which to assign or from which to remove a POD license. A port must be specified when releasing or reserving a port.

--release

Releases a license assignment from the specified ports when the switch is using the Dynamic POD method. The ports must be offline for this command to succeed.

--reserve

> Reserves a license assignment for the specified ports when the switch is using the Dynamic POD method. The ports must be offline for this command to succeed.

--show

> Displays the POD license assignments.

--method

> Selects the POD method as one of the following:

dynamic

> Selects the dynamic POD method.

static

> Selects the static POD method.

> The **--method** operand is not supported on Brocade G620 switch.

Examples

To activate Dynamic Ports On Demand:

```
switch:admin> licenseport --method dynamic
The POD method has been changed to dynamic.
Please reboot the switch now for this change to take effect.
```

To release a port from a Dynamic POD license assignment and to display the assignments:

```
switch:admin> portdisable 22
switch:admin> licenseport --release 22
switch:admin> licenseport --show
24 ports are available in this switch
  1 POD license is installed
    Dynamic POD method is in use
 24 port assignments are provisioned for use in this switch:
  12 port assignments are provisioned by the base switch license
  12 port assignments are provisioned by the first POD license
 * 0 more assignments are added if the second POD license
     is installed
 23 ports are assigned to installed licenses:
  12 ports are assigned to the base switch license
  11 ports are assigned to the first POD license
 Ports assigned to the base switch license:
   1, 2, 3, 5, 6, 7, 8, 10, 11, 14, 15, 19
 Ports assigned to the first POD license:
   0, 4, 9, 12, 13, 16, 17, 18, 20, 21, 23
 Ports assigned to the second POD license:
   None
 Ports not assigned to a license:
```

```
        22
    1 license reservation is still available for use by unassigned ports.
```

To reserve a Dynamic POD license assignment for a range of ports and to display the assignments:

```
switch:admin> portdisable 5-10
switch:admin> licenseport --reserve 5-10
switch:admin> licenseport --show
 48 ports are available in this switch
    Full POD license is installed
    Dynamic POD method is in use
 48 port assignments are provisioned for use in this switch:
    24 port assignments are provisioned by the base switch license
    24 port assignments are provisioned by a full POD license
  9 ports are assigned to installed licenses:
    9 ports are assigned to the base switch license
    0 ports are assigned to the full POD license
 Ports assigned to the base switch license:
    4, 5*, 6*, 7*, 8*, 9*, 10*, 16, 31
 Ports assigned to the full POD license:
    None
 Ports not assigned to a license:
    0, 1, 2, 3, 11, 12, 13, 14, 15, 17, 18, 19, 20, 21, 22, 23
    24, 25, 26, 27, 28, 29, 30, 32, 33, 34, 35, 36, 37, 38, 39, 40
    41, 42, 43, 44, 45, 46, 47

 39 license reservations are still available for use by unassigned
ports
 6 license assignments are held by offline ports (indicated by *)
```

To disable Dynamic Ports On Demand:

```
switch:admin> licenseport --method static
The POD method has been changed to static.
Please reboot the switch now for this change to take effect.
```

See Also

licenseAdd, licenseRemove, licenseShow, licenseShow

licenseRemove

Removes or deactivates a license key.

Synopsis

```
licenseremove license
```

Description

Use this command to remove an existing license key from a switch or to deactivate the license key. The existing license key must be entered exactly as shown by the **licenseShow** command. License keys are case-sensitive.

When the key has been removed, use the **licenseShow** command to verify that the key and the associated product have been uninstalled. You may need to reboot the switch after removing a license. For a switch that has no licenses installed, **licenseShow** displays "No licenses." Also, you may need to refresh the ports using the **portDisable**/**portEnable**, **switchDisable**/**switchEnable**, or **chassisDisable**/**chassisEnable** commands.

Upgradeable licenses, such as slot-based licenses or Universal Time-based licenses cannot be permanently removed; they remain in the database but are not displayed in the **licenseShow** output.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

The following operand is required:

license

Specifies the license key to be removed or deactivated. This operand is required.

Examples

To remove a license key from the switch:

```
switch:admin> licenseremove bQebzbRdScRfc0iK
removing license key [bQebzbRdScRfc0iK]
```

To deactivate a slot-based license:

```
switch:admin> licenseremove  \
    DXXtN3LmRSMWCSW3XmfSBPfrWKLZ3HMTN73rP9GANJMA \
    removing license-key  \
    [DXXtN3LmRSMWCSW3XmfSBPfrWKLZ3HMTN73rP9GANJMA]

switch:admin> licenseshow
SSezcSec9RXTf0dj:
```

```
Performance Monitor license
A7N9rATZLYgFa7JBfmGEJKETgCMHFGQMY4gfLmGAa4GA:
Advanced FICON Acceleration (FTR_AFA) license
Capacity 6
Consumed 2
Configured Blade Slots 3,4
KSYFYAtAfPGHDRJfCYQrC4Q9T9CYYmXDBJgLB:
Enhanced Group Management license
XFJXYHmPtCWC93CLgBD9BZD9AmTFgDStFDJGMaLKC9FgWAfgSE:
8 Gig FC license
Expiry Date 03/06/2009
License is expired
Hf7MBEEGCFNmTAWXXF99RtHXQN4RRtM3mLGtrWZLAMaTaAY9EB:
Storage Application Services license
Expiry Date 03/07/2009
```

See Also

licenseAdd, licenseIdShow, licenseShow

licenseShow

Displays current license keys.

Synopsis

```
licenseshow
```

Description

Use this command to display current license keys, along with a list of licensed products enabled by these keys. Depending on the type of license, this command displays the following information:

Permanent licenses

- License key

- Associated product

Temporary and universal time-based licenses

- License key

- Associated product

- Expiration date or expiration notice if the license has expired

Slot-based licenses

- License key

- Associated product

- Capacity (number of slots purchased)

- Consumed (number of slots configured to use the license)

- Configured Blade Slot Positions (slot numbers of the configured blade slots)

When no licenses are installed, the message "No license installed on this switch" is displayed.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

On the Brocade DCX and DCX 8510 chassis family running Fabric OS v7.0.0 and later, the interchassis link (ICL) license is displayed as an ICL Ports on Demand (POD) license. The fist ICL POD license indicates half of the ICL ports; the second ICL POD license indicates all of the ICL ports. When you upgrade a DCX to Fabric OS v7.0.0, the license display does not change. Refer to the example section for an illustration.

Operands

None

Examples

To display the license keys on a switch with permanent licenses installed:

```
switch:admin> licenseshow
S9bddb9SQbTAceeC:
     Fabric license
eezeRRySff0fSe:
     Remote Switch license
bzbzRcbcSc0c0SY:
     Remote Fabric license
dSeR9RcSeeTfSAq:
     Extended Fabric license
RyeSzRScycTzfT09:
     Entry Fabric license
RyeSzRScycazfT0G:
     Trunking license
RyeSzRScycS0fT09:
     4 Domain Fabric license
```

To display the license keys on a switch with temporary (expired) licenses installed:

```
switch:admin> licenseShow
7QmYFYJrmDgE9tTS4AYXB9trYSGtMtrQZSTK4ZSC7FC9ZAYAgE:
     Integrated Routing license
     Expiry Date 01/16/2008
     License is expired
33YBfZfKZ3tQKrRJJRtgmS3JDtCL99P4fYrJYQP7GffS4ASmNE:
     Enterprise Bundle license
     Expiry Date 01/16/2008
     License is expired
```

To display the license keys on a switch with universal time-based licenses:

```
switch:admin> licenseshow
DAmHTPgQ7KDtKrEYQC7X7STF9HJDL7TmTWRmZPmSTSE49AEfaE:
    Trunking license
    Expiry Date 11/11/2008
    License is expired
H47CFSa93aKgKJM9NWMYEMaLrATQWDHCgHfZftWGGgNCYAJaBA:
    High-Performance Extension over FCIP/FC license
     Expiry Date 12/20/2008
```

To display a slot-based 10G FC and 10G Gigabit Ethernet license on a Brocade DCX 8510-8:

```
switch:admin> licenseshow
tKLFTNAPDQtEPHFCf9YSPrafrTJCQALP49fXEGHA4SPB:
    10 Gigabit FCIP/Fibre Channel (FTR_10G) license
    Capacity 3
    Consumed 3
    Configured Blade Slots 1,3,12

switch:admin> slotshow -m

Slot   Blade Type    ID    Model Name      Status
---------------------------------------------------
  1    SW BLADE      97    FC16-32         ENABLED
```

```
 2      UNKNOWN                                VACANT
 3      AP BLADE     75    FX8-24              ENABLED
 4      UNKNOWN                                VACANT
 5      CORE BLADE   98    CR16-8              ENABLED
 6      CP BLADE     50    CP8                 ENABLED
 7      CP BLADE     50    CP8                 ENABLED
 8      CORE BLADE   98    CR16-8              ENABLED
 9      UNKNOWN                                VACANT
10      UNKNOWN                                VACANT
11      UNKNOWN                                VACANT
12      SW BLADE     96    FC16-48             ENABLED
```

To display an ICL license on a Brocade DCX 8510-8:

```
switch:admin> licenseshow
X3ffNTZM9CNmM4SKFLYTGS4WmCRCgAZZBJDTB:
    Inter Chassis Link (2nd POD) license
```

To display an ICL license on a Brocade DCX before and after a firmware upgrade to Fabric OS v7.0.0.

```
switch:admin> licenseshow
X3ffNTZM9CNmM4SKFLYTGS4WmCRCgAZZBJDTB:
    Inter Chassis Link (16 link) license
```

To display the WAN Rate upgrade licenses on a Brocade 7840 or 7810 switch:

```
switch:admin> licenseshow
gFEfTam4YHDLGXZBZ7RHHMBGmrrS3aNWgANKggEAGAJB:
    WAN Rate Upgrade 1 license
ARSNJE4GC9aJ4Y7FrBgYaEWWBfKK3EMRFHSBHtHAEERB:
    WAN Rate Upgrade 2 license
```

To display an ICL license port capacity on Gen 6 platform:

```
switch:admin> licenseshow
SEEL7KaF9KtSN3HCHLBDWBAQtmgaDPtfE3RaTSGAED4A:
    Inter Chassis Link (ICL) license
Capacity 16 (4 QSFPs per CR blade or 8 QSFPs per chassis)
```

See Also

licenseAdd, licenseIdShow, licenseRemove

licenseSlotCfg

Configures and displays slot-based licensed features.

Synopsis

```
licenseslotcfg --add feature slot
licenseslotcfg --remove feature slot
licenseslotcfg --show
licenseslotcfg --help
```

Description

Use this command to configure and manage licenses for the Brocade FX8-24 extension blade on the slot where the blade is installed.

Slot-based licenses allow you to select the slots the license will enable up to the purchased capacity and thereby increase existing capacity without disrupting the slots for which licensed features are already enabled.

There is a separate slot-based license key for each licensed feature supported on the blade.

The Brocade FX8-24 supports slot-based license keys for each of the following features:

- 10 GbE license - Enables the two 10GbE ports on the Brocade FX8-24.

- Advanced Extension license - Enables FCIP Trunking and Adaptive Rate Limiting.

- Advanced FICON Acceleration license - Accelerates FICON tape read and write and IBM Global Mirror data replication operations over distance.

The Brocade 7840 supports slot-based license keys for each of the following features:

- WAN Rate Upgrade 1 - Provides additional throughput up to 10Gb/s.

- WAN Rate Upgrade 2 - Provides unlimited throughput as supported by the hardware.

A license key with the specified capacity must be installed with the **licenseAdd** command before you can enable the feature on a specified slot with the **licenseSlotCfg** command. Refer to the *Brocade Fabric OS Administration Guide* for more information.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

feature

Specifies the licensed feature to be added at the specified slot. The feature is specified as a tag from the following set of licenses:

FTR_AE

>   Advanced Extension license

FTR_AFA

>   Advanced FICON Acceleration license

FTR_10G

>   10 Gigabit Ethernet license

FTR_UPG1

>   WAN Rate Upgrade 1 license

FTR_UPG2

>   WAN Rate Upgrade 2 license

slot

>   Specifies the slot number for the Brocade FX8-24 extension blade. This number corresponds to the physical blade slot number on the chassis.

--add

>   Adds a slot-based license to the specified slot.

--remove

>   Removes a slot-based license from the specified slot. This operation frees up the license to be assigned to another slot. You must disable the applications that use the license on this slot before you can deactivate the license.

--show

>   Displays slot assignments for all slot-based licenses in the chassis.

--help

>   Displays the command usage.

Examples

To configure the blade slots 3, 4, 11, and 12 to enable the license on these slots:

```
switch:admin> licenseslotcfg --add FTR_AE 3
Blade slot-3 added to FTR_AE slot-based license configuration
Remaining capacity for FTR_AE slot-based license = 7

switch:admin licenseslotcfg --add FTR_AE 4
        Blade slot-4 added to FTR_AE slot-based license configuration
```

```
Remaining capacity for FTR_AE slot-based license = 6

switch:admin> licenseslotcfg --add FTR_AE 11
        Blade slot-11 added to FTR_AE slot-based license configuration
Remaining capacity for FTR_AE slot-based license = 5

switch:admin> licenseslotcfg --add FTR_AE 12
Blade slot-12 added to FTR_AE slot-based license configuration
Remaining capacity for FTR_AE slot-based license = 4
```

To display the enabled licenses:

```
switch:admin> licenseslotcfg --show
FTR_10G license - blade slots configured = 1,3,5,12
FTR_AE license - blade slots configured = 3,4,11,12
FTR_AFA license - blade slots configured = 3,4
```

To deactivate the Advanced Extension license on slots 3 and 12, and to display the: results:

```
switch:admin> licenseslotcfg --remove FTR_AE 3
Blade slot-3 removed from FTR_AE slot-based
license configuration

switch:admin> licenseslotcfg --show
FTR_10G license - blade slots configured = 1,3,5,12
FTR_AE license - blade slots configured = 12
FTR_AFA license - blade slots configured = 3,4

switch:admin> licenseslotcfg --remove FTR_AE 12
Blade slot-12 removed from FTR_AE slot-based license configuration

switch:admin> licenseslotcfg --show
FTR_10G license - blade slots configured = 1,3,5,12
FTR_AFA license - blade slots configured = 3,4
```

To view the WAN Rate Upgrade licenses:

```
switch:admin> licenseslotcfg --show
licenseslotcfg: Command is not supported on this platform
```

See Also

licenseAdd, licenseIdShow, licenseRemove

linkCost

Sets or displays the Fabric Shortest Path First (FSPF) cost of a link.

Synopsis

```
linkcost [[slot/]port [cost]]
```

Description

Use this command to set or display the cost of an interswitch link (ISL). The cost of a link is a dimensionless positive number. The Fabric Shortest Path First (FSPF) protocol compares the cost of various paths between a source switch and a destination switch by adding the costs of all the ISLs along each path. FSPF chooses the path with minimum cost. If multiple paths exist with the same minimum cost, FSPF distributes the load among these paths. The default link cost value is 500.

When executed without operands, the command displays the current cost of each port on the switch, including non-ISLs. An E_PORT suffix is appended to the interface number of active ISLs. If a static cost is assigned to a port, a STATIC suffix is appended to the link cost. In this case, only the current link cost displays. Use **interfaceShow** to display both the default and current link costs.

Notes

This command sets a non-default, "static" cost for any port except EX/VEX ports.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

This command cannot be executed on a logical ISL (LISL).

Link cost cannot be configured on the AE_Ports. Static link costs configured on ports prior to the port becoming an AE_Port are cleared and reset to the default link cost of 7000 when the AE_Port comes online.

Operands

This command has the following operands

slot

For bladed systems only, specifies the slot number for which to set or display the cost, followed by a slash (/).

port

Specifies the port number for which to set or display the cost, relative to its slot for bladed systems. Use **switchShow** to list of valid ports.

cost

           Specifies the static cost of the link connected to the specified port. Recommended cost values are 0 through 32765. Setting static link cost values above 32765 will cause access problems. When you set a link cost value between 32766 and 65534, some parts of the fabric may become inaccessible. When you set the maximum link cost value of 65535, the port will become unusable. In either case, the command displays an appropriate warning message, and you are prompted to continue or to cancel and reissue the command with a lower link cost value. A value of 0 removes the static cost and the port reverts to its default link cost. If *cost* is not specified, the command displays the current cost of the specified port.

Examples

To display the link costs for all ports on a switch:

```
switch:admin> linkcost
 Port            Cost
--------------------------
1/0  (E_PORT)     500
1/1               500
1/2               500
1/3               500
1/4               500
1/5               500
1/6               500
1/7               500
1/8               500
1/9  (E_PORT)     500
1/10              500
1/11              500
1/12              500
1/13              500
1/14              500
1/15              500
Type <CR> to continue, Q<CR> to stop:
```

To set the ISL cost on a port:

```
switch:admin> linkcost 1/9 1000
```

To display the new cost value on the same port:

```
switch:admin> linkcost 1/9

Interface1/9  (E_PORT)  Cost   1000 (STATIC)
```

To delete the cost value and reset to default:

```
switch:admin> linkcost 1/9 0
```

To display the change:

```
switch:admin> linkcost 1/9

Interface1/9  (E_PORT)  Cost   500
```

To set the ISL cost to a value outside of the recommended range:

```
switch:admin> linkcost 1/9 32766
The link cost entered may prevent some parts of the fabric
from being accessible. If you do not want this to happen, choose n|no
and run 'linkcost' again with a value lower than 32766.
Do you want to continue? (yes, y, no, n): [no]y

switch:admin> linkcost 1/9

Interface1/9  (E_PORT)  Cost   32766 (STATIC)
```

To set the ISL cost to the maximum value:

```
switch:admin> linkcost 1/9 65535
The link cost entered will cause the port to become unusable.
If you do not want this to happen, choose n|no
and run 'linkcost' again with a value lower than 65535.
Do you want to continue? (yes, y, no, n): [no] n
```

See Also

interfaceShow, lsDbShow, topologyShow, uRouteShow

lldp

Configures or displays various parameters of Link Level Discovery Protocol (LLDP) module.

Synopsis

```
lldp --create -profile profile_name
lldp --delete -profile profile_name
lldp --config {[-sysname system name |
     -sysdesc system description | -mx multiplier
     [-profile profile_name] | -txintvl interval
     [-profile profile_name] }
lldp {--enable|--disable} [-port [slot/]port|port_range
     [-profile profile_name | -dcbxver auto|cee|precee]]
     [-tlv tlv_name [-profile profile_name]]
lldp --clear [-nbr|-stats] [[slot/]port|port_range]
lldp --show [-nbr [[[slot/]port|port_range][-detail]
     |-stats[[slot/]port|port_range]
     |-port] [[slot/]port|port_range]
     |-profile profile_name]
lldp --default
lldp --help
```

Description

Use this command to configure or display various parameters of LLDP modules.

Notes

This command is supported only on the Brocade 7840, Brocade 7810, and Directors that support Brocade FC32-64 Port Blade or Brocade SX6 blades. LLDP is applicable only to the GE user ports on the specified platforms and on the Ethernet ports of Brocade FC32-64.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--create

Creates the specified LLDP profile. A maximum of 32 characters are allowed for the *profile_name*. The values can be a combination of alphanumeric characters with special character underscore(_).

--delete

Deletes the specified LLDP profile.

--config

Configures global and LLDP profile parameters. The valid operators include the following:

-sysname

Configures system name used in the LLDP exchanges. The maximum length is 32 characters.

-sysdesc

Configures system description used in the LLDP exchanges. The description must be 255 characters in length and may include alphanumeric characters and underscores(_).

-mx

Configures multiplier values for the LLDP protocol. The *multiplier* valid range is from 2 through 10. The sub command **-profile** is optional and is used to configure **-mx** values on LLDP profile.

-txintvl

Configures TX interval values for the LLDP protocol. The *interval* range is from 4 through 180 seconds. The sub command **-profile** is optional and is used to configure **-txintvl** values on LLDP profile.

-profile *profile_name*

Configures the particular LLDP profile. This is an optional parameter.

--enable | --disable

Enables or disables LLDP protocol across the switch and the valid operators include the following:

-port *[slot/]port*

Enables or disables LLDP on the specified port. Also allows port range.

-dcbxver auto|cee|precee

Enables or disables DCBx version. The default DCBx version is **auto**.

-tlv *tlv_name*

Enables or disables the specified TLV on the profile or enables or disables LLDP TLV on global profile.

The values for *tlv_names* can be one of the following standard TLVs in LLDP.

• dcbx: IEEE Data Center Bridging exchange TLV

- • fcoe-app: IEEE DCBx FCoE Application TLV

- • fcoe-lls: IEEE DCBx FCoE Logical Link TLV

- • dot1: IEEE 802.1 Organizationally Specific TLV

- • dot3: IEEE 802.3 Organizationally Specific TLV

- • mgmt-addr: Management Address TLV

- • port-desc: Port-Description TLV

- • sys-cap: System Capabilities TLV

- • sys-desc: System Description TLV

- • sys-name: System Name TLV

-profile *profile_name*

Enables or disables the particular LLDP profile on a port when executed with **-port**.

--clear

Clears LLDP information.

-nbr

Clears the neighbor information for all ports or for the specified ports.

-stats

Clears the LLDP statistics information for all ports or for the specified ports.

--show

Displays the LLDP global information.

-nbr

Displays the neighbor information for all ports or for the specified ports.

-detail

Displays detailed neighbor information.

-stats

Displays the LLDP statistics information for all ports or for the specified ports.

-profile

Displays LLDP profile information.

-port

> Displays LLDP configuration for a specified port.

--default

> Removes all the non-default configuration with respect to LLDP and reverts to default.

--help

> Displays the command usage.

Examples

> To display global configuration information:
>
> ```
> switch:admin> lldp --show
> LLDP Global Information
> -----------------------
>   system-name:           sw0
>   system-description:    Brocade switch
>   description:           lldpglobalconfig
>   State:                 Enabled
>   Mode:                  Receive/Transmit
>   Advertise transmitted: 30 seconds
>   Hold time for advertise: 120 seconds
>   Tx Delay Timer:        1 seconds
>   Transmit TLVs:         Chassis ID           Port ID
>                          TTL                  System Name
>                          IEEE DCBx            DCBx FCoE App
>                             DCBx FCoE Logical Link
>   DCBx FCoE Priority Values: 3
> ```
>
> To display LLDP configuration for a given port:
>
> ```
> switch:admin> lldp --show -port 4/1
> LLDP information for 4/1
> ------------------------
>   State:                 Enabled
>   Mode:                  Receive/Transmit
>   Advertise Transmitted: 30 seconds
>   Hold time for advertise: 120 seconds
>   Tx Delay Timer:        1 seconds
>   DCBX Version :         CEE
>   Auto-Sense :           Yes
>   Transmit TLVs:         Chassis ID           Port ID
>                          TTL                  System Name
>                          IEEE DCBx            DCBx FCoE App
>                             DCBx FCoE Logical Link
>   DCBx FCoE Priority Values: 3
> ```
>
> To display neighbor information for all the ports:

```
switch:admin> lldp --show -nbr
Local port  Dead        Remaining Remote    Chassis ID      Tx    Rx
            Interval Life        port
1/8         120      99          port0      0005.1e78.f005 197   194
1/9         120      102         1/9        0027.f8f3.8570 188   14
1/20        120      118         port0      0005.1e8f.fba6 197   195
1/21        120      119         port0      0005.1e8f.f9b2 197   196
```

To display a detailed neighbor information for a particular port:

```
switch:admin> lldp --show -nbr  1/8 -detail
MANDATORY TLVs
===============
Local port:  1/8  (Local port MAC: 0027.f8f3.877f)
Remote port: port0 (Remote port MAC: 0005.1e78.f005)
Dead Interval: 120 secs
Remaining Life : 101 secs
Chassis ID: 0005.1e78.f005
LLDP PDU Transmitted: 199  Received: 199
OPTIONAL TLVs
==============

DCBX TLVs
===========
Version : CEE
DCBX Ctrl OperVersion: 0  MaxVersion: 0  SeqNo: 1  AckNo: 2
DCBX ETS OperVersion: 0  MaxVersion: 0  Enabled: 1  Willing: 1 Error: 1
Enhanced Transmission Selection (ETS)
  Priority-Group ID Map:
    Priority : 0  1  2  3  4  5  6  7
    Group ID : 0  0  0  0  0  0  0  0
  Group ID Bandwidth Map:
    Group ID  :  0   1   2   3   4   5   6   7
    Percentage:  0   0   0   0   0   0   0   0
    Number of Traffic Classes supported: 8
DCBX PFC OperVersion: 0  MaxVersion: 0  Enabled: 1  Willing: 1 Error: 0
Priority-based Flow Control (PFC)
    Enabled Priorities: none
    Number of Traffic Class PFC supported: 8
Application OperVersion: 0 MaxVersion: 0 Enabled: 1 Willing: 1 Error:
0
FCoE Application Protocol
    User Priorities: none
iSCSI Application Protocol
    User Priorities: none
```

To display statistics information for all the ports:

```
switch:admin> lldp --show -stats
LLDP port statistics for 1/8
Frames transmitted: 202
Frames Aged out:    0
Vlan Info Aged out: 0
TLV Info Aged out:  0
```

```
Frames Discarded:    0
Frames with Error:   0
Frames Received:     202
TLVs discarded:      0
TLVs unrecognized:   0

LLDP port statistics for 1/9
Frames transmitted: 193
Frames Aged out:     0
Vlan Info Aged out: 0
TLV Info Aged out:  2
Frames Discarded:    0
Frames with Error:   0
Frames Received:     192
TLVs discarded:      0
TLVs unrecognized:   0

LLDP port statistics for 1/10
Frames transmitted: 0
Frames Aged out:     0
Vlan Info Aged out: 0
TLV Info Aged out:  0
Frames Discarded:    0
Frames with Error:   0
Frames Received:     0
TLVs discarded:      0
TLVs unrecognized:   0
```

To display LLDP profile information:

```
switch:admin> lldp --show -profile LLDP_Profile_1
Profile-name:          LLDP_Profile_1
Advertise transmitted:  20 seconds
Hold time for advertise:100 seconds
Enabled TLVs:          dot1;dot3;sys-cap;
Profile ports:         3/24
```

See Also

        None

logicalGroup

Creates and manages groups of monitored elements.

Synopsis

```
logicalgroup --create group_name -type group_type
     [-feature feature_name -pattern value | -members member_list]
logicalgroup --delete group_name [-force]
logicalgroup --addmember group_name -members member_list
logicalgroup --delmember group_name -members member_list
logicalgroup --clone existing_group_name
     -name new_group_name
logicalgroup --update group_name -feature feature_name -pattern value
logicalgroup --restore group_name
logicalgroup --show [group_name] [-details]
logicalgroup --help
```

Description

Use this command to create and modify groups of elements that are to be monitored using the same set of thresholds. For example, you can create a group of ports that behave in a similar manner, such as UNIX ports or long-distance ports.

The elements in a group must be the same type: ports, circuits, or SFP transceivers. By creating a group of similar elements, you can manage these elements as a single entity.

The maximum number of user-defined groups is 64 per logical switch.

Notes

This command requires a Fabric Vision license.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

group_name

Specifies the name of the group to be configured. The name for the group must be unique; it is not case-sensitive and can contain up to 32 characters.

member_list

Specifies the elements in the group. The member list must be enclosed in double quotation marks and can consist of the following:

Port and SFP groups:

•   A single port, for example, "8" or "2/8" on bladed systems.

- A port range where the beginning and end port are separated by a dash, for example, "8-13" or "2/8-13" on bladed systems.

- A set of ports and port ranges separated by commas, for example, "3,5,7-10,15" or "2/3,2/5,3/7-10,4/15" on bladed systems.

Circuit groups:

- A single circuit in VE_Port/circuit format, for example, "33/5".

- A circuit range in VE_Port/circuit format, for example, "33/1-3".

- A set of circuits separated by commas, for example, "33/1-3,33/5".

--create *group_name*

Creates a group of monitored elements.

-type *group_type*

Specifies the type of elements present in the group. Valid types include the following:

port

The elements are FC ports.

circuit

The elements are FCIP circuits.

sfp

The elements are SFP transceivers.

-feature *feature_name*

Specifies the existing feature name for the group. Valid feature names are PORTNAME and NODEWWN.

-pattern *value*

Specifies the wildcard characters while defining the feature characteristics. The wildcard characters "*" for any string, "?" for any single character, "[expr]" for one character from the set specified in the expression, or '!' for negation of the string, are supported. If '!' is specified in the pattern, the pattern must be in single quotes.

-members *member_list*

Specifies the elements that are to be in the group.

--delete *group_name* **[-force]**

Deletes a logical group of monitoring elements. You cannot delete a predefined group. You cannot delete a group that is used by any rules. The **-force** option overrides the

default behavior. If a logical group is present in user-defined rules, the **-force** option deletes all the rules that are configured with the given group and then deletes the group.

--addmember *group_name*

Adds members to the group.

-members *member_list*

Specifies the elements that are to be added to the group.

--delmember *group_name*

Deletes members from the group.

-members *member_list*

Specifies the elements that are to be deleted from the group.

--clone

Creates a replica of an existing group. The new group has all of the members of the existing group. You can further modify the newly created group. The following operands are required:

existing_group_name

Specifies the name of an existing group. The group can be a predefined group or a user-defined group.

-name *new_group_name*

Specifies the name of the group to be created.

--update

Changes the characteristic string of an existing group.

-feature *feature_name*

Specifies the existing feature name for the group. Valid feature names are PORTNAME and NODEWWN.

-pattern *value*

Specifies the wildcard characters while defining the feature characteristics. The wildcard characters "*" for any string, "?" for any single character, "[expr]" for one character from the set specified in the expression, or '!' for negation of the string, are supported. If '!' is specified in the pattern, the pattern must be in single quotes.

--restore

Restores the membership entries for the group.

group_name

Restores entries for a single specified group. The name can be a predefined or a user-defined group created with feature option.

--show

Displays detailed information for a single group or all groups in MAPS. For each group, the group name, predefined flow, type, member count, and group members are displayed.

group_name

Displays information for a single specified group. The name can be a predefined or a user-defined group.

[-details]

Displays detailed information for each group. This operand is optional.

--help

Displays the command usage.

Examples

To create a group with three port members:

```
switch:admin> logicalgroup --create CRITICAL_PORTS
     -type port -members "2, 10, 22"
```

To add members to a group:

```
switch:admin> logicalgroup --addmember CRITICAL_PORTS
     -members "4, 5"
```

To delete members from a group:

```
switch:admin> logicalgroup --delmember CRITICAL_PORTS
     -delmember "5"
```

To clone a group:

```
switch:admin> logicalgroup --clone CRITICAL_PORTS
     -name LONG_DISTANCE_PORTS
```

To display the members of a group:

```
switch:admin> logicalgroup --show CRITICAL_PORTS
Group Name      |Predefined |Type |Member Count |Members
------------------------------------------------------------------
CRITICAL_PORTS  No          Port  9             2,4,10,22
```

To delete a group:

```
switch:admin> logicalgroup --delete CRITICAL_PORTS
```

To update a group:

```
switch:admin> logicalgroup --update dynGroup -feature portname -pattern
"port1*"
```

To restore a group:

```
switch:admin> logicalgroup --restore ALL_HOST_PORTS
```

To display detailed information about the group:

```
switch:admin> logicalgroup --show group1 -details
GroupName          : group1
Predefined         : No
Type               : Port
MemberCount        : 6
Members            : 2,11,20-23
Added Members      : 11
Deleted Members    : 1
Feature            : PORTNAME
Pattern            : port2*
```

See Also

mapsConfig, mapsDb, mapsPolicy, mapsRule, mapsSam

login

Logs in as new user.

Synopsis

login

Description

Use this command to log in to the switch with another user name and password, without first logging out from the original session. If you originally connected through a Telnet or rlogin session, that session is left open.

This command allows you to access commands that you cannot access at your current user level.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To log in as admin from the login user:

```
switch:user> login
login: admin
Password: ******
```

See Also

logout

logout

Logs out from a shell session.

Synopsis

logout

Description

Use this command to log out from a shell session. Remote login connections are closed and the local serial connections return to the **login** prompt.

The **exit** command is accepted as a synonym for **logout**, as is **Ctrl-D** at the beginning of a line.

Operands

None

Examples

To log out from an rlogin session:

```
switch:admin> logout
Closing the current session.
```

See Also

login

lsanZoneShow

Displays logical SAN zone information.

Synopsis

```
lsanzoneshow [-s] [-f fabricid] [-w wwn] [-z zonename] [-d | -deviceinfo]
        [-o | -sort] [-m | --maxcapacity] [-r | --remove]
        [-v | --verbose]
```

Description

Use this command to display the inter-fabric zones or LSAN zones. These zones are normal WWN zones created in FC Router EX_Port-connected fabrics and backbone fabrics. The LSAN zones are identified by the text string "lsan_" in the zone name. Note that the string is case insensitive so "LSAN_" also is valid. The FC Router uses these zones to establish the inter-fabric device import and export policy. The LSAN zones are established by zoning administration in each EX_Port-attached fabric and backbone fabric. Inter-fabric device sharing is allowed between two devices if the LSAN zones defined in their respective fabrics both allow the two devices to communicate; for example, the intersection of LSAN zones in two fabrics define the device sharing policy.

The LSAN zones are listed by fabric. Zone membership information (information about the devices in the zone) is provided for each LSAN zone. The default output displays only WWNs of the zone members.

Search parameters **-f**, **-w**, and **-z** allow searching for LSAN zones based on fabric ID, WWN of an LSAN zone member, or LSAN zone name.

"No LSAN zone found" is displayed if there is no LSAN zone information available at this FC Router.

Each LSAN zone entry displays the following:

Fabric ID

The ID of the fabric in which the LSAN zone was created.

Zone Name

The zone name.

Zone Members

The zone members or devices. The default output displays the WWN of the zone members.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

-s *state*

Displays state information for the device and the LSAN zone information. Valid states include the following:

Configured

Device is configured to be in an LSAN, but the device is neither imported nor exists in this fabric.

Initializing

Device is in an intermediate state. It is not yet imported into the fabric.

EXIST

Device exists in this fabric (the fabric of the zone entry).

Imported

Device has been imported (proxy created) into this fabric.

-f *fabricid*

Displays LSAN zones in the specified fabric.

-w *wwn*

Displays LSAN zones containing the specified port WWN. The WWN format is *xx:xx:xx:xx:xx:xx:xx:xx*.

-z *zonename*

Displays LSAN zones with the specified zone name. The database for zones is displayed per switch, which can differ from the database stored on the other FCR switches.

-d | -deviceinfo

Displays the fabric IDs of the LSAN devices. This command displays fabric IDs for **Imported** and **EXIST** devices. The devices that do not exist in the corresponding edge fabrics are displayed as **configured**.

-o | -sort

Displays the WWNs of the zone members in ascending order.

-m | --maxcapacity

Displays the list of LSAN zones and LSAN devices to be removed before downgrading to firmware version earlier than Fabric OS 8.1.0.

-r | --remove

> Displays the list of configuration scripts that can used to remove LSAN zones and LSAN
> devices before downgrading to firmware version earlier than Fabric OS 8.1.0.

-v | --verbose

> Displays the property members in peer zones.

Examples

> To display the LSAN zones:

```
switch:admin> lsanzoneshow
       Fabric ID: 4 Zone Name: lsan_fcr10_0
               50:05:07:65:05:84:0b:83
               50:05:07:65:05:84:09:0e
               10:00:00:00:c9:2b:6a:68
               21:00:00:20:37:18:22:55
       Fabric ID: 5 Zone Name: lsan_fcr11_0
               10:00:00:00:c9:2b:6a:68
               21:00:00:20:37:18:22:55
               50:05:07:65:05:84:0b:83
               50:05:07:65:05:84:09:0e
       switch#
```

> To display the LSAN zones with device information:

```
switch:admin> lsanzoneshow -d
Fabric ID: 10 Zone Name: LSAN_10
     30:02:00:05:1e:61:23:8f   EXIST in FID 10
     30:02:01:05:1e:61:23:8f   EXIST in FID 10
     30:00:00:05:1e:61:23:8f   Configured
     30:06:00:05:1e:61:23:8f   Imported from FID 20
     30:06:01:05:1e:61:23:8f   Imported from FID 20
Fabric ID: 20 Zone Name: LSAN_20
     30:02:00:05:1e:61:23:8f   Imported from FID 10
     30:02:01:05:1e:61:23:8f   Imported from FID 10
     30:01:00:05:1e:61:23:8f   Configured
     30:06:00:05:1e:61:23:8f   EXIST in FID 20
     30:06:01:05:1e:61:23:8f   EXIST in FID 20
```

> To display state information for the device and sort the WWNs in ascending order:

```
switch:admin> lsanzoneshow -s -sort
Fabric ID: 12 Zone Name: lsan_zone1
     30:06:00:05:1e:61:23:8f EXIST
     30:0c:00:05:1e:61:23:8f Imported
Fabric ID: 16 Zone Name: lsan_zone1
     30:06:00:05:1e:61:23:8f Imported
     30:0c:00:05:1e:61:23:8f EXIST
Fabric ID: 20 Zone Name: lsan_bb
     10:06:00:01:1e:61:23:8f Configured
     10:06:00:05:1e:61:23:8f Configured
```

```
        20:03:00:05:1e:61:23:8f Configured
        20:06:00:05:1e:61:23:8f Configured
```

To display the list of LSAN zones to be removed before downgrading to pre-FOS v8.1.0:

```
switch:admin> lsanzoneshow -m
List of LSAN Zones need to be removed before downgrade to pre-FOS
v8.1.0:
Fabric_ID   Zone_Name
-----------------------------------------
30      lsan_5
60      lsan_6
Total unsupported LSAN Zones: 2

List of LSAN Devices need to be removed before downgrade to pre-FOS
v8.1.0:
-----------------------------------------------------------------------
-----------
Fabric ID    Port            State        Imported   Zone Name
             WWN                          Fabric ID
-----------------------------------------------------------------------
-----------
30  30:08:03:05:1e:61:28:22   EXIST        -          lsan_4
30  30:0c:03:05:1e:61:28:22   Imported     60         lsan_4
60  30:08:00:05:1e:61:28:22   Configured   -          lsan_1
60  30:0c:00:05:1e:61:28:22   EXIST        -          lsan_1
60  30:08:02:05:1e:61:28:22   Imported     30         lsan_3
Total unsupported LSAN Devices: 5
```

To display the list of configuration scripts to remove LSAN zones and LSAN devices:

```
switch:admin> lsanzoneshow -r
List of LSAN Zones need to be removed before downgrade to pre-FOS
v8.1.0:
-----------------------------------------------------------------
---- LSAN Zones need to be removed from fabric: 30 ----
cfgremove "<active_cfg_name>","lsan_5"
---- LSAN Zones need to be removed from fabric: 60 ----
cfgremove "<active_cfg_name>","lsan_6"
Total unsupported LSAN Zones: 2

List of LSAN Devices need to be removed before downgrade to pre-FOS
v8.1.0:
-----------------------------------------------------------------
---- LSAN Devices need to be removed from fabric 30 ----
zoneremove "lsan_4","30:08:03:05:1e:61:28:22"
zoneremove "lsan_4","30:0c:03:05:1e:61:28:22"
---- LSAN Devices need to be removed from fabric 60 ----
zoneremove "lsan_1","30:08:00:05:1e:61:28:22"
zoneremove "lsan_1","30:0c:00:05:1e:61:28:22"
zoneremove "lsan_3","30:08:02:05:1e:61:28:22"
Total unsupported LSAN Devices: 5
```

To display the property members in peer zone:

```
switch:admin> lsanzoneshow -v
```

```
Fabric ID: 12 Zone Name: LSAN_HH_253_1_SB_020_1_0
    00:02:00:00:00:03:00:01
    10:00:8c:7c:ff:b1:90:80
    20:00:00:11:0d:16:00:00
Fabric ID: 12 Zone Name: LSAN_HH_253_2_SB_020_2_0
    00:02:00:00:00:03:00:01
    10:00:8c:7c:ff:b1:90:81
    20:01:00:11:0d:16:01:00
Fabric ID: 12 Zone Name: LSAN_HH_253_3_SB_020_3_0
    00:02:00:00:00:03:00:01
    10:00:8c:7c:ff:a9:a5:00
    20:02:00:11:0d:0b:00:00
(output truncated...)
```

See Also

fcrFabricShow, fcrPhyDevShow, fcrProxyDevShow, fcrRouteShow, switchShow

lsCfg

Configures and manages a logical switch

Synopsis

```
lscfg --create FID [[-b | -base] | -lisldisable |
     [-n | -ficon]] [-f | -force]
lscfg --delete FID [-f |-force]
lscfg --config FID [-slot  slot1[-slot2]]
     [-port [ port1[-port2]] [-q | -qsfp]
     [-f |-force]
lscfg --restore_to_default FID
lscfg --restore_slot_to_default slot
lscfg --change FID [[-newfid FID] | [-base]] [-force]
       [-ficon]
lscfg --show [-ge] [-provision] [-n | -name]
     [-instance]
lscfg --help
```

Description

Use this command to create a logical switch and to modify logical switch configurations.

The logical switch feature provides the ability to partition a single physical switch into multiple switch instances. Each of these switch partitions is referred to as a logical switch (LS). The logical switch feature allows you to configure multiple logical fabrics on top of a base (physical) fabric. Each logical fabric is made up of logical switches that share the physical resources of the base fabric, for example, interswitch link (ISL) connectivity. At the same time, protocol and management isolation of each logical fabric is maintained, and each logical fabric can scale independently.

The Brocade Analytics Monitoring Platform supports creation of 4 partitions. However, it is recommended not to create a base switch on Brocade Analytics Monitoring Platform because it is not needed for IO Analytics.

The Default Logical Switch is created by the system and cannot be deleted. All switch ports not explicitly assigned to a logical switch are part of the default logical switch.

The Virtual Fabric (VF) feature must be enabled on the switch before you can configure a logical switch. Use the **fosconfig --enable vf** command to enable the feature. Use the **fosconfig --show** command to determine whether the VF feature is enabled or disabled on the switch.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Not all commands that support the **-force** option will prompt for user input when used without the **-force** option.

Operands

This command has the following operands:

--create

Creates a logical switch instance. The following operands are supported.

FID

Specifies the Fabric ID. Each logical switch in a chassis is assigned a unique fabric iden-
tifier. The FID address space is shared between logical switches and EX_Ports. Valid FID
values are integers between 1 and 128. The default logical switch is assigned FID 128
by default. This operand is required.

-b | -base

Creates a base logical switch on the chassis. A base logical switch communicates among
different logical switches. Legacy switches can be connected to the base logical switch
through EX_Ports, and interswitch links (ISLs) between base logical switches enable
communication among different logical switches. This operand is optional.

-lisldisable

Configures the LISL ports to remain in the offline state after the logical switch is created.
By default, LISL ports are created and set to online state after the logical switch is
created. This option provides the capability to override the default behavior. Use the **lfcfg
--lislenable** command to enable the LISL ports manually. This operand is optional.

-n | -ficon

Creates a logical switch with FICON configurations on the chassis. This option automat-
ically enables configuration attributes such as IDID, fabric binding, high integrity fabric
mode, DBR routing policy, 256-Area limited addressing mode, and so on. This operand
is optional.

-f | -force

Executes the command without confirmation. This operand is optional.

--delete

Deletes a logical switch with the specified fabric ID. The specified logical switch must
exist and no ports should be configured on this partition. You must remove all ports from
the logical switch before deleting the logical switch instance. Use the **lscfg --config**
command to remove the ports.

FID

Specifies the Fabric ID of the logical switch. This operand is required.

-f | -force

Executes the command without confirmation. This operand is optional.

--config

Configures the specified logical switch. This command assigns ports to the logical switch specified by a given FID. The ports are removed from the partition on which they are currently configured. This command prompts for confirmation, indicating that the specified ports will be disabled. The following operands are supported:

FID

Specifies the fabric ID of the logical switch. This operand is required.

-slot *slot1*[*-slot2*]

Specifies the slot number or a range of slot numbers separated by a dash, for example **-slot 3-5**. This operand is required.

-port *port1*[*-port2*]

Specifies the ports to be assigned to the logical switch. Provide a valid port, or a range of ports separated by a dash, for example **-port 3-8**. This operand is optional; if omitted, all ports on the specified slots are assigned.

-q | -qsfp

Moves all ports in a quad small form-factor pluggable (QSFP) group to be assigned to the logical switch. This operand is optional.

-f | -force

Executes the command without confirmation. This operand is optional.

--restore_to_default *FID*

Moves all vacant ports in the logical switch specified by **FID** to the default switch. Use this command when **lsCfg --show** displays no ports, but the switch continues to generate errors indicating that there are ports on the switch.

--restore_slot_to_default *slot*

Moves all ports on a specified slot to the default switch.

--change

Changes the fabric ID of a logical switch, creates a base logical switch out of an existing logical switch, or removes base switch properties. The **-newfid** and **-base** operands are exclusive and may not be combined. The following operands are supported:

FID

Specifies the Fabric ID of the logical switch. This operand is required.

-n | -newfid *FID*

Changes the fabric ID of an existing logical switch. This command effectively removes the logical switch from a given logical fabric and makes it part of another logical fabric.

-b | -base

Turns an existing logical switch into a base switch. When this command is issued on a switch that is already a base switch, this command removes the base switch properties. This command disables the current logical switch. After making the change, you must re-enable the switch.

-ficon

Turns an existing logical switch into a FICON mode logical switch. This command fails when it is issued on a switch that is already a FICON mode logical switch. This command disables the current logical switch. After making the change, you must re-enable the switch.

-f| -force

Executes the command without confirmation. This operand is optional.

--show

Displays the partition configuration on a switch or chassis. Without any operands, the command displays all logical switches and the FC ports assigned to them. For each switch, the FID, switch role, and domain ID are displayed: base switch (bs) or default switch (ds). The following operands are optional with the **--show** option.

-ge

Displays partition configuration information for GbE ports. This operand is valid on the Brocade 7840 and Brocade 7810 switches, as well as Brocade FX8-24 and Brocade SX6 blades.

-provision

Displays the partition configuration for all slots, regardless of the slot's status. This operand is valid only on a chassis and can be used with or without the **-ge** option.

-n | -name

Displays fabric ID, switch type, domain ID, switch name, and fabric name of the logical switch. This operand can be used with the **-n** or **-name** option.

-instance

Displays the switch instance number of the logical switch.

--help

Displays the command usage.

Examples

To create a base switch:

```
switch:admin> lscfg --create 1 -base
Creation of a base switch requires that the proposed
   new base switch on this system be disabled.
Would you like to continue [y/n]?: y
About to create switch with fid=1. Please wait...

Switch successfully created.

Logical Switch has been created with default configurations.
Please configure the Logical Switch with appropriate switch
and protocol settings before activating the Logical Switch.
```

To create a logical switch identified by fabric ID 2:

```
switch:admin> lscfg --create 2
A Logical switch with FID 2 will be created with default configuration.
Would you like to continue [y/n]?: y
About to create switch with fid=2. Please wait...
switch1 Updating flash ...
2013/05/02-10:13:59, [ZONE-1034], 373, SLOT 4 | FID 2, INFO, switch_2,
\
   A new zone database file is created.
2013/05/02-10:14:15, [FSSM-1002], 374, SLOT 5 | CHASSIS, INFO, switch,
\
   HA State is in sync.
All service instances in sync
2013/05/02-10:14:15, [FSSM-1002], 375, SLOT 4 | CHASSIS, INFO, switch,
\
   HA State is in sync.
Logical Switch with FID (2) has been successfully created.

Logical Switch has been created with default configurations.
Please configure the Logical Switch with appropriate switch
and protocol settings before activating the Logical Switch.
2013/05/02-10:14:17, [PMGR-1001], 376, SLOT 4 | CHASSIS, INFO, switch,
\
   Attempt to create switch 2 succeeded.
```

To create a base switch with FID 2 without confirmation:

```
switch:admin> lscfg --create 2 -base -force
About to create switch with fid=2. Please wait...
Switch successfully created.

Logical Switch has been created with default configurations.
Please configure the Logical Switch with appropriate switch
and protocol settings before activating the Logical Switch.
```

To delete a logical switch:

```
switch:admin> lscfg --delete 2
The Logical switch with FID 2 will be deleted.
Would you like to continue [y/n]?: y
```

```
2013/05/02-10:18:08, [FW-1424], 387, SLOT 4 | FID 2, WARNING, switch_2,
\
    Switch status changed from HEALTHY to MARGINAL.
2013/05/02-10:18:08, [FW-1439], 388, SLOT 4 | FID 2, WARNING, switch_2,
\
    Switch status change contributing factor Switch offline.
All active login sessions for FID 2 have been terminated.
Switch successfully deleted.
2013/05/02-10:18:29, [PMGR-1003], 389, SLOT 4 | CHASSIS, INFO,
pluto_19, \
    Attempt to delete switch 2 succeeded.
```

To assign ports to a logical switch:

```
switch:admin> lscfg --config 2 -port 10-12
This operation requires that the affected ports be disabled.
Would you like to continue [y/n]?: y
Making this configuration change.  Please wait...
Configuration change successful.
Please enable your ports/switch when you are ready to continue.
```

To assign ports to a logical switch without confirmation:

```
switch:admin> lscfg --config 2 -port 0-4 -force
Configuration change successful.
Making this configuration change.  Please wait...
Please enable your ports/switch when you are ready to continue.
```

To move all ports in a QSFP group to a logical switch:

```
switch:admin> lscfg --config 10 -slot 5 \
    -port 0-20 -qsfp
This operation requires that the affected ports be disabled and will
move all \
    ports(0-23) in qsfp to fid 10.
Would you like to continue [y/n]?: y

Making this configuration change.  Please wait...
Dispatch a request to kernel-land component: swc
Dispatch a request to kernel-land component: swc
Configuration change successful.
Please enable your ports/switch when you are ready to continue.
```

To display the logical switch configuration for :FC ports only:

```
switch:admin> lscfg --show

Created switches FIDs(Domain IDs):  128(ds)(10)  1(bs)(1)  2(1)
Port   0    1    2    3    4    5    6    7    8    9
-------------------------------------------------------------
FID    1 |  1 |  1 |  1 |  1 |  1 |  1 |  1 |  2 |  2

Port  10   11   12   13   14   15   16   17   18   19
-------------------------------------------------------------
FID  128 | 128 | 128 | 128 | 128 | 128 | 128 | 128 | 128 | 128

Port  20   21   22   23   24   25   26   27   28   29
```

```
            ----------------------------------------------------------------
FID  128 | 128 | 128 | 128 | 128 | 128 | 128 | 128 | 128 | 128

Port 30     31     32     33     34     35     36     37     38     39
            ----------------------------------------------------------------
FID  128 | 128 | 128 |   2 |   2 |   2 | 128 | 128 | 128 | 128
```

To display the logical switch configuration for GbE ports only (in the example, all GbE ports are in logical switch 2):

```
switch:admin> lscfg --show -ge

Created switches FIDs(Domain IDs):  (ds)  2(bs)(1)  1(1)

Slot     1     2     3     4     5     6     7     8
    ------------------------------------------------------
Port
 0     |     |   2 |     |     |     |     |     |     |
 1     |     |   2 |     |     |     |     |     |     |
 2     |     |   2 |     |     |     |     |     |     |
 3     |     |   2 |     |     |     |     |     |     |
 4     |     |   2 |     |     |     |     |     |     |
 5     |     |   2 |     |     |     |     |     |     |
 6     |     |   2 |     |     |     |     |     |     |
 7     |     |   2 |     |     |     |     |     |     |
 8     |     |   2 |     |     |     |     |     |     |
 9     |     |   2 |     |     |     |     |     |     |
10     |     |   2 |     |     |     |     |     |     |
11     |     |   2 |     |     |     |     |     |     |
```

To display the partition configuration for all slots with the **-ge** option:

```
switch:admin> lscfg --show -provision -ge

Created switches FIDs(Domain IDs): 128(ds)(118) 2(bs)(1) 1(1)
Slot      1     2     3     4     5     6     7     8
    ------------------------------------------------------
Port
 0     | 128 |   2 |     |     |     |     | 128 | 128 |
 1     | 128 |   2 |     |     |     |     | 128 | 128 |
 2     | 128 |   2 |     |     |     |     | 128 | 128 |
 3     | 128 |   2 |     |     |     |     | 128 | 128 |
 4     | 128 |   2 |     |     |     |     | 128 | 128 |
 5     | 128 |   2 |     |     |     |     | 128 | 128 |
 6     | 128 |   2 |     |     |     |     | 128 | 128 |
 7     | 128 |   2 |     |     |     |     | 128 | 128 |
 8     | 128 |   2 |     |     |     |     | 128 | 128 |
 9     | 128 |   2 |     |     |     |     | 128 | 128 |
10     | 128 |   2 |     |     |     |     | 128 | 128 |
11     | 128 |   2 |     |     |     |     | 128 | 128 |
```

To change the fabric ID for a logical switch:

```
switch:admin> lscfg --change 1 -newfid 2
Changing of a switch fid requires that the switch be disabled.
Would you like to continue [y/n]?: y
```

```
Disabling switch...
All active login sessions for FID 2 have been terminated.
Checking and logging message: fid = 2.
Please enable your switch.
```

To display the change:

```
switch:admin> lscfg --show

Created switches FIDs(Domain IDs):  128(ds)(118)  1(1)  2(bs)(1)

Port   0     1     2     3     4     5     6     7     8     9
-----------------------------------------------------------------
FID    1 |   1 |   1 |   1 |   1 | 128 | 128 | 128 | 128 | 128 |

Port  10    11    12    13    14    15    16    17    18    19
-----------------------------------------------------------------
FID  128 | 128 | 128 | 128 | 128 | 128 | 128 | 128 | 128 | 128 |

Port  20    21    22    23    24    25    26    27    28    29
-----------------------------------------------------------------
FID  128 | 128 | 128 | 128 | 128 | 128 | 128 | 128 | 128 | 128 |

Port  30    31    32    33    34    35    36    37    38    39
-----------------------------------------------------------------
FID  128 | 128 | 128 | 128 | 128 | 128 | 128 | 128 | 128 | 128 |
```

To make logical switch FID 1 the base switch without confirmation:

```
switch:admin> lscfg --change 1 -base -force
Disabling the current base switch...
Disabling switch fid 1
Disabling the proposed new base switch...
Disabling switch fid 1
Please enable your switches when ready.
```

To make logical switch FID 1 the base switch with confirmation:

```
switch:admin> lscfg --change 1 -base
Creation of a base switch requires that the proposed new base switch
on this
system be disabled.

Would you like to continue [y/n]?: y
Disabling the proposed new base switch...
Disabling switch fid 1
Please enable your switches when ready.
```

To display the logical switch details with the FID name:

```
switch:admin> lscfg --show -n
-------------------------------------------------------------------
Switch Information
-------------------------------------------------------------------
FID: 30
SwitchType: DS
DomainID: 3
```

```
SwitchName: Pluto2
FabricName: thor2fab
------------------------------------------------------------------
FID: 2
SwitchType: BS
DomainID: 1
SwitchName: switch_2
FabricName: base_switch
```

To display the switch instance number of the logical switch:

```
switch:admin> lscfg --show -instance
Switch  Instance                   :   0
Created switches FIDs(Domain IDs):   128(ds)(1)
```

See Also

setContext

lsDbShow

Displays the Fabric Shortest Path First (FSPF) link state database.

Synopsis

lsdbshow [*domain*]

Description

Use this command to display an FSPF link state database record for switches in the fabric or for a specified domain.

There are two types of database entries:

- The link state database entry, which is permanently allocated.

- The link state record (LSR), which is allocated when a switch is connected to the fabric.

The LSR describes the links between connected domains in a fabric. For a link to be reported in the LSR, the neighbor for that link must be in NB_ST_FULL state.

This command displays the content of both types of database entries, if both are present, as shown below:

Domain

Domain ID described by this LSR. A (self) keyword after the domain ID indicates that LSR describes the local switch.

lsrP

Pointer to LSR.

earlyAccLSRs

Number of LSRs accepted, even though they were not sufficiently spaced apart.

ignoredLSRs

Number of LSRs not accepted because they were not sufficiently spaced apart.

lastIgnored

Last time an LSR was ignored.

installTime

Time this LSR was installed in the database, in seconds since boot.

lseFlags

Internal variable.

uOutIfsP

Internal variable.

uAllOutIfsP

Internal variable.

uPathCost

Internal variable.

uOldHopCount

Internal variable.

uHopsFromRoot

Internal variable.

uPathCount

The number of currently available paths to the remote domain.

mOutIfsP

Internal variable.

parent

Internal variable.

mPathCost

Internal variable.

mHopsFromRoot

Internal variable.

Link State Record pointer

Pointer to LSR. The same as lsrP.

lsAge

Age, in seconds, of this LSR. An LSR is removed from the database when its age exceeds 3,600 seconds.

reserved

Reserved for future use.

type

>   Type of the LSR. Always 1.

options

>   Always 0.

lsId

>   ID of this LSR. It is identical to the domain ID.

advertiser

>   Domain ID of the switch that originated this LSR.

incarn

>   Incarnation number of this LSR.

length

>   Total length, in bytes, of this LSR. Includes header and link state information for all links.

chksum

>   Checksum of total LSR, with exception of lsAge field.

linkCnt

>   Number of links in this LSR. Each link represents a neighbor in NB_ST_FULL state.

flags

>   Always 0.

LinkId

>   ID of this link. It is the domain ID of the switch on the other side of the link.

out port

>   Port number on the local switch.

rem port

>   Port number of the port on the other side of the link.

cost

>   Cost of this link. The default cost for a 1Gb/s link is 1,000.

bw

> The rounded bandwidth of the output link, in Gb/s.

type

> Always 1.

Notes

Beginning Fabric OS v7.3.0, the output displays only the lines with a bit set. If a port bitmap does not have any bits set, the output displays as "None" for the first line of the bitmap.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operand:

domain

> Specifies the domain ID of the LSR to be displayed. This operand is optional; if omitted, the entire link state database is displayed.

Examples

To display the link state record for a switch:

```
switch:admin> lsdbshow 1

Domain = 1 (self), Link State Database Entry pointer = 0x1096da60
lsrP           = 0x109784b0
earlyAccLSRs   = 0
ignoredLSRs    = 0
lastIgnored    = Never
installTime    = Aug 26 18:20:41.451
lseFlags       = 0xa
uAllOutIfsP[4] = 0x00000001
uPathCost      = 0
uOldHopCount   = 0
uHopsFromRoot  = 0
uPathCount     = 1
mOutIfsP[0]    = 0x10000000
parent         = 0xf0
mPathCost      = 0
mHopsFromRoot  = 0

Link State Record:
Link State Record pointer = 0x109784b0
lsAge          = 321
reserved       = 0
type           = 1
```

```
options          = 0x0
lsId             = 1
advertiser       = 1
incarn           = 0x80000185
length           = 60
chksum           = 0x168a
linkCnt = 2,     flags = 0x0
LinkId =  91, out port =  28, rem port =  28, cost = 500, bw = 16G,
type = 1
LinkId =  91, out port =  29, rem port =  29, cost = 500, bw = 48G,
type = 1
```

See Also

interfaceShow, nbrStateShow

mapsConfig

Sets MAPS configurations.

Synopsis

```
mapsconfig --config pause -type member_type
      -members member_list
mapsconfig --config continue -type member_type
      -members member_list
mapsconfig --actions actions_list
mapsconfig --emailcfg [-address email_address | -from from_address]
mapsconfig --testmail [-subject subject] [-message msg]
mapsconfig --import flow_name [-force]
mapsconfig --deimport flow_name [-force]
mapsconfig --purge
mapsconfig --show
mapsConfig --raslogMode [default | custom]
mapsConfig --decomcfg [impair | withdisable]
mapsconfig --help
```

Description

Use this command to perform the following Monitoring and Alerting Policy Suite (MAPS) functions:

- Pause or continue monitoring specific elements.

- Define the list of allowable actions that can be taken on the switch when a threshold is triggered.

- Configure e-mail address to which the alerts must be delivered.

- Import a flow.

- Remove the imported flow from MAPS configuration.

- Delete all user-defined MAPS configurations related to rules, groups, policies, and so on.

- Display MAPS settings.

Notes

This command requires a Fabric Vision license.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--config pause

> Stops monitoring specific elements. The active policy is still in effect.

--config continue

> Resumes monitoring specific elements on which monitoring was previously paused.

-type *member_type*

> Specifies the type of elements on which to pause monitoring. Valid types include the following:

port

> The elements are FC ports.

circuit

> The elements are FCIP circuits.

sfp

> The elements are SFP transceivers.

-members *member_list*

> Specifies the specific elements on which to pause or continue monitoring. The member list must be enclosed in double quotation marks and can consist of the following:

Port and SFP groups:

- A single port, for example, "8" or "2/8" on bladed systems.

- A port range where the beginning and end port are separated by a dash, for example, "8-13" or "2/8-13" on bladed systems.

- A set of ports and port ranges separated by commas, for example, "3,5,7-10,15" or "2/3,2/5,3/7-10,4/15" on bladed systems.

Circuit groups:

- A single circuit in VE_Port/circuit format, for example, "33/5".

- A circuit range in VE_Port/circuit format, for example, "33/1-3".

- A set of circuits separated by commas, for example, "33/1-3,33/5".

--actions *actions_list*

> Specifies a comma-separated list of all of the actions that are allowed globally on the switch. Any actions listed for a specific rule must also be listed here to take effect. Valid actions include the following:

raslog

Generates a RASLog message.

decom

Decommissions the port. Use this action along with **fence**.

fence

Fences the port, if port fencing is enabled. Port fencing takes the ports offline if the rule thresholds are exceeded. This action is valid only on conditions that are evaluated on ports.

snmp

Generates an SNMP trap.

email

Sends information about a switch event to a specified e-mail address.

sfp_marginal

Sets the state of the affected SFP transceiver to marginal. This action is valid only if the monitoring system (specified by the monitor operand in the **mapsRule** command) is one of the switch policy status monitoring systems: CURRENT, RXP, TXP, VOLTAGE, SFP_-TEMP. This action is triggered irrespective of the configuration in the global action list.

re-balance

Directs MAPS to bring the port group state back to a balanced state. After MAPS takes the rebalance action, it expects the FI to redistribute the devices among existing ports to bring back the port group into a balanced state. MAPS waits for some time before it decides to set the port group state to BALANCED or RE_BALANCE_FAILED.

sddq

Isolates the slow-drain flows to a low priority VC from the existing VC (medium or high) thus freeing up the resources for the regular flows in the existing VC. The slow drain device quarantine (SDDQ) feature is not supported in the Access Gateway mode. The port toggling (PT) action and the SDDQ action are mutually exclusive. You cannot enable SDDQ and PT actions at the same time.

fms

Notifies the configured MAPS threshold events to the FICON Management Server (FMS).

toggle

Enables port toggling to recover a port from bottleneck condition caused by the target device. Port toggle is supported only for the F_Ports. The port toggling (PT) action and

the SDDQ action are mutually exclusive. You cannot enable SDDQ and PT actions at the same time.

unquar

Releases the previously quarantined ports.

uninstall_vtap

Uninstalls vTAP feature if the mirrored frame count exceeds 250K IOPS and encryption is enabled on the 16Gb/s-capable ASIC. If encryption is not enabled on the ASIC, vTAP is not uninstalled.

none

No actions are allowed on the switch. Specifying this option allows you to turn off all notifications.

The actions SW_CRITICAL and SW_MARGINAL are always enabled and cannot be turned off.

--emailcfg

Specifies the configuration for e-mail notifications, if **email** is a triggered action. You can configure a relay host IP address using the **relayConfig** command.

-address *email_address*

Specifies the e-mail address to which the notifications are sent. User can configure up to 5 e-mail addresses as the alert message's receiver. Multiple e-mail addresses must be separated by a comma and each e-mail address can be up to a maximum length of 128 bytes. The e-mail address must conform to standard syntax: string@domain.suffix. Invalid e-mail addresses are rejected. "NONE" is the default address and a valid input parameter.

-from *from_address*

Allows the user to configure the from address. If the user has not configured the **From** email address, the old format of switch_name@domain.com is used by default. User can configure only one address for this option.

--testmail

Sends the test e-mail with the default subject and message along with the switch name in the message. The command fails if the e-mail address is not configured.

-subject *subject*

Specifies the user-defined subject line for the test e-mail. This operand is optional.

-message *msg*

Specifies the user-defined message for the test e-mail. This operand is optional.

--import

Imports a flow from Flow Vision into MAPS.

flow_name

Specifies the name of a flow to be imported. The flow name must be defined in Flow Vision. This operand is required.

-force

Imports a flow with the same name as the previously imported flow. This operand is optional. When a flow that was imported into MAPS is deleted in Flow Vision, all members of the group corresponding to that flow are automatically deleted from MAPS. If the same flow is created again, it will not automatically be reimported into MAPS, and importing this flow using the **--import** option fails unless you use the **-force** option.

--deimport

Removes a flow from MAPS. The following operand is required:

flow_name **[-force]**

Specifies the name of the flow to be removed from MAPS. The **-force** operand is optional. You cannot remove a flow that is used by any rules. The **-force** option overrides the default behavior. If a flow is present in user-defined rules, the **-force** option deletes all the rules that are configured with the given flow and then removes the flow.

--purge

Deletes all user-defined MAPS configurations on the switch (groups, rules, and policies). This command does not delete the predefined groups and policies. Enables **dflt_conservative_policy** after successful purge.

--show

Displays the MAPS global configuration settings.

--decomcfg

Configures the result of the DECOM action in MAPS to either impair the link or decommission with disable.

impair

Modifies the result of the configured DECOM action to impair the link instead of a decommission and disable (or FENCE if the process fails). After this action triggers, the port remains online with no routes unless no other shortest path links exist.

withdisable

> Modifies the result of the configured DECOM action to the default of decommissioning the port with disable (or FENCE if the process fails). Either way the port is disabled, after this action triggers.

--raslogMode default | custom

> Allows to modify the raslog mode to custom or default. In custom mode, MAPS generates different raslogs for different monitoring systems; whereas in the default mode MAPS generates generic raslogs from MAPS-1001 through MAPS-1004 for all the monitoring systems. It is recommended to use the custom mode as the default mode will be deprecated in a future Fabric OS release.
>
> This operand is not supported on the Brocade Analytics Monitoring Platform.

--help

> Displays the command usage.

Examples

> To stop monitoring on three ports:

```
switch:admin>  mapsconfig --config pause -type port
     -members "3/1,3/2,3/3"
```

> To resume monitoring on two ports:

```
switch:admin>  mapsconfig --config continue -type port
     -members "3/1,3/3"
```

> To specify that generating a RASLog and sending an e-mail message are the only allowed notification actions on this switch:

```
switch:admin>  mapsconfig --actions raslog,email
```

> To specify that MAPS will call a RE_BALANCE function to rebalance any imbalanced port groups:

```
switch:admin>  mapsconfig --actions re_balance
```

> To configure the e-mail address to which notifications are sent:

```
switch:admin>  mapsconfig --emailcfg -address admin@mycompany.com
```

> To configure the from e-mail address:

```
switch:admin>  mapsconfig --emailcfg -from admin@mycompany.com
```

> To send a test e-mail:

```
switch:admin>  mapsconfig --testmail
MAPS test welcome mail sent successfully
```

> To import a flow:

```
switch:admin>  mapsconfig --import fmFlow1
```

> To delete all of the user-defined groups, policies, and rules:

```
switch:admin> mapsconfig --purge
WARNING: This command will clear all the user-defined MAPS \
    configurations and activate the factory defined policy \
    and rules.
Do you want to continue? (yes, y, no, n): [no] yes
```

To display the global MAPS configuration:

```
switch:admin> mapsconfig --show
Configured Notifications:
RASLOG,SNMP,SW_CRITICAL,SW_MARGINAL,RE_BALANCE
Mail Recipient:              Not Configured
Mail From Address:           Not Configured
Raslog Mode:                 Default
Decom Action Config:         With Disable
Paused members :
===============
PORT :
CIRCUIT :
SFP : 2,5-6
```

See Also

logicalGroup, mapsDb, mapsPolicy, mapsRule, mapsSam, relayConfig

mapsDb

Displays or clears the dashboard showing an at-a-glance snapshot of switch health status.

Synopsis

```
mapsdb --show [all | history |
      details [-day mm/dd/yyyy | -hr hour_of_day]
      congestion [-state -top count -hr hour_of_day |
      -freq -top count]]
mapsdb --clear [all | history | summary | congestion]
mapsdb --help
```

Description

Use this command to view the summary of the events or rules triggered and the objects on which the rules were triggered over a specified period of time, and to clear the dashboard data. When used with the **--show** option, this command displays the following information:

Dashboard Information

Displays the dashboard start time, active policies, configured alerts, fenced ports, decommissioned ports, fenced circuits, quarantined ports, and the ports with highest zoned device ratio.

Switch Health Report

Displays the overall status of the switch. If the overall status is not healthy, the contributing factors and the fenced ports are listed.

Summary Report

Displays the status of the monitoring categories needed to determine the current health of the switch. The health state of each category is contributed to by a group of monitoring systems or error counters, and the rules configured in the active policy. The summary view displays the following information for each category: information collected since midnight of the current day and the historical information collected over the last 7 days.

The health state can be one of the following:

No Error

No error has occurred.

In operating range

The errors are within the thresholds configured in the active policy.

Out of operating range

The errors are above the configured thresholds and this triggers the rules configured in the active policy. This indicates that some attributes of the switch are operating out of the configured range.

Rules Affecting Health

Displays the conditions that contributed to the current switch status. The following information is displayed: number of rules triggered in a category, repeat count, triggered rules, execution time, the elements for which rules were triggered, and the triggered value.

History Data

Displays the following historical data for a specific time window: the monitoring system, the current value that triggered the rule, and the elements for which rules were triggered.

History Data for Backend ports

Displays the error statistics for the backend ports for a specific time window.

If no operands are specified, this command displays the usage.

Notes

This command requires a Fabric Vision license. Without Fabric Vision license, this command displays the summary of only the unlicensed features.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--show

Displays a summary of the data collected since midnight of the current day. The following operands are supported with the **--show** command.

all

Displays a summary and historical data of the errors for 5 rules and last 5 ports.

history

Displays the historical data only.

details

Displays detailed data in addition to the summary. The following operands are supported with the **details** command.

-day *mm/dd/yyyy*

Displays the dashboard data for a specific day.

mm

Specifies the month. Valid values are 01 through 12.

dd

Specifies the date. Valid values are 01 through 31.

yyyy

Specifies the year.

-hr *hour_of_day*

Displays the dashboard data for a specific hour of the day. The valid values for hour are 0 through 23. For example, if you specify 17, the dashboard data is displayed for the time window of 5:00 PM to 5:59 PM.

congestion

Displays congestion information of the ports sorted based on the extent of congestion. The two different types of tables namely, the congestion state table and the congestion frequency table are displayed as part of this command. The State table displays the ports sorted based on the congestion states of the ports and the Frequency table displays the ports sorted based on the number of times the port was in congestion state. The frequency value is determined by polling state of the port every second.

-state -top *count* **-hr** *hour_of_day*

Displays table of ports sorted based on the congestion states of the ports. By default, it displays data for the last one hour from the current minute and the top 10 congested ports. The **-hr** *hour_of_day* option is used for a specific hour of the day and **-top** *count* option is used to display the top count of the congested ports.

-freq -top *count*

Displays table of ports based on the congestion frequency count consolidated for an hour. The frequency table displays data for the last 10 hours. By default, it displays the top 10 congested ports based on the frequency value for the last 10 hours. Use **-top** *count* option to display the top count.

--clear

Clears the dashboard data. This command clears all database data except the History Data of the current day because it is directly displayed from hardware. The following operands are supported with the **--clear** command.

all

> Clears all dashboard data.

history

> Clears the dashboard history data.

summary

> Clears the dashboard summary data.

congestion

> Clears congestion dashboard data.

--help

> Displays the command usage.

Examples

To display the dashboard with summary information:

```
switch:admin> mapsdb --show all
1 Dashboard Information:
=======================

DB start time:            Mon Jan  5 08:36:08 2015
Active policy:            dflt_aggressive_policy
Configured Notifications:
RE_BALANCE,RASLOG,SW_CRITICAL,SW_MARGINAL,SDDQ
Fenced Ports :            None
Decommissioned Ports :    None
Fenced circuits :         38/0,38/1,38/2,38/3,38/4,38/5
Quarantined Ports :       8/0,8/4
Ports with highest Zoned device ratio: 1,2,3
Imbalanced Ports :        9/1-4, 1/0-3

2 Switch Health Report:
=======================

Current Switch Policy Status: HEALTHY

3.1 Summary Report:
===================

Category                |Today                 |Last 7 days       |
-------------------------------------------------------------------
-
Port Health             |No Errors             |In operating range |
BE Port Health          |No Errors             |No Errors          |
Fru Health              |In operating range    |In operating range |
```

```
Security Violations    |No Errors            |No Errors            |
Fabric State Changes   |No Errors            |In operating range   |
Switch Resource        |In operating range   |In operating range   |
Traffic Performance    |In operating range    |In operating range
|
Extension Health       |No Errors            |No Errors            |
Fabric Performance Impact|In operating range    |In operating range
|
Conditions contributing to health:
3.2 Rules Affecting Health:
===========================


Category(Violation Count)|RepeatCount|Rule Name  |Execution Time
|Object   |Triggered Value(Units)|
------------------------------------------------------------------------
------------------------

4 History Data:
===============

Stats(Units)        Current   01/05/15  --/--/--   --/--/--   --/--/--
                    Port(val)  Port(val)
------------------------------------------------------------------------
---
CRC(CRCs)           -         -         -          -          -
ITW(ITWs)           -         10(95)    -          -          -
LOSS_SYNC(SyncLoss) -         -         -          -          -
LF                  -         10(4)     -          -          -
LOSS_SIGNAL(LOS)    -         10(48)    -          -          -
PE(Errors)          -         -         -          -          -
STATE_CHG           -         10(48)    -          -          -
LR                  -         10(32)    -          -          -
C3TXTO(Timeouts)    -         -         -          -          -
RX(%)               -         -         -          -          -
TX(%)               -         -         -          -          -
UTIL(%)             -         -         -          -          -
BN_SECS(Seconds)    -         -         -          -          -

5 History Data for Backend ports:
=================================
Stats(Units)     Current   01/05/15  --/--/--   --/--/--   --/--/--
------------------------------------------------------------------------
----
CRC(CRCs)        -         -         -          -          -
ITW(ITWs)        -         -         -          -          -
LR               -         -         -          -          -
BAD_OS(Errors)   -         -         -          -          -
FRM_LONG(Errors) -         -         -          -          -
FRM_TRUNC(Errors) -        -         -          -          -
```

To display the dashboard with summary information on the Brocade Analytics Monitoring
Platform:

```
switch:admin> mapsdb --show all
```

```
1 Dashboard Information:
========================

DB start time:         Mon Jun 5 08:36:08 2015
Active policy:         dflt_aggressive_policy
Configured Notifications: RE_BALANCE,RASLOG
Fenced Ports :         None
Decommissioned Ports : None
Quarantined Ports :    None
Im-Balance Ports :     9/1-4, 1/0-3

2 Switch Health Report:
========================

Current Switch Policy Status: HEALTHY

3.1 Summary Report:
===================

Category                |Today                  |Last 7 days        |
-----------------------------------------------------------------------
-
IO Latency Impact       |In operating range     |In operating range |
IO Performance Impact   |Out of operating range |In operating range |
IO SCSI Health          |No Errors              |No Errors          |
AMP Health              |Out of operating range |In operating range |
Port Health             |In operating range     |No Errors          |
BE Port Health          |In operating range     |No Errors          |
Fru Health              |In operating range     |In operating range |
Security Violations     |No Errors              |No Errors          |
AMP Resource            |In operating range     |In operating range |

3.2 Rules Affecting Health:
===========================

Category(Rule Count)|RepeatCount|Rule Name                     \
------------------------------------------------------------
IO Latency Impact(1)|1          | defIOA_RCT8K_IO               \

IO Performance Impact(1)|1      | defIOA_RD_PENDING_IO_8K      \

    |Execution Time    |Object
|Triggered Value(Units)|
    -----------------------------------------------------------------
--------------------------------
    |02/23/15 22:11:57 |Flow
(sys_mon_analytics:SID=030300,DID=030000,VTAP=30300) |750 us

    |02/23/15 22:11:57 |Flow
(sys_mon_analytics:SID=030300,DID=030000,VTAP=30300) |10
(output truncated)
```

To display the dashboard with summary information and historical data for a specific day:

```
switch:admin> mapsdb --show details -day 01/06/2015
1 Dashboard Information:
========================

DB start time:          Mon Jan  5 08:36:08 2015
Active policy:          dflt_aggressive_policy
Configured Notifications:
RE_BALANCE,RASLOG,SW_CRITICAL,SW_MARGINAL,SDDQ
Fenced Ports :          None
Decommissioned Ports :  None
Fenced circuits :       38/0,38/1,38/2,38/3,38/4,38/5
Quarantined Ports :     8/0,8/4
Ports with highest Zoned device ratio: 1,2,3,4
Imbalanced Ports :      9/1-4, 1/0-3

2 Switch Health Report:
========================

Current Switch Policy Status: HEALTHY

3.1 Summary Report:
====================

Category                |Today              |Last 7 days         |
----------------------------------------------------------------------
-
Port Health             |No Errors           In operating range  |
BE Port Health          |No Errors          |No Errors           |
Extension GE Port Health|No Errors          |No Errors           |
Fru Health              |In operating range |In operating range  |
Security Violations     |No Errors          |No Errors           |
Fabric State Changes    |No Errors          |In operating range  |
Switch Resource         |In operating range |In operating range  |
Traffic Performance     |In operating range |In operating range  |
Extension Health        |No Errors          |No Errors           |
Fabric Performance Impact|In operating range |In operating range  |
Conditions contributing to health:
3.2 Rules Affecting Health:
===========================

Category(Rule Count)|RepeatCount|Rule Name  |Execution Time |Object
|Triggered Value(Units)|
----------------------------------------------------------------------
-----------------------

4 History Data:
===============

Stats(Units)       Current   01/05/15  --/--/--   --/--/--   --/--/--
                   Port(val)  Port(val)
----------------------------------------------------------------------
----
CRC(CRCs)          -         -         -         -         -
```

```
ITW(ITWs)              -          10(95)      -          -          -
LOSS_SYNC(SyncLoss) -         -          -          -          -
LF                     -          10(4)       -          -          -
LOSS_SIGNAL(LOS)      -          10(48)      -          -          -
PE(Errors)            -          -          -          -          -
STATE_CHG             -          10(48)      -          -          -
LR                    -          10(32)      -          -          -
C3TXTO(Timeouts)      -          -          -          -          -
RX(%)                 -          -          -          -          -
TX(%)                 -          -          -          -          -
UTIL(%)               -          -          -          -          -
BN_SECS(Seconds)      -          -          -          -          -

5 History Data for Backend ports:
=================================
Stats(Units)     Current   01/05/15    --/--/--    --/--/--    --/--/--
----------------------------------------------------------------------
----
CRC(CRCs)             -          -          -          -          -
ITW(ITWs)             -          -          -          -          -
LR                    -          -          -          -          -
BAD_OS(Errors)        -          -          -          -          -
FRM_LONG(Errors)      -          -          -          -          -
FRM_TRUNC(Errors)     -          -          -          -          -
```

To display the dashboard information without Fabric Vision license:

```
switch:admin> mapsdb --show
1 Dashboard Information:
========================

DB start time:          Wed Oct  1 06:04:33 2014
Active policy:          dflt_base_policy
Configured Notifications: SW_CRITICAL,SW_MARGINAL

2 Switch Health Report:
========================

Current Switch Policy Status: MARGINAL
Contributing Factors:
---------------------
*FAULTY_BLADE (MARGINAL).
*HA_SYNC (MARGINAL).

3.1 Summary Report:
===================

Category         |Today                 Last 7 days   |
------------------------------------------------------------
Fru Health       |Out of operating range |No Errors     |
Switch Resource  |No Errors              |No Errors     |

3.2 Rules Affecting Health:
===========================
```

```
Category(Rule Count)|RepeatCount|Rule Name                        \
--------------------------------------------------------- \
Fru Health(1)        |1          |defALL_SLOTSBLADE_STATE_IN \

   |Execution Time    |Object   |Triggered Value(Units)|
   --------------------------------------------------
   |10/01/14 06:09:42|Blade 8 |IN                    |

MAPS is not Licensed. MAPS extended features are available ONLY with
License
```

To display details of the congested port based on the congestion state:

```
switch:admin> mapsdb --show congestion -state -hr 20 -top 5
------------------------------------------
DB start time:  Thu Sep  7 20:45:05 2017
------------------------------------------
                                 |       Frequency details for hour
20:00:00        |
Port      |Current Min State  |Frame Loss |Perf Impact |Medium |Low
|Info    |
----------------------------------------------------------------------
---------------
E-Port 5/9  |No Congestion     |0          |0           |0      |0
|5       |
E-Port 5/40 |Info St           |0          |0           |0      |0
|7       |
E-Port 5/44 |No Congestion     |0          |0           |0      |0
|2       |
E-Port 10/16|No Congestion     |0          |0           |0      |0
|2       |
E-Port 11/38|No Congestion     |0          |0           |0      |0
|1       |
```

To display details of the congested port based on the congestion frequency for the last 10 hours:

```
switch:admin> mapsdb --show congestion -freq -top 5
------------------------------------------
DB start time:  Thu Sep  7 20:45:05 2017
------------------------------------------

23:00:00        |22:00:00        |21:00:00        |20:00:00
|19:00:00        |18:00:00        |17:00:00        |16:00:00
|15:00:00        |14:00:00        |
----------------------------------------------------------------------
----------------------------------------------------------------------
-------------------------------------------
             |E-Port 11/38,(357|E-Port 5/40,(47) |E-Port 5/9,(18)
|F-Port 12/21,(15)|F-Port 12/23,(3) |               |
|                |
```

```
            |9)            |            |            |
|            |            |            |            |
|
            |E-Port 5/44,(3576|E-Port 11/38,(27)|E-Port 5/40,(9)
|F-Port 12/23,(12)|F-Port 12/21,(3) |            |            |
|            |
            |)            |            |            |
|            |            |            |            |
|
            |E-Port 5/40,(3575|E-Port 5/44,(26) |E-Port 5/44,(6)
|            |            |            |            |
|            |
            |)            |            |            |
|            |            |            |            |
|
            |            |            |E-Port 10/16,(4)
|            |            |            |            |
|            |
            |            |            |E-Port 11/38,(3)
|            |            |            |
```

To clear the history data:

```
switch:admin> mapsdb --clear history
```

To clear congestion dashboard data:

```
switch:admin> mapsdb --clear congestion
WARNING: This command will clear congestion data
Do you want to continue? (yes, y, no, n): [no]y
```

See Also

logicalGroup, mapsConfig, mapsPolicy, mapsRule, mapsSam, portStatsClear

mapsHelp

Displays MAPS command information.

Synopsis

```
mapshelp
```

Description

Use this command to display a listing of Monitoring and Alerting Policy Suite (MAPS) commands with short descriptions for each command. MAPS commands require a Fabric Vision license.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To display MAPS command help information:

```
switch:admin> mapshelp
mapsRule         Use this command to create threshold monitoring rules
mapsPolicy        Manage policies using this command
logicalGroup      Create and manage user-defined logical groups
mapsdb           Display MAPS Dashboard to see the summary of the  \
                    violations triggered due to current active policy.
mapsConfig      MAPS configuration command eg: use this to enable MAPS
relayConfig     Configure e-mail server information to receive email \
                    notifications
mapssam          Show availability monitor information
mapsHelp         Display all the MAPS commands
```

See Also

None

mapsPolicy

Creates and manages MAPS policies.

Synopsis

```
mapspolicy --create policy_name
mapspolicy --addrule policy_name -rulename rule_name
mapspolicy --delrule policy_name -rulename rule_name
mapspolicy --enable policy_name
mapspolicy --clone existing_policy_name -name new_policy_name
mapspolicy --delete policy_name
mapspolicy --show policy_name | -summary | -all [-concise]
mapspolicy --help
```

Description

Use this command to create and manage monitoring policies. A MAPS policy is a set of rules that define thresholds for measures and actions to take when a threshold is triggered. When you enable a policy, all of the rules in the policy are in effect. A switch can have multiple policies.

Notes

This command requires a Fabric Vision license.

Any change to a policy affects only the information stored on the switch. Consequentially, if an active policy is modified, it has to be re-enabled for the modifications to be effective.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--create

Creates a monitoring policy.

policy_name

Specifies the name of the policy to be created. The name for the policy must be unique; it is case-sensitive and can contain up to 31 characters.

--addrule *policy_name*

Adds a rule to the specified user-defined policy. You cannot add a rule to the preconfigured policies.

-rulename *rule_name*

Specifies the name of the rule to be added to the policy.

--delrule *policy_name*

> Deletes a rule from the specified user-defined policy. You cannot delete a rule from the preconfigured policies.

-rulename *rule_name*

> Specifies the name of the rule to be deleted from the policy.

--enable

> Activates a policy on the switch. The dashboard data will be cleared after the policy is activated.

policy_name

> Specifies the name of the policy to be enabled. The name can be a predefined or a user-defined policy. If another policy is already enabled, that policy is disabled and the specified policy is enabled instead. The predefined policies are as follows:

dflt_conservative_policy

> Contains rules with more lenient thresholds that allow a buffer and do not immediately trigger actions. Use this policy in environments where the elements are resilient and can accommodate errors.

dflt_aggressive_policy

> Contains rules with very strict thresholds. Use this policy if you need a pristine fabric (for example, FICON fabrics).

dflt_moderate_policy

> Contains rules with thresholds values between the aggressive and conservative policies.

dflt_base_policy

> Contains rules based on the features which can be monitored without a license.

--clone

> Creates a replica of an existing predefined or user-defined policy. The new policy has all of the rules of the existing policy. You can further modify the newly created policy. The following operands are required:

existing_policy_name

> Specifies the name of an existing policy. The policy can be a predefined policy or a user-defined policy.

-name *new_policy_name*

> Specifies the name of the policy to be created.

--delete

Deletes a user-defined policy.

policy_name

Specifies the name of the user-defined policy to be deleted. You cannot delete the predefined policies.

--show

Displays the rules in a policy.

policy_name

Specifies the name of the policy to display. The name can be a predefined or a user-defined policy.

-summary

Displays all existing policies and the number of rules present in them.

-all

Displays the rules in all of the policies.

-concise

Displays legends instead of the complete action names in the output. The legends for the action names are as follows: RS (RASLOG), PF (FENCE), EML (EMAIL), SN (SNMP), PT (TOGGLE), PD (DECOM), FMS (FMS), SDDQ (SDDQ), SWD (SW_CRITICAL), SWM (SW_MARGINAL), and SFPM (SFP_MARGINAL). This operand is optional.

--help

Displays the command usage.

Examples

To create a policy named "aggressive_policy":

```
switch:admin>   mapspolicy --create aggressive_policy
```

To add a rule to a policy:

```
switch:admin>   mapspolicy --addrule aggressive_policy \
     -rulename CRIT_PORT_CRC_GE_2
```

To delete a rule from a policy:

```
switch:admin>   mapspolicy --delrule aggressive_policy \
     -rulename CRIT_PORT_CRC_GE_2
```

To clone a policy:

```
switch:admin>   mapspolicy --clone dflt_conservative_policy \
```

```
                       -name my_conservative_policy
```

To delete a policy:

```
switch:admin>  mapspolicy --delete my_conservative_policy
```

To display a policy:

```
switch:admin>  mapspolicy --show Policy1
Policy Names   Rule Names   Action   Condition
--------------------------------------------------------
Policy1          Rule1        RASLOG   Switch(SEC_IDB/Min>0)
                 Rule2        RASLOG   Switch(SEC_IDB/Min>1)
Active Policy: Policy2
```

To display a summary of policies:

```
switch:admin>  mapspolicy --show -summary
Policy Names     Number of Rules
-------------------------------
Policy1     :        125
Policy2     :        130
Policy3     :        135
Policy4     :        150
Active Policy: Policy2
```

To enable a policy:

```
switch:admin>  mapspolicy --enable aggressive_policy
```

To display the details of a policy:

```
switch:admin>  mapspolicy --show dflt_base_policy -concise
Policy Name: dflt_base_policy

Rule Name                      |Condition
|Actions        |
---------------------------------------------------------------------
----------------------------
defALL_TSTEMP_OUT_OF_RANGE     |ALL_TS(TEMP/NONE==OUT_OF_RANGE)
|RS,SN,EML      |
defCHASSISFLASH_USAGE_90       |CHASSIS(FLASH_USAGE/NONE>=90)
|RS,SN,EML      |
defCHASSISMEMORY_USAGE_75      |CHASSIS(MEMORY_USAGE/NONE>=75)
|RS,SN,EML      |
defCHASSISCPU_80               |CHASSIS(CPU/NONE>=80)
|RS,SN,EML      |
defCHASSISBAD_TEMP_MARG        |CHASSIS(BAD_TEMP/NONE>=1)
|SWM,SN,EML     |
defCHASSISBAD_TEMP_CRIT        |CHASSIS(BAD_TEMP/NONE>=2)
|SWD,SN,EML     |
defCHASSISBAD_PWR_CRIT         |CHASSIS(BAD_PWR/NONE>=2)
|SWD,SN,EML     |
defCHASSISBAD_FAN_MARG         |CHASSIS(BAD_FAN/NONE>=1)
|SWM,SN,EML     |
defCHASSISBAD_FAN_CRIT         |CHASSIS(BAD_FAN/NONE>=2)
|SWD,SN,EML     |
```

```
defALL_PSPS_STATE_FAULTY          |ALL_PS(PS_STATE/NONE==FAULTY)
|RS,SN,EML      |
defALL_PSPS_STATE_ON              |ALL_PS(PS_STATE/NONE==ON)
|RS,SN,EML      |
defALL_PSPS_STATE_OUT             |ALL_PS(PS_STATE/NONE==OUT)
|RS,SN,EML      |
defALL_FANFAN_STATE_FAULTY        |ALL_FAN(FAN_STATE/NONE==FAULTY)
|RS,SN,EML      |
defALL_FANFAN_STATE_ON            |ALL_FAN(FAN_STATE/NONE==ON)
|RS,SN,EML      |
defALL_FANFAN_STATE_OUT           |ALL_FAN(FAN_STATE/NONE==OUT)
|RS,SN,EML      |
*defALL_PORTSSFP_STATE_FAULTY    |ALL_PORTS(SFP_STATE/NONE==FAULTY)
|RS,SN,EML      |
*defALL_PORTSSFP_STATE_OUT       |ALL_PORTS(SFP_STATE/NONE==OUT)
|RS,SN,EML      |
*defALL_PORTSSFP_STATE_IN        |ALL_PORTS(SFP_STATE/NONE==IN)
|RS,SN,EML      |
defCHASSISETH_MGMT_PORT_STATE_DOWN   |CHASSIS(ETH_MGMT_PORT_STATE/
NONE==DOWN)     |RS,SN,EML      |
defCHASSISETH_MGMT_PORT_STATE_UP     |CHASSIS(ETH_MGMT_PORT_STATE/
NONE==UP)       |RS,SN,EML      |

Active Policy is 'dflt_base_policy'.
Unmonitored Rules are prefixed with "*"

Legends:
RS: RASLOG SN: SNMP EML: EMAIL PF: FENCE PL: PORTLOG PD: DECOM FMS: FMS
PT: TOGGLE SDDQ: SDDQ SWD: SW_CRITICAL
```

See Also

logicalGroup, mapsConfig, mapsDb, mapsRule, mapsSam

mapsRule

Creates and manages monitoring rules.

Synopsis

```
mapsrule --create rule_name rule_parameters [-policy policy_name]
mapsrule --createRoR rule_name rule_parameters [-group group_name]
     [-policy policy_name]
mapsrule --config rule_name rule_parameters
mapsrule --clone existing_rule_name -rulename new_rule_name
     rule_parameters [-policy policy_name]
mapsrule --cloneByGroup existing_group -frompolicy policy_name
      -newpolicy new_policy_name -newgroup group [-tag rule_tag]
mapsrule --delete rule_name [-force]
mapsrule --show rule_name | -all [-concise]
mapsrule --help
```

Description

Use this command to configure and manage MAPS monitoring rules and to display the configured rules. A rule associates a condition with actions that must be triggered when the specified condition is evaluated to be true. When you modify a rule, the rule does not take effect until you enable the policy. If the rule is part of the enabled policy, you must re-enable the policy for the rule to take effect.

For a monitoring rule created with an imported flow group, MAPS monitors the paused members.

Notes

The port fence and port decommission actions are not supported on an E_Port for a C3TXTO monitoring system.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--create

Creates a monitoring rule and adds it to a specified policy.

--createRoR

Creates a Rule-on-Rule (RoR) to monitor a user-defined base rule. The following restrictions apply when you create an ROR:

- To create an ROR, the base rule must be present.

- To add an ROR to a given policy, the base rule must be present and added to that policy.

- You can define an ROR with any time base greater than the time base of the base rule. The time base 'none' is not supported.

- You cannot create an ROR based on another ROR.

- You can create up to 50 RORs per logical switch.

- Maximum 72 characters are allowed to create a ROR rule name.

--config

Modifies the specified monitoring rule. You cannot modify a default rule.

--clone

Creates a replica of an existing rule. Specify only the rule parameters that you want to modify. If no operand is specified, an exact copy is created. The following operands are required:

existing_rule_name

Specifies the name of the exiting rule to be copied.

-rulename *new_rule_name*

Specifies the name of the new rule. The name for the new rule must be unique; it is case-sensitive and can contain up to 72 characters.

--cloneByGroup

Clones all the rules associated with the specified group and adds the rules to a new policy. The following operands are required:

existing_group

Specifies the name of an existing group to be copied.

-frompolicy *policy_name*

Specifies the name of an existing policy containing the rules to be copied.

-newpolicy *new_policy_name*

Specifies the name of a new policy to which you want to add the rules.

-newgroup *group*

Specifies the name of a new group. The name for the new group must be unique.

-tag *rule_tag*

Specifies the tag to add to the name of cloned rules. If the tag is not specified, all the cloned rule names are prefixed with the default tag name "clone_".

--delete *rule_name* **[-force]**

Deletes a user-defined monitoring rule. The **-force** option provides the capability to override the default behavior and this option fails if you try to delete a default rule.

--show

Displays the condition, actions, and the associated policies for the given rule or all rules. Specify **-all** to display all rules configured on the switch.

-concise

Displays legends instead of the complete action names in the output. The legends for the action names are as follows: RS (RASLOG), PF (FENCE), EM (EMAIL), SN (SNMP), PT (TOGGLE), PD (DECOM), FM (FMS), SQ (SDDQ), SC (SW_CRITICAL), SM (SW_MARGINAL), and SFPM (SFP_MARGINAL). This operand is optional.

rule_name

Specifies the name of the rule to be configured. The name for the rule must be unique; it is case-sensitive and can contain up to 72 characters.

rule_parameters
-group *group_name*

Specifies a pre-defined or user-defined group containing the elements on which the specified condition is to be evaluated.

-monitor *ms_name*

Specifies the monitoring system (MS). Refer to the description of the *ms_name* option for the list of supported monitoring systems.

-timebase *time_base*

Specifies the time interval between two samples to be compared. Valid time base values include the following:

min

Samples are compared every minute.

hour

Samples are compared once an hour.

day

> Samples are compared once a day.

none

> Time base is not applicable.

-op *comparison_operator*

> Specifies the relational operation to be used in evaluating the condition. Valid operators include the following:

l

> Less than

le

> Less than or equal to

g

> Greater than

ge

> Greater than or equal to

eq

> Equal to

-value *value*

> Specifies the threshold value. Valid values include the following:

> - For numerical values: 0-999999999. The upper limit may vary depending on the monitoring system category.
>
> - For percentage values: 0-100.
>
> - For FRU states: **ON**, **OFF**, **IN**, **OUT**, or **FAULTY**.
>
> - For temperature monitoring: **IN_RANGE** or **OUT_OF_RANGE**.
>
> - For FPI states: **IO_FRAME_LOSS**, **IO_PERF_IMPACT**, **IO_LATENCY_CLEAR**.
>
> - For Ethernet port state: **UP** or **DOWN**

-action *action*

> Specifies a comma-separated list of actions to be taken if the specified condition is evaluated to be true. The action is not taken unless it is also specified globally, using the **mapsconfig --actions** command. Valid actions include the following:

raslog

Generates a RASLog message.

decom

Decommissions the port. Use this action along with **fence**.

fence

Fences the port, if port fencing is enabled. Port fencing takes the ports offline if the user-defined thresholds are exceeded. This action is valid only on conditions that are evaluated on ports.

snmp

Generates an SNMP trap.

email

Sends information about a switch event to a specified e-mail address.

sw_critical

Sets the state of the affected switch to critical. This action is valid only if the **monitor** operand is one of the switch policy status monitoring systems.

sw_marginal

Sets the state of the affected switch to marginal. This action is valid only if the **monitor** operand is one of the switch policy status monitoring systems.

sfp_marginal

Sets the state of the affected SFP transceiver to marginal. This action is valid only if the **monitor** operand is one of the switch policy status monitoring systems.

sddq

Isolates the slow-drain flows to a low priority VC from the existing VC (medium or high) thus freeing up the resources for the regular flows in the existing VC. The slow drain device quarantine (SDDQ) feature is not supported in the Access Gateway mode. The port toggling (PT) action and the SDDQ action are mutually exclusive. When using the **mapsConfig** command, you cannot enable SDDQ and PT actions at the same time.

fms

Notifies the configured MAPS threshold events to the FICON Management Server (FMS).

toggle

Enables port toggling to recover a port from bottleneck condition caused by the target device. Port toggle is supported only for the F_Ports. The port toggling (PT) action and the SDDQ action are mutually exclusive. When using the **mapsConfig** command, you cannot enable SDDQ and PT actions at the same time.

unquar

Releases the previously quarantined ports.

uninstall_vtap

Uninstalls vTAP if the mirrored frame count exceeds 250K IOPS and encryption is enabled in the 16Gb/s-capable ASIC. If encryption is not enabled in the ASIC, vTAP is not uninstalled.

none

No actions are allowed on the switch. Specifying this option allows you to turn off all notifications.

The actions SW_CRITICAL and SW_MARGINAL are always enabled and cannot be turned off.

-tt *timeout*

Specifies the time window in seconds over which the port is disabled and re-enabled by MAPS to recover from bottleneck condition. The valid range is from 2 to 3600 seconds. This parameter is valid with only the **toggle** alert option.

-qt *quiet_time* **[-unit min | hour | day]**

Specifies the time interval, in units of minutes, hours, or days, between consecutive alerts. This parameter is valid with only the **raslog** and **email** alert options.

-qtclear

Clears the configured quiet time for the RASLog and e-mail alerts.

-uqrt *unquarantine_time* **[-uqrt_unit min | hour | day]**

Specifies the time, in units of hours or days, after which the previously quarantined ports are automatically released. This parameter is valid with only the **unquar** alert option.

-uqrt_clear

Clears the configured un-quarantine timeout value. This parameter is valid with only the **unquar** alert option.

-severity

Specifies the severity level. Valid values include **info**, **warning**, **error**, **critical**, and **default**.

-policy *policyname*

Specifies the user-defined policy. You cannot add a rule to a predefined policy.

ms_name

Specifies the monitoring system. Valid monitoring systems for each category include the following:

Port health

Monitors port statistics. Valid values for the port health category include the following:

CRC

Cyclic redundancy check errors

ITW

Invalid transmit words

LOSS_SYNC

Loss of synchronization

LF

Link failure

LOSS_SIGNAL

Loss of signal

PE

Protocol errors

LR

Link reset

C3TXTO

Class 3 timeouts

STATE_CHG

State changes

CURRENT

SFP current

RXP

> SFP receive power

TXP

> SFP transmit power

VOLTAGE

> SFP voltage

SFP_TEMP

> SFP temperature

PWR_HRS

> SFP power on hours

DEV_NPIV_LOGINS

> NPIV device logins

ENCR_BLK

> Encryption Block errors

ENCR_DISC

> Frames dropped due to parity error

ENCR_SHRT_FRM

> Encryption short frames

PID

> Port Id.

Backend Port Health

> Monitors backend port statistics. Valid values for the port health category include the following:

CRC

> Cyclic redundancy check errors

ITW

> Invalid transmit words

LR

> Link reset

BAD_OS

> Invalid ordered set

FRAME_TRUNC

> The frame is too short (less than 36 bytes).

FRAME_LONG

> The frame is longer than expected (greater than 2148 bytes).

Extension GE Port Health

> Monitors backend port statistics. Valid values for the port health category include the following:

GE_CRC

> Cyclic redundancy check errors

GE_INV_LEN

> Invalid length

GE_LOS_OF_SIG

> Loss of signal

FRU health

> Monitors the field-replaceable units, including ports, power supplies, and flash memory. Valid values for the FRU health category include the following:

PS_STATE

> Power supply state has changed

FAN_STATE

> Fan state has changed

BLADE_STATE

> Blade state has changed

SFP_STATE

> SFP state has changed

WWN

> WWN card state has changed

Extension Health

> Monitors the FCIP circuit. Valid values for the category include the following:

CIR_STATE

> Circuit state changes

CIR_UTIL

> Percentage of circuit utilization

CIR_PKTLOSS

> Percentage of circuit packet loss

RTT

> Circuit round trip time in milliseconds

JITTER

> Percentage of variance in RTT for circuits

STATE_CHG

> Tunnel state changes

UTIL

> Percentage of utilization

PKTLOSS

> Percentage of Tunnel Qos utilization

IP_UTIL

> Circuit IP utilization

IP_PKTLOSS

> Circuit IP packet loss

IP_RTT

> Circuit IP round-trip time in milliseconds

IP_JITTER

Circuit IP connection variance

IP_EXTENSION_FLOW

Monitors DP objects for the number of IP Extension TCP flows

Fabric performance impact

Monitors the fabric performance. Valid values for the Fabric performance impact category include the following:

DEV_LATENCY_IMPACT

Fabric Performance Impact

BE_LATENCY_IMPACT

Latency impact

RX

Receive bandwidth usage %

TX

Transmit bandwidth usage %

UTIL

Trunk utilization

IT_FLOW

IT flow ration

DEV_LOGIN_DIST

MAPS monitors the number of devices logged in on individual ports in the group. This monitors port group state and can have the following values:

BALANCE

Specifies that no ports in the group can have a difference of more than one (1) in the port group. The re-balance operation selectively moves some of the device logins from heavily loaded ports to lightly loaded ports in an effort to balance the logins across the port group.

IMBALANCE

MAPS monitors the number of devices logged in on individual ports in the group; no two ports can have more than one device login difference. If two ports in a port group have a

difference of more than one device login, it sets the port group state into imbalance which leads to an alert to the administrator by default.

BALANCE_FAILED

MAPS performed the RE_BALANCE action but failed to rebalance the port group.

Security health

Monitors security violations on the switch. Valid values for the security health category include the following:

SEC_DCC

DCC violations

SEC_HTTP

HTTP violations

SEC_CMD

Illegal command

SEC_IDB

Incompatible security database

SEC_LV

Login violations

SEC_CERT

Invalid certifications

SEC_FCS

No FCS

SEC_SCC

SCC violations

SEC_AUTH_FAIL

Authentication failure

SEC_TELNET

Telnet violations

SEC_TS

>   Time Server (TS) out of sync

DAYS_TO_EXPIRE

>   Days to expire

EXPIRED_CERTS

>   Expired certificates

Fabric state change

>   Monitors fabric state changes, including zone changes, fabric segmentation, E_Port down, fabric reconfiguration, domain ID changes, and fabric logins. Valid values for the fabric state change category include the following:

DID_CHG

>   Domain ID change

FLOGI

>   Fabric logins

FAB_CFG

>   Fabric reconfigurations

EPORT_DOWN

>   E_Ports down

FAB_SEG

>   Fabric segmentation

ZONE_CHG

>   Zone changes

L2_DEVCNT_PER

>   Layer 2 device count

LSAN_DEVCNT_PER

>   LSAN Device Count

ZONE_CFGSZ_PER

>   Zone configuration size

BB_FCR_CNT

> FCR count

Switch status policy

> Monitors the health of the switch. Valid values for the switch policy change category include the following:

BAD_PWR

> Absent or faulty power supply

BAD_TEMP

> Temperature sensors outside range

BAD_FAN

> Absent or faulty fans

FLASH_USAGE

> Flash usage

MARG_PORTS

> Percentage of marginal ports

FAULTY_PORTS

> Percentage of faulty ports

MISSING_SFP

> Percentage of missing SFP transceivers

ERR_PORTS

> Percentage of error ports

WWN_DOWN

> World Wide Name card down

DOWN_CORE

> Core blade monitoring

FAULTY_BLADE

> Faulty blades

HA_SYNC

High Availability monitoring

FAN_AIRFLOW_MISMATCH

Monitors the air flow direction of the power supply fan FRUs and blower FRUs and generates an alert if there is a mismatch in the air flow direction of any two power supply fans or any two blowers. The mismatch event Is followed by a match event, when the air flow direction in all the fans and blowers is back to normal.

Switch resource

Monitors system RAM, flash, memory, and CPU. Valid values for the switch resource category include the following:

TEMP

Temperature sensor

ETH_MGMT_PORT_STATE

Ethernet management port state

FLASH_USAGE

Flash usage

VTAP_IOPS

Traffic IOPS per ASIC chip

CPU

CPU utilization

MEMORY_USAGE

Memory usage

Traffic performance

Monitors traffic load and flow on an FC Port. Valid values for the traffic performance category include the following:

TX_FCNT

Transmit frame count

RX_FCNT

Receive frame count

TX_THPUT

Transmit throughput

RX_THPUT

Receive throughput

IO_RD

IO read command count

IO_WR

IO write command count

IO_RD_BYTES

IO read data

IO_WR_BYTES

IO write data

RD_STATUS_TIME_LT_8K

Read Completion Time (RCT) for lesser than 8k size IOs

RD_STATUS_TIME_8_64K

RCT for 8k to less than 64k size IOs

RD_STATUS_TIME_64_512K

RCT for 64k to less than 512k size IOs

RD_STATUS_TIME_GE_512K

RCT for greater than or equal to 512k size IOs

WR_STATUS_TIME_LT_8K

Write completion time (WCT) for lesser than 8k flows

WR_STATUS_TIME_8_64K

WCT for 8k to less than 64k flows

WR_STATUS_TIME_64_512K

WCT for 64k to less than 512k flows

WR_STATUS_TIME_GE_512K

WCT for greater than or equal to 512k size IOs

RD_1stDATA_TIME_LT_8K

Read first response time for lesser than 8k size IOs

RD_1stDATA_TIME_8_64K

Read first response time for 8k to less than 64k size IOs

RD_1stDATA_TIME_64_512K

Read first response time for 64k to less than 512k size IOs

RD_1stDATA_TIME_GE_512K

Read first response time for greater than or equal to 512k size IOs

WR_1stXFER_RDY_LT_8K

Write first response time for lesser than 8k size IOs

WR_1stXFER_RDY_8_64K

Write first response time for 8k to less than 64k size IOs

WR_1stXFER_RDY_64_512K

Write first response time for 64k to less than 512k size IOs

WR_1stXFER_RDY_GE_512K

Write first response time for greater than or equal to 512k size IOs

RD_PENDING_IO_LT_8K

Read pending IOs for lesser than 8k size flows

RD_PENDING_IO_8_64K

Read pending IOs for 8k to 64k size flows

RD_PENDING_IO_64_512K

Read pending IOs for 64k to 512k size flows

RD_PENDING_IO_GE_512K

Read pending IOs for greater than or equal to 512k size flows

WR_PENDING_IO_LT_8K

> Write pending IOs for lesser than 8k size flows

WR_PENDING_IO_8_64K

> Write pending IOs for 8k to 64k size flows

WR_PENDING_IO_64_512K

> Write pending IOs for 64k to 512k size flows

WR_PENDING_IO_GE_512K

> Write pending IOs for greater than or equal to 512k size flows

RD_IO_RATE_LT_8K

> Read IO rate less than 8k size flows

RD_IO_RATE_8_64K

> Read IO rate for 8k to 64k size flows

RD_IO_RATE_64_512K

> Read IO rate for 64 to 512k size flows

RD_IO_RATE_GE_512K

> Read IO rate for greater than or equal to 512k size flows

WR_IO_RATE_LT_8K

> Write IO rate less than 8k size flows

WR_IO_RATE_8_64K

> Write IO rate for 8k to 64k size flows

WR_IO_RATE_64_512K

> Write IO rate for 64k to 512k size flows

WR_IO_RATE_GE_512K

> Write IO rate for greater than or equal to 512k size flows

RD_IOPS_LT_8K

> Read IOPS for less than 8k size flows

RD_IOPS_8_64K

> Read IOPS for 8k to 64k size flows

RD_IOPS_64_512K

> Read IOPS for 64k to 512k size flows

RD_IOPS_GE_512K

> Read IOPS for greater than or equal to 512k size flows

WR_IOPS_LT_8K

> Write IOPS for less than 8k size flows

WR_IOPS_8_64K

> Write IOPS for 8k to 64k size flows

WR_IOPS_64_512K

> Write IOPS for 64k to 512k size flows

WR_IOPS_GE_512K

> Write IOPS for greater than or equal to 512k size flows

--help

> Displays the command usage.

Examples

To create a rule for monitoring the number of CRC errors every hour on critical ports and generating a RASlog if the number of CRC errors is greater than 10:

```
switch:admin>  mapsrule --create check_crc -monitor crc \
     -group CRITICAL_PORTS -timebase hour -op g -value 10 \
     -action raslog
```

To create an ROR rule:

```
switch:admin> mapspolicy --create test_policy1

switch:admin> mapsrule --create test_CRC_min -group ALL_PORTS -monitor CRC \
     -timebase min -op g -value 12 -action raslog,snmp,email -policy test_pol-
icy1

switch:admin> mapsrule --createRoR test_ror_CRC_min -group test_ports_1 -
monitor test_CRC_min \
     -timebase hour -op g -value 5 -action raslog,snmp,email,fence -policy
test_policy1
```

```
switch:admin> mapspolicy -show test_policy1
Policy Name: test_policy1

Rule Name        |Condition                         |Actions                 |
----------------------------------------------------------------------
--------------
test_CRC_min     |ALL_PORTS(CRC/min>12)             |raslog, snmp,
email          |
test_ror_CRC_min |test_ports_1(test_CRC_min/hour>5) |raslog, snmp,
email, fence |

Active Policy is 'test_policy1'
```

To modify a rule to change the action to generate a RASlog message and fence the port:

```
switch:admin>  mapsrule --config check_crc -monitor crc \
     -group CRITICAL_PORTS -timebase hour -op g -value 10 \
     -action raslog,fence
```

To delete a rule:

```
switch:admin>  mapsrule --delete New_Cntr_High
```

To clone a rule with a modified timebase:

```
switch:admin>  mapsrule --clone Rule1 -rulename NewRule2
     -timebase Hour
```

To clone all rules associated with a group:

```
switch:admin> mapsrule --cloneByGroup ALL_E_PORTS -newgroup admin_CB-
G_E_PORTS \
     -frompolicy dflt_aggressive_policy -newpolicy admin_CBG -tag cl
```

To display a single rule:

```
switch:admin>  mapsrule --show defRuleITWAboveHighPF
Rule Data:
----------
RuleName: defRuleITWAboveHighPF
Actions: Raslog
Condition: ALL_PORTS(ITW/MIN>25)
Policies Associated: none
```

To display all of the rules configured on a switch:

```
switch:admin>  mapsrule --show -all
Rule Name               |Condition
|Actions               |
----------------------------------------------------------------------
---------------------------------------------------
defNON_E_F_PORTSCRC_0       |NON_E_F_PORTS(CRC/MIN>0)
|RASLOG,SNMP,EMAIL          |
defNON_E_F_PORTSCRC_2       |NON_E_F_PORTS(CRC/MIN>2)
|FENCE,SNMP,EMAIL           |
defNON_E_F_PORTSCRC_10      |NON_E_F_PORTS(CRC/MIN>10)
|RASLOG,SNMP,EMAIL          |
defNON_E_F_PORTSCRC_20      |NON_E_F_PORTS(CRC/MIN>20)
|FENCE,SNMP,EMAIL           |
```

```
defNON_E_F_PORTSCRC_21      |NON_E_F_PORTS(CRC/MIN>21)
|RASLOG,SNMP,EMAIL           |
defALL_10GSWL_SFPVOLTAGE_3600 |ALL_10GSWL_SFP(VOLTAGE/NONE>=3600)
|SFP_MARGINAL,RASLOG,SNMP,EM|
                            |                              |AIL
|
defALL_10GSWL_SFPRXP_1999   |ALL_10GSWL_SFP(RXP/NONE>=1999)
|SFP_MARGINAL,RASLOG,SNMP,EM|
                            |                              |AIL
|
defALL_PORTS_IO_PERF_IMPACT    |ALL_PORTS(DEV_LATENCY_IMPACT/
NONE==IO_PERF_IMPACT)|RASLOG,SNMP,EMAIL,SDDQ,TOGG|
                            |                              |LE
tt=2                        |
defALL_PORTS_IO_FRAME_LOSS     |ALL_PORTS(DEV_LATENCY_IMPACT/
NONE==IO_FRAME_LOSS) |RASLOG,SNMP,EMAIL,SDDQ,TOGG|
                            |                              |LE
tt=2                        |
defALL_PORTS_IO_LATENCY_CLEAR  |ALL_PORTS(DEV_LATENCY_IMPACT/
NONE==IO_LATENCY_CLEA|RASLOG,SNMP,EMAIL            |
```

To display all of the rules configured on a switch with legends for action names:

```
switch:admin> mapsrule --show -all -concise
Rule Name                 |Condition
|Actions                  |
-----------------------------------------------------------------------
-------------------------------------------
defNON_E_F_PORTSCRC_0      |NON_E_F_PORTS(CRC/MIN>0)
|RS,SN,EM                  |
defNON_E_F_PORTSCRC_2      |NON_E_F_PORTS(CRC/MIN>2)
|PF,SN,EM                  |
defNON_E_F_PORTSCRC_10     |NON_E_F_PORTS(CRC/MIN>10)
|RS,SN,EM                  |
defNON_E_F_PORTSCRC_20     |NON_E_F_PORTS(CRC/MIN>20)
|PF,SN,EM                  |
defNON_E_F_PORTSCRC_21     |NON_E_F_PORTS(CRC/MIN>21)
|RS,SN,EM                  |
defALL_10GSWL_SFPVOLTAGE_3600 |ALL_10GSWL_SFP(VOLTAGE/NONE>=3600)
|SFPM,RS,SN,EM             |
defALL_10GSWL_SFPRXP_1999  |ALL_10GSWL_SFP(RXP/NONE>=1999)
|SFPM,RS,SN,EM             |
defALL_PORTS_IO_PERF_IMPACT    |ALL_PORTS(DEV_LATENCY_IMPACT/
NONE==IO_PERF_IMPACT) |RS,SN,EM,SQ,PT tt=2      |
defALL_PORTS_IO_FRAME_LOSS     |ALL_PORTS(DEV_LATENCY_IMPACT/
NONE==IO_FRAME_LOSS)  |RS,SN,EM,SQ,PT tt=2      |
defALL_PORTS_IO_LATENCY_CLEAR  |ALL_PORTS(DEV_LATENCY_IMPACT/
NONE==IO_LATENCY_CLEA |RS,SN,EM                 |

Legend:
RS:RASLOG, EM:EMAIL, PD:DECOM, PF:FENCE, SC:SW_CRITICAL
SM:SW_MARGINAL, FM:FMS, PT:TOGGLE, SQ:SDDQ SN:SNMP
```

See Also

logicalGroup, mapsConfig, mapsDb, mapsPolicy, mapsSam

mapsSam

Generates or clears reports to display CPU, RAM, and flash memory usage, and the port status for every physical and virtual Fibre Channel port on the switch.

Synopsis

```
mapssam --show [cpu | memory | flash]
mapssam --clear
mapssam --help
```

Description

Use this command to generate the reports to display CPU, RAM, and flash memory usage, and the port status for every physical and virtual Fibre Channel port on the switch. This command provides an option to clear the reports. This report displays uptime and downtime for each port and enables you to check if a particular port is failing more often than the others.

The Free Memory value that displays in the **mapssam --show** command output includes cache memory. This may differ from the Free Memory value in the **memshow** or **top** command output. However, due to different polling frequency of the **mapssam**, **memshow**, and **top** commands, the data displayed by these commands are in sync with each other most of the time.

When issued with the **--show** option, the report displays with the following information:

Port

Port number on the local switch.

Type

Port type, such as the following: E (E_Port), F (F_Port), U (U_Port), D (disable port), AE (AE_Port), AF (AF_Port), T (E Trunk ports), VE (VE_Port), G (G_Port), DP (persistently disable port), DIA (D_Port), VEX (VEX_Port), or TF (F Trunk ports).

Total Up Time

Percent of time the port was up.

Total Down Time

Percent of time the port was faulty.

Down Occurrence

Number of times the port was faulty.

Total Offline Time

Percent of time the port was offline.

Notes

This command requires a Fabric Vision license.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--show

Displays the MAPS Service Availability Module (SAM) report.

cpu

Displays system CPU usage.

memory

Displays system memory usage.

flash

Displays system flash usage.

--clear

Clears the SAM report.

--help

Displays the command usage.

Examples

To generate a port availability monitor report:

```
switch:admin>  mapssam --show
            Total       Total       Down        Total
Port   Type Up Time     Down Time   Occurrence  Offline Time
            (Percent)   (Percent)   (Times)     (Percent)
==========================================================
0      U     0           0           0           100
1      U     0           0           0           100
2      U     0           0           0           100
3      F    100          0           0             0
4      U     0           0           0           100
5      U     0           0           0           100
6      U     0           0           0           100
7      U     0           0           0           100
8      U     0           0           0           100
```

```
9       E       0           0           0               0
10      U       0           0           0               100
(output truncated)
```

To display CPU usage:

```
switch:admin> mapssam --show cpu
Showing Cpu Usage:
   CPU Usage   : 2.0%
```

To display memory usage:

```
switch:admin> mapssam --show memory
Showing Memory Usage:
   Memory Usage   : 51.0%
   Used Memory    : 257207k
   Free Memory    : 247121k
   Total Memory   : 504328k
```

To display system flash usage:

```
switch:admin> mapssam --show flash
Showing Flash Usage:
   Flash Usage   : 42%
```

To clear the report:

```
switch:admin> mapssam --clear
```

See Also

logicalGroup, mapsConfig, mapsDb, mapsPolicy, mapsRule

memShow

Displays the amounts of free and used memory in a switch.

Synopsis

`memshow [-b | -k | -m]`

Description

Use this command to display free and used memory in the switch, as well as the shared memory and buffers used by the kernel.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

-b

Specify to display memory usage in bytes.

-k

Specify to display memory usage in kilobytes.

-m

Specify to display memory usage in megabytes. By default, memory usage is displayed in bytes.

Examples

To view the memory usage:

```
switch:admin> memshow
          total       used       free     shared    buffers     cached
Mem:   129740800  112562176   17178624          0     139264   30396416
Swap:          0          0          0

switch:admin> memshow -m
          total       used       free     shared    buffers     cached
Mem:         123        107         16          0          0         28
Swap:          0          0          0
```

See Also

supportSave

motd

Sets the banner on the chassis.

Synopsis

```
motd --set string
motd --show
```

Description

Use this command to set the banner on the chassis.

The banner is a string of alphanumeric characters. It is displayed before you log in to a switch. This banner is shown only in the Fabric OS CLI prompt and it is not shown in Web Tools.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following optional operands:

--set *string*

Specify a text string of alphanumeric characters to be displayed before login. The string must be enclosed in double quotation marks. Spaces are allowed. The maximum length is 1022 characters.

The message displays either before or after the login prompt, depending on the SSH client implementation. Fabric OS does not control when the MOTD displays.

--show

Displays the chassis-wide banner.

--help

Displays the command usage.

Examples

To set a chassis-level banner for the switch:

```
switch:admin> motd --set "This is a \
    chassis-level banner. It displays before the login."
```

To display the banner:

```
switch:admin> motd --show
```

```
This is a chassis-level banner. It displays before the login.
```

See Also

[bannerSet](), [bannerShow]()

mgmtApp

Configures the maximum number of REST sessions, throttling configurations, terminates a REST session, and enables or disables keepalive. On chassis-based systems, this command is supported only on the active CP.

Synopsis

mgmtapp --config *configuration_parameters*
mgmtapp --terminate *session_id*
mgmtapp --enable rest | keepalive
mgmtapp --disable rest | keepalive
mgmtapp --unbind
mgmtapp --show

Description

Use this command to perform REST session-related operations. Allows maximum REST session configuration to the entire switch and chassis and on per logical switch on VF-enabled switches.

Use to enable and disable the REST interface. It is enabled by default and when enabled, it uses the **maxrestsession** count and allows client logins.

Use **keepalive** option to enable or disable keepalive connection in HTTPS. The option is disabled by default. The keepalive connection expires after processing 25 requests or an idle time of 15 seconds.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

For more information of using REST with Fabric OS devices, refer to the *Brocade Fabric OS REST API Reference Manual*.

Operands

This command has the following operands:

--config *configuration_parameters*

>   Configures REST-related configurations.

-maxrestsession *rest_session_count*

>   Configures the maximum REST sessions allowed. The concurrent sessions are limited to config db and validates whenever a new REST login is processed. An error is reported if the login count has reached its maximum limit. The minimum and maximum numbers are 1 and 10 sessions respectively and the default is 3 sessions.

-sampletime *sampling_time_in_sec*

> Sets the sampling time in seconds. The sampling time controls the duration of the sampling window for throttling control. The minimum and the default sample time for throttling is 30 seconds and the maximum is 2147483647 seconds (596,523 hours, 14 minutes, and 7 seconds).

-samplerequest *sampling_request_count*

> Sets the sampling request count. The sampling request count controls the number of accepted REST operations within the sample time configured. The minimum and the default sampling request count allowed is 30 and the maximum is 2147483647 seconds (596,523 hours, 14 minutes, and 7 seconds).

-idletime *throttling_time_in_sec*

> Sets the idle time in seconds. The idle time controls the idle duration required before accepting new operations after throttling is activated. The minimum and the default idle-time for throttling is 3 seconds and the maximum is 2147483647 seconds (596,523 hours, 14 minutes, and 7 seconds).

--terminate *session_id*

> Terminates the REST session for the specified session ID as defined in **appLoginHistory**. This option also removes all the session parameters from the backend database.

--enable rest | keepalive

> Enables the specified REST interface or keepalive. The Keepalive mode can be enabled only when the HTTPS mode is on.

--disable rest | keepalive

> Disables the specified REST interface or keepalive.

--unbind

> Clears the binding of the switch to the Management application to allow a different instance of the Management application to manage the switch. This option also clears the collection configuration created by the application.
>
> This option is supported only on the Brocade Analytics Monitoring Platform.

--show

> Displays the maximum number of configured REST sessions and the REST throttling configuration values (sample request counts, sample time (in seconds), idle time (in seconds), keepalive state (enabled or disabled), and keepalive timeout (in seconds).

Examples

> To configure the maximum number of REST sessions:

```
switch:admin> mgmtapp --config -maxrestsession 5
Configuration succeeded.
```

To configure the throttling options:

```
switch:admin> mgmtapp --config -sampletime 40 -samplerequest 40 -idletime 4
Configuration succeeded.
```

To terminate a REST session:

```
switch:admin> mgmtapp --terminate
df5e6d2495d366c172816ce165193510feed81efc2677ed9dccfa40d85535762
Rest session terminated successfully.
```

To unbind the Management application from a Brocade Analytics Monitoring Platform:

```
switch:admin> mgmtapp --unbind
Application unbind success.
```

To enable the REST interface:

```
switch:admin> mgmtapp --enable rest
Rest interface enabled successfully.
```

```
switch:admin> mgmtapp --show
REST Interface State: Enabled
REST Session Count: 2
REST Throttling Configurations:
   Sample Requests      : 1000
   Sample Time (in sec) : 30
   Idle Time (in sec)   : 3
   KeepAlive : Disabled
   KeepAliveTimeout : 15sec
```

To disable the REST interface:

```
switch:admin> mgmtapp --disable rest
Rest interface disabled successfully.
```

```
switch:admin> mgmtapp --show
REST Interface State: Disabled
REST Session Count: 2
REST Throttling Configurations:
   Sample Requests      : 1000
   Sample Time (in sec) : 30
   Idle Time (in sec)   : 3
   KeepAlive : Disabled
   KeepAliveTimeout : 15sec
```

To enable keepalive mode:

```
switch:admin> mgmtapp --enable keepalive
HTTP mode will be disabled after enabling KeepAlive.Do you want to
continue?(y or n) y
KeepAlive enabled successfully.
```

```
switch:admin> mgmtapp --show
REST Interface State: Disabled
REST Session Count: 2
```

```
REST Throttling Configurations:
    Sample Requests      : 1000
    Sample Time (in sec) : 30
    Idle Time (in sec)   : 3
    KeepAlive : Enabled
    KeepAliveTimeout : 15sec
```

To disable keepalive mode:

```
switch:admin> mgmtapp --disable keepalive
KeepAlive disabled successfully.
```

```
switch:admin> mgmtapp --show
REST Interface State: Disabled
REST Session Count: 2
REST Throttling Configurations:
    Sample Requests      : 1000
    Sample Time (in sec) : 30
    Idle Time (in sec)   : 3
    KeepAlive : Disabled
    KeepAliveTimeout : 15sec
```

To display the configuration settings:

```
switch:admin> mgmtapp --show
REST Interface State: Enabled
REST Session Count: 3
REST Throttling Configurations:
    Sample Requests      : 30

    Sample Time (in sec) : 30
    Idle Time (in sec)   : 3
    KeepAlive : Enabled
    KeepAliveTimeout : 15sec
```

See Also

appLoginHistory

msCapabilityShow

Displays the Management Server (MS) capabilities.

Synopsis

```
mscapabilityshow
```

Description

Use this command to display the supported capabilities of the Management Server for each switch in the fabric. An asterisk displays next to the name of the local switch.

Notes

Reliable commit service (RCS) is a fabric-wide capability and is supported only if all the switches in the fabric support the service.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To display the supported MS capabilities for each switch in the fabric:

```
switch:admin> mscapabilityshow
        Switch WWN         Capability   Switch Name
========================   ==========   =======
10:00:00:60:69:20:15:71    0x0000008f   "switch1"*
10:00:00:60:69:00:30:05    0x0000008f   "switch2"

        Capability Bit Definitions:
                Bit 0: Basic Config Service Supported.
                Bit 1: Platform Management Service Supported.
                Bit 2: Topology Discovery Service Supported.
                Bit 3: Unzoned Name Service Supported.
                Bit 4: Fabric Zone Service Supported.
                Bit 5: Fabric Lock Service Supported.
                Bit 6: Time Service Supported.
                Bit 7: RSCN Small Payload Supported.
                Bit 8: Reliable Commit Service(RCS) Supported.
            Bit 9: Access Gateway Registration/Discovery Supported.
              Others: Reserved.
```

See Also

msPlMgmtActivate, msPlMgmtDeactivate

msConfigure

Configures the Management Server (MS) access control list (ACL).

Synopsis

msconfigure

Description

Use this command to configure the MS Access Control List (ACL). The MS allows a Storage Area Network (SAN) management application to retrieve and administer the fabric and Interconnect Elements, such as switches. This application is located at the Fibre Channel well-known address, 0xFFFFFA.

If the MS ACL is empty (default), The MS is available to all systems connected to the fabric. By populating the MS ACL with one or more world wide names (WWNs), you can restrict access to MS to the specified WWNs.

This command is interactive and provides the following choices:

0

Done

1

Display the access list

2

Add member based on its port/node WWN

3

Delete member based on its port/node WWN

When changing the MS ACL by adding or deleting WWNs, you are prompted to save the new configuration to nonvolatile storage. The saved MS ACL becomes effective upon reboot.

The MS ACL is implemented on a per-switch basis and should be configured on the switch to which the management application is directly connected.

Notes

When an FCS policy is enabled, the MS ACL is not used. In such a case, access to MS is controlled by security by way of the MS_POLICY configuration.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

       None

Examples

       To display the MS ACL:

```
switch:admin> msconfigure

0       Done
1       Display the access list
2       Add member based on its Port/Node WWN
3       Delete member based on its Port/Node WWN
select : (0..3) [1] 1

MS Access List consists of (5): {
20:01:00:60:69:00:60:10
20:02:00:60:69:00:60:10
20:03:00:60:69:00:60:10
20:02:00:60:69:00:60:03
20:02:00:60:69:00:60:15

0       Done
1       Display the access list
2       Add member based on its Port/Node WWN
3       Delete member based on its Port/Node WWN
select : (0..3) [1] 0

done ...
```

See Also

       msCapabilityShow, msPlatShow, msPlClearDB, msPlMgmtActivate, msPlMgmtDeactivate, msTdDisable, msTdEnable, msTdReadConfig, secPolicyShow

msPlatShow

Displays the Management Server (MS) platform database.

Synopsis

```
msplatshow
```

Description

Use this command to display information from the MS platform database. This command displays the name of each platform object with the platform type (GATEWAY, HOST_BUS_ADAPTER, and so forth), associated management addresses, and associated node names.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To display the MS platform database for a fabric:

```
switch:admin> msplatshow
---------------------------------------------
Platform Name: [9] "first obj"
Platform Type: 5 : GATEWAY
Number of Associated M.A.: 1
Associated Management Addresses:
[35] "http://java.sun.com/products/plugin"
Number of Associated Node Names: 1
Associated Node Names:
10:00:00:60:69:20:15:71
---------------------------------------------
Platform Name: [10] "second obj"
Platform Type: 7 : HOST_BUS_ADAPTER
Number of Associated M.A.: 1
Associated Management Addresses:
[30] "http://java.sun.com/products/1"
Number of Associated Node Names: 2
Associated Node Names:
10:00:00:60:69:20:15:79
10:00:00:60:69:20:15:75
```

See Also

msCapabilityShow, msPlMgmtActivate, msPlMgmtDeactivate

msPlatShowDBCB

Displays the Management Server (MS) platform service database control block.

Synopsis

```
msplatshowdbcb
```

Description

Use this command to display the control block fields associated with the platform database.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To display the MS platform service database control block:

```
switch:admin> msplatshowdbcb
Domain   Worldwide Name       Retry Count Exchange Status
-------------------------------------------------------
  3: 10:00:00:60:69:51:10:e6      0              0x2
-------------------------------------------------------

msPlDBCB.peerWwn == 00:00:00:00:00:00:00:00.
msPlDBCB.psPeerWwn == 00:00:00:00:00:00:00:00.
msPlDBCB.replicate == 0.
msPlDBCB.fabMaySeg == 255.
msPlDBCB.enabled == 1.
```

See Also

msCapabilityShow, msConfigure, msPlatShow, msPlClearDB, msPlMgmtActivate, msPlMgmtDeactivate

msPlClearDB

Clears the Management Server (MS) platform database on all switches in the fabric.

Synopsis

msplcleardb

Description

Use this command to clear the MS platform database in the entire fabric. Because this operation cannot be undone, it should not be performed unless it is intended to resolve a database conflict between two joining fabrics or to establish an entirely new fabric with an empty database.

Notes

This command is not supported on the Brocade Analytics Monitoring Platform.

When an FCS policy is enabled, this command can be issued only from the primary FCS switch.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To clear the MS platform database:

```
switch:admin> msplcleardb

MS Platform Service is currently enabled.
This will erase MS Platform Service Database in the\
   entire fabric.

Would you like to continue this operation?
   (yes, y, no, n): [no] y

Request to MS Platform DB Clear operation in progress...

*Completed clearing MS Platform Service Database!!
```

See Also

msCapabilityShow, msConfigure, msPlatShow, msPlatShowDBCB, msPlMgmtActivate, msPlMgmtDeactivate

msPlMgmtActivate

Activates the Management Server (MS) platform service.

Synopsis

msplmgmtactivate

Description

Use this command to activate the MS platform service throughout the fabric. This command attempts to activate the MS platform service for each switch in the fabric. The change takes effect immediately and is committed to the configuration database of each affected switch. MS activation is persistent across power cycles and reboots.

Notes

By default, the MS platform service is disabled.

Before issuing this command, run **msCapabilityShow** to verify that all switches in the fabric support the MS platform service; if one switch does not support the service, the command fails.

When an FCS policy is enabled, this command can be issued only from the primary FCS switch.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To activate the MS platform service:

```
switch:admin> msplmgmtactivate

Request to activate MS Platform Service in progress......

*Completed activating MS Platform Service in the fabric!
```

See Also

msCapabilityShow, msPlatShow, msPlMgmtDeactivate

msPlMgmtDeactivate

Deactivates the Management Server (MS) platform service.

Synopsis

        msplmgmtdeactivate

Description

Use this command to deactivate the MS platform service throughout the fabric. This command deactivates the MS platform service for each switch in the fabric and commits the change to nonvolatile storage.

Notes

When an FCS policy is enabled, this command can be issued only from the primary FCS switch.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To deactivate the MS platform service on all switches in the fabric:

```
switch:admin> msplmgmtdeactivate

MS Platform Service is currently enabled.

This will erase MS Platform Service configuration
information as well as database in the entire fabric.

Would you like to continue this operation?
    (yes, y, no, n): [no] y

Request to deactivate MS Platform Service in progress...

*Completed deactivating MS Platform Service in the fabric!
```

See Also

msCapabilityShow, msPlatShow, msPlMgmtActivate

msTdDisable

Disables the Management Server (MS) topology discovery service.

Synopsis

mstddisable ["ALL"]

Description

Use this command to disable the management server topology discovery service on a local switch or an entire fabric. This change takes effect immediately and commits to the configuration database for all affected switches. The change is persistent across power cycles and reboots.

Notes

Topology Discovery Management requires the attached devices (including attached switches) to support request node identification data (RNID) extended link service (ELS).

When an FCS policy is enabled, and this command is issued with the "ALL" operand, it can be issued only from the primary FCS.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

The following operand is optional:

"ALL"

Disables the MS topology discovery service throughout the entire fabric. This operand must be enclosed in double quotation marks.

Examples

To disable the MS topology discovery service on the local switch only:

```
switch:admin> mstddisable
This may erase all NID entries.  Are you sure?
   (yes, y, no, n): [no] y

Request to disable MS Topology Discovery Service
in progress....
done.
*MS Topology Discovery disabled locally.
```

To disable MS topology discovery on all the switches in the fabric:

```
primaryfcs:admin> mstddisable "ALL"
This may erase all NID entries.  Are you sure?
   (yes, y, no, n): [no] y
```

```
Request to disable MS Topology Discovery Service
   in progress....
done.
*MS Topology Discovery disabled locally.
*MS Topology Discovery Disable Operation Complete!!
```

See Also

msTdEnable, msTdReadConfig

msTdEnable

Enables the Management Server (MS) topology discovery service.

Synopsis

mstdenable ["ALL"]

Description

Use this command to enable the MS topology discovery service on the local switch or throughout the fabric. The change takes effect immediately and commits to the configuration database for all affected switches. The change is persistent across power cycles and reboots.

Notes

Topology Discovery Management requires the attached devices (including attached switches) to support request node identification data (RNID) extended link service (ELS).

When an FCS policy is enabled, and this command is issued with the "ALL" operand, it can be issued only from the primary FCS.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

The following operand is optional:

"ALL"

Enables the MS topology discovery service throughout the fabric. This operand must be enclosed in double quotation marks.

Examples

To enable the MS topology discovery service on the local switch:

```
switch:admin> mstdenable

Request to enable MS Topology Discovery Service
  in progress....
done.
*MS Topology Discovery enabled locally.
```

To enable MS topology discovery on all switches in the fabric:

```
switch:admin> mstdenable "ALL"

Request to enable MS Topology Discovery Service
  in progress....
done.
*MS Topology Discovery enabled locally.
```

```
                    *MS Topology Discovery Enable Operation Complete!!
```

See Also

msTdDisable, msTdReadConfig

msTdReadConfig

Displays the status of The Management Server (MS) topology discovery service.

Synopsis

    mstdreadconfig

Description

Use this command to check whether or not the management server topology discovery service is enabled.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To display the status of the topology discovery service:

```
switch:admin> mstdreadconfig

*MS Topology Discovery is enabled.
```

See Also

msCapabilityShow, msConfigure, msPlMgmtActivate, msPlMgmtDeactivate, msTdDisable, msTdEnable

myId

Displays the current login session details.

Synopsis

```
myid
```

Description

Use this command to display the status of the system and the login session details. This includes IPv4 or IPv6 addresses associated with the login session.

The login session gives details of the following:

- CP/switch (or console/serial port) used to log in.

- The IP address of the current login session for Telnet or the name of the current console port or the serial port (if modem login used).

- The current CP mode (Active, Standby, or N/A).

- The current system status (Redundant, Nonredundant, or N/A).

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To display current login information:

```
switch:admin> myid
 Current Switch: switch
 Session Detail: switch (123.123.123.123) Active Redundant
switch:admin> myid
 Current Switch: sw0
 Session Detail: sw0 (123.123.123.123) N/A  HA-Status-N/A
```

See Also

version

nbrShow

Displays FSPF protocol information.

Synopsis

nbrshow [*slot/*][*port*]

Description

Use this command to display FSPF protocol statistics and information about the link between the local and remote switches, including the current synchronization state of the two switches connected through the link. This information is used when debugging FSPF related link protocol issues. The displayed information is a subset of that shown in the **interfaceShow** command, which also includes interface and port information for the local port.

The following fields are displayed:

state

Current state of this interface. This E_Port is used to route traffic to other switches only if the state is NB_ST_FULL.

lastTransition

Time the last state changed on this interface.

nghbCap

Neighbor capabilities. Should be 0.

nghbId

Domain ID of the neighbor (adjacent) switch.

idbNo

IDB number. Should be equal to *port*.

remPort

Port number on the remote switch connected to this port.

nflags

Internal FSPF flags.

initCount

Number of times this neighbor was initialized without the interface going down.

lastInit

Time of the last initializing state, NB_ST_INIT, on this interface.

firstHlo

Time of the first hello sent on this interface.

nbstFull

Time of the last finishing state, NB_ST_FULL, on this interface.

&dbRetransList

Pointer to the database retransmission list.

&lsrRetransList

Pointer to the link state records (LSR) retransmission list.

&lsrAckList

Pointer to the link state acknowledgements (LSA) retransmission list.

inactTID

Inactivity timer ID.

helloTID

Hello timer ID.

dbRtxTID

Database retransmission timer ID.

lsrRtxTID

LSR retransmission timer ID.

inactTo

Inactivity timeout value, in milliseconds. When this timeout expires, the adjacency with
the neighbor switch is broken and new paths are computed to all possible destination
switches in the fabric.

helloTo

Hello timeout value, in milliseconds. When this timeout expires, a Hello frame is sent to
the neighbor switch through this port.

rXmitTo

Retransmission timeout value, in milliseconds. It is used to transmit topology information to the neighbor switch. If no acknowledgement is received within this value, the frame is retransmitted.

nCmdAcc

Total number of commands accepted from the neighbor switch. Number includes Hellos, Link State Updates (LSUs), and LSAs.

nInvCmd

Number of invalid commands received from the neighbor switch. Usually commands with an FSPF version number higher than the one running on the local switch.

nHloIn

Number of Hello frames received from the neighbor switch.

nInvHlo

Number of invalid Hello frames (Hello frames with invalid parameters) received from the neighbor switch.

nLsuIn

Number of LSUs received from the neighbor switch.

nLsaIn

Number of LSAs received from the neighbor switch.

attHloOut

Number of attempted transmissions of Hello frames to the neighbor switch.

nHloOut

Number of Hello frames transmitted to the neighbor switch.

attLsuOut

Number of attempted transmissions of LSUs to the neighbor switch.

nLsuOut

Number of LSUs transmitted to the neighbor switch.

attLsaOut

Number of attempted transmissions of LSAs to the neighbor switch.

nLsaOut

Number of LSAs transmitted to the neighbor switch.

StuckCnt

Number of HLO timeouts that occurred before the port changed to the NB_ST_FULL state.

state

Substate of the port. The port can be in one of the following 12 substates:

INIT (0)

The port is initializing.

ROUTABLE (1)

The port is ready to receive frames.

ROUTABLE_WAIT (2)

The port is waiting for notification from the neighbor.

ROUTABLE_SEND (3)

The port is preparing for local route update; negotiates for the necessary locks before updating the routes.

ROUTABLE_TIMER (4)

The request for one or more locks failed; delay for a short interval before retrying.

DONE (5)

The port is online and in use.

DECOM_START (6)

The decommissioning request is sent to the neighbor and waiting for a response.

DECOM_WAIT (7)

Waiting for neighbor to remove routes using the interswitch link (ISL).

DECOM_SEND (8)

Preparing to update routes of the local port; negotiates for the necessary before updating the routes.

DECOM_TIMER (9)

    The request for one or more locks failed; delay for a short interval before retrying.

DECOM_DONE (10)

    The local routes are updated; waiting for acknowledgement from the neighbor.

DECOM_BLOCK (11)

    The local routes are updated; the neighbor sent acknowledgement.

chassis_lock

    Internal variable

lock_request

    Internal variable

nbr_lock_lock

    Internal variable

r_rdy_rcvd

    Indicates if the neighbor has reported as ready to receive frames.

nbr r_rdy flags

    Internal flags reported by the neighbor.

lock_busy_cnt

    Number of times a lock has reported as busy.

decom_active

    Indicates if a decommissioning request is active on the port.

decom_initiator

    Indicates if the local port is the decommissioning request initiator.

decom_active_port

    Indicates the port for which the decommissioning request is active.

decom_trunk_member

    Indicates if decommissioning request is for a multi-link trunk.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

slot

For bladed systems only, specify the slot number of the port to be displayed, followed by a slash (/).

port

Specify the number of the port to be displayed, relative to its slot for bladed systems. Use **switchShow** for a list of valid ports. This operand is optional; if omitted, the interface information for all ports is displayed.

Examples

To display FSPF protocol statistics and information:

```
switch:admin> nbrshow 1/19
lastTransition  = Jun 04 05:05:02.592
nghbCap         = 0x0
nghbId          = 188
idbNo           = 131
remPort         = 243
nflags          = 0xf
initCount       = 0
lastInit        = Jun 04 05:05:02.592
firstHlo        = Jun 04 05:05:21.474
nbstFull        = Jan 01 00:00:00.000
&dbRetransList  = 0x10b96928
&lsrRetransList = 0x10b96930
&lsrAckList     = 0x10b96938
inactTID        = 0x10b96b08
helloTID        = 0x10b97cb8
dbRtxTID        = 0x10b98e68
lsrRtxTID       = 0x10b9b1c8
inactTo         = 160000
helloTo         = 20000
rXmitTo         = 5000
nCmdAcc         = 38
nInvCmd         = 0
nHloIn          = 35
nInvHlo         = 0
nLsuIn          = 2
nLsaIn          = 1
attHloOut       = 35
nHloOut         = 35
```

```
attLsuOut       = 1
nLsuOut         = 1
attLsaOut       = 2
nLsaOut         = 2
StuckCnt        = 0

Port Sub-State Data:
state           = DONE (5)
chassis_lock    = 0
lock_request    = 0
nbr_lock_lock   = 0
r_rdy_rcvd      = 0
nbr r_rdy flags = 0x0
lock_busy_cnt   = 0
decom_active    = 0
decom_initiator = 0
decom_active_port = -1
decom_trunk_member = 0
```

See Also

interfaceShow

nbrStateShow

Displays the state of FSPF neighbors.

Synopsis

nbrstateshow [*slot/*][*port*]

Description

Use this command to display information about fabric shortest path first (FSPF) neighbors to the local switch or information about a neighbor to a specified port. FSPF defines a neighbor as a remote E_Port interface that is directly attached to the local switch. However, if ports are trunked, the command displays data only about the trunk master.

This command displays the following fields:

Local Domain ID

Domain ID of the local switch.

Local Port

E_Port interface on the local switch. This value is typically equal to the Index field reported in the **switchShow** command.

Domain

Domain ID of the remote switch.

Remote Port

E_Port interface on the remote switch.

State

State of the neighbor. The neighbor can be in one of the following five states:

0

NB_ST_DOWN - The neighbor is down.

1

NB_ST_INIT - The neighbor is initializing.

2

NB_ST_DB_EX - The neighbor and the switch are exchanging data from their Link State Records (LSR) databases.

3

> **NB_ST_DB_ACK_WT** -The neighbor is waiting for the switch to acknowledge the LSR database.

4

> **NB_ST_DB_WT** - The LSR Database is in waiting state; synchronization is in process.

5

> **NB_ST_FULL** - The neighbor is in the last, finishing state. The E_Port can route frames only if the neighbor is in full state.

Sub-State

> Substate of the port. The port can be in one of the following 12 substates:

INIT

> The port is initializing.

ROUTABLE

> The port is ready to receive frames.

ROUTABLE_WAIT

> The port is waiting for notification from the neighbor.

ROUTABLE_SEND

> The port is preparing for local route update; negotiates for the necessary locks before updating the routes.

ROUTABLE_TIMER

> The request for one or more locks failed; delay for a short interval before retrying.

DONE

> The port is online and in use.

DECOM_START

> The decommissioning request is sent to the neighbor and waiting for a response.

DECOM_WAIT

> Waiting for neighbor to remove routes using the interswitch link (ISL).

DECOM_SEND

Preparing to update routes of the local port; negotiates for the necessary before updating the routes.

DECOM_TIMER

The request for one or more locks failed; delay for a short interval before retrying.

DECOM_DONE

The local routes are updated; waiting for acknowledgement from the neighbor.

DECOM_BLOCK

The local routes are updated; the neighbor sent acknowledgement.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

slot

For bladed systems only, specify the slot number of the port to display, followed by a slash (/).

port

Specify the port number to display, relative to its slot for bladed systems. Use **switchShow** to list valid ports. This operand is optional; if omitted, all neighbor states are displayed.

Examples

To display information about a neighbor directly connected to the local switch:

```
switch:user> nbrstateshow 2/0
Local Domain ID: 1

Local Port   Domain    Remote Port   State      Sub-State
----------------------------------------------------
    16          2          48        NB_ST_FULL DONE
```

See Also

interfaceShow

nbrStatsClear

Resets FSPF interface counters.

Synopsis

nbrstatsclear [*slot/*][*port*]

Description

Use this command to reset the counters of fabric shortest path first (FSPF) frames transmitted and received on all interswitch links (ISLs) or on a specified ISL Use this command without operands to reset counters on all interfaces. Use **interfaceShow** to view the FSPF counters.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

slot

>   For bladed systems only, specify the slot number of the port to display, followed by a slash (/).

port

>   Specify the port number to display, relative to its slot for bladed systems. Use **switchShow** to list valid ports. This operand is optional; if omitted, FSPF statistics are reset.

Examples

To display the counters on a port:

```
switch:admin> interfaceshow 1/0

idbP          = 0x10050a38

Interface 0 data structure:

nghbP         = 0x1004ce68
ifNo          = 0
masterPort    = 0 (self)
defaultCost   = 500
cost          = 500
delay         = 1

(output truncated)
```

```
nCmdAcc         = 37
nInvCmd         = 0
nHloIn          = 10
nInvHlo         = 0
nLsuIn          = 17
nLsaIn          = 10
attHloOut       = 11
nHloOut         = 11
attLsuOut       = 12
nLsuOut         = 12
attLsaOut       = 17
nLsaOut         = 17
```

To reset the counters on a port:

```
switch:admin> nbrstatsclear 1/0
```

To verify the changes:

```
switch:admin> interfaceshow 1/0

idbP            = 0x10050a38

Interface 0 data structure:

nghbP           = 0x1004ce68
ifNo            = 0
masterPort      = 0 (self)
defaultCost     = 500
cost            = 500

(output truncated)
```

See Also

interfaceShow, portShow, switchShow

nodeFind

Displays all device Name Server (NS) entries matching a given WWN, device PID, or alias.

Synopsis

nodefind *WWN | PID | ALIAS*

Description

Use this command to display the NS information for all devices in the fabric that have either a port world wide name (WWN) or a node WWN matching the given WWN; or have a device PID matching the given PID; or have a defined configuration alias to which the device belongs matching the given alias.

If there is no device matching the given WWN, PID, or alias, the message *"No device found"* is displayed.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

WWN | PID | ALIAS

Specify the WWN, device PID, or alias that can be used to match the real device's data. The WWN must be specified as a hexadecimal value or a colon-separated value with eight fields, each consisting of one or two hexadecimal numbers between 0 and ff. The PID usually begins with 0x or 0X. If the PID does not begin with 0x or 0X, it is interpreted as an alias. If an alias is not found, the argument is checked for other PIDs.

Examples

To display all the device information matching the WWN "30:19:01:eb:1a:bb:6c:fd":

```
switch:user> nodefind 30:19:01:eb:1a:bb:6c:fd
Remote:
  Type Pid    COS      PortName                   NodeName
   N   010801;    2,3;30:19:01:eb:1a:bb:6c:fd;10:00:50:eb:1a:bb:6c:fd;

        FC4s: FCP FC-NVMe
        NodeSymb: [31] "nvmehost:sw0"
        Fabric Port Name: 20:08:50:eb:1a:88:bc:40
        Permanent Port Name: 30:19:50:eb:1a:bb:6c:fd
        Device type: NPIV Initiator
        Port Index: 8
        Share Area: No
```

```
            Redirect: No
            Partial: No
            Slow Drain Device: No
            Device Link speed: 16G
            FCoE: No
            FC4 Features [FCP]: Initiator
            FC4 Features [FC-NVMe]: Initiator
      Aliases:  Initiator-XYZ
```

To display all the device information matching the PID "010800":

```
switch:user> nodefind 010800
Remote:
    Type Pid    COS     PortName                    NodeName
  N   010800;   2,3;30:19:50:eb:1a:bb:6c:fd;10:00:50:eb:1a:bb:6c:fd;
            FC4s: FCP FC-NVMe
            NodeSymb: [31] "nvmehost:sw0"
            Fabric Port Name: 20:08:50:eb:1a:88:bc:40
            Permanent Port Name: 30:19:50:eb:1a:bb:6c:fd
            Device type: Physical Initiator
            Port Index: 8
            Share Area: No
            Redirect: No
            Partial: No
            Slow Drain Device: No
            Device Link speed: 16G
            FCoE: No
            FC4 Features [FCP]: Initiator
            FC4 Features [FC-NVMe]: Initiator Discovery_Service
      Aliases:
```

To display device information for a string for which there is no match:

```
switch:user> nodefind abcd
No device found.
```

To display all the device information matching the alias "Initiator-XYZ":

```
switch:user> nodefind Initiator-XYZ
Remote:
    Type Pid    COS     PortName                    NodeName
  N   010801;   2,3;30:19:01:eb:1a:bb:6c:fd;10:00:50:eb:1a:bb:6c:fd;
            FC4s: FCP FC-NVMe
            NodeSymb: [31] "nvmehost:sw0"
            Fabric Port Name: 20:08:50:eb:1a:88:bc:40
            Permanent Port Name: 30:19:50:eb:1a:bb:6c:fd
            Device type: NPIV Initiator
            Port Index: 8
            Share Area: No
            Redirect: No
            Partial: No
            Slow Drain Device: No
            Device Link speed: 16G
            FCoE: No
```

```
            FC4 Features [FCP]: Initiator
            FC4 Features [FC-NVMe]: Initiator
     Aliases: Initiator-XYZ
```

See Also

aliShow, nsAllShow, nsCamShow, nsShow

nodeWWN

Adds a WWN to the OUI database, displays the WWNs added by the user, displays usage information, and also dumps debug information into a file.

Synopsis

```
nodewwn --add -vendor vendor_name vendor_wwn
nodewwn --show
nodewwn --debug
nodewwn --help
```

Description

Use this command to add WWN to the OUI database for MAPS UCS Uplink Distribution.

The WWNs added using **nodeWwn** command are also saved during config upload and restored during config download operations.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--add -vendor

Adds the new vendor WWN to the OUI database.

vendor_name

Specifies the vendor name. The only supported vendor name is Cisco.

vendor_wwn

Specifies the vendor node WWN. The WWN must be presented in colon separated format.

--show

Displays the user-defined node WWNs.

--debug]

Dumps the OUI database information in a file for debugging.

--help

> Displays the command usage.

Examples

> To add a new vendor and display the details:

```
switch:admin> nodewwn --add -vendor Cisco 20:00:8c:7c:ff:5e:a3:00
The WWN added successfully.

switch:admin> nodewwn --show
WWN                       OUI        Vendor Name
-----------------------   --------   -----------
20:00:8c:7c:ff:5e:a3:00   0x8c7cff   Cisco
```

> To display node WWNs when no new devices were added to the user-defined database.

```
switch:admin> nodewwn --show
No user defined node WWNs found.
```

> To dump the OUI DB information in a file:

```
switch:admin> nodewwn --debug
The OUI DB dumped to /tmp/fab_oui_db_debug.txt file.
```

See Also

> deviceLogin, mapsRule, mapsConfig, mapsPolicy

nsAliasShow

Displays local Name Server (NS) information, with aliases.

Synopsis

nsaliasshow [**-r**][**-t**] | **-domain** *domain_id* | **--help**

Description

Use this command to display local name server information with the added feature of displaying the defined configuration aliases to which the device belongs. If there are no defined configuration aliases for that device, no alias is displayed. If there is no information in this switch, the following message is displayed: "There is no entry in the Local Name Server." Use the **-domain** *domainid* option to display the remote device details for a specific domain in the fabric.

The information displayed for each device is the same that is displayed by the **nsShow** command with the exception of the additional display of the alias to which the device belongs. Refer to the **nsShow** help page for a description of these displays. Use **nsCamShow** to display information from all switches.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following optional operands:

-r

Replaces the time-to-live (TTL) attribute output with state change registration (SCR) information. This value indicates what type of RSCN a device registers to receive. Values include the following:

SCR=0

Reserved.

SCR=1

Fabric detected registration. Register to receive all RSCN requests issued by the fabric controller for events detected by the fabric.

SCR=2

NX_Port detected registration. Register to receive all RSCN requests issued for events detected by the affected NX_Port.

SCR=3

Register to receive all RSCN requests issued. The RSCN request returns all effected N_Port_ID pages.

-t

Displays the device type. The device type is defined in terms of two attributes. The first attribute indicates the origination of the device as one of the following:

- Physical -The device is connected to the NX_Port, using FLOGI to log in to the switch.

- Virtual -The device is contrived by the switch.

- NPV -The device is connected to the NX_Port, using FDISC to log in to the switch.

- iSCSI Device is connected to the iSCSI port.

The second attribute indicates the role of the device. Valid role attributes include the following:

- Unknown (initiator/target) - Device role is not detected

- Initiator - An iSCSI initiator.

- Target - An iSCSI target.

- Initiator+Target - Both an iSCSI initiator and an iSCSI target.

-domain *domain_id*

Displays the remote device details for a specific domain.

--help

Displays the command usage.

Examples

To display local NS information with aliases:

```
switch:user> nsaliasshow
{
 Type Pid    COS    PortName           NodeName               TTL(sec)
 N 010600;3;20:06:00:05:1e:38:81:71;10:00:00:05:1e:38:81:71; na
    Fabric Port Name: 20:06:00:05:1e:7a:7a:00
    Permanent Port Name: 20:06:00:05:1e:38:81:71
    Port Index: 6
    Share Area: No
    Redirect: No
    Partial: No
    Aliases: MyAlias1 MyAlias2
 N 010601;3;23:0d:00:05:1e:38:81:71;50:00:51:e3:88:17:10:0d; na
    FC4s: FCP
```

```
                PortSymb: [44] "Brocade Ioblaster Port Entity #00,pid#10601."
                Fabric Port Name: 20:06:00:05:1e:7a:7a:00
                Permanent Port Name: 20:06:00:05:1e:38:81:71
                Port Index: 6
                Share Area: No
                Redirect: No
                Partial: No
                Aliases:
         N 010602;3;10:00:00:00:00:00:00:01;10:00:00:00:00:00:00:01; na
                FC4s: FCP
                PortSymb: [41] "Brocade Ioblaster Initiator#00,pid#10602."
                Fabric Port Name: 20:06:00:05:1e:7a:7a:00
                Permanent Port Name: 20:06:00:05:1e:38:81:71
                Port Index: 6
                Share Area: No
                Redirect: No
                Partial: No
                Aliases: DeviceAlias
        The Local Name Server has 3 entries }
```

To display local NS information with aliases with the **-r** option:

```
switch:user> nsaliasshow -r
{
 Type Pid   COS      PortName                NodeName          SCR
 N 010600;3;20:06:00:05:1e:38:81:71;10:00:00:05:1e:38:81:71; 0
        Fabric Port Name: 20:06:00:05:1e:7a:7a:00
        Permanent Port Name: 20:06:00:05:1e:38:81:71
        Port Index: 6
        Share Area: No
        Redirect: No
        Partial: No
        Aliases: MyAlias1 MyAlias2
 N 010601; 3;23:0d:00:05:1e:38:81:71;50:00:51:e3:88:17:10:0d; 3
        FC4s: FCP
        PortSymb: [44] "Brocade Ioblaster Port Entity #00,pid#10601."
        Fabric Port Name: 20:06:00:05:1e:7a:7a:00
        Permanent Port Name: 20:06:00:05:1e:38:81:71
        Port Index: 6
        Share Area: No
        Redirect: No
        Partial: No
        Aliases:
 N 010602;3;10:00:00:00:00:00:00:01;10:00:00:00:00:00:00:01; 3
        FC4s: FCP
        PortSymb: [41] "Brocade Ioblaster Initiator#00,pid#10602."
        Fabric Port Name: 20:06:00:05:1e:7a:7a:00
        Permanent Port Name: 20:06:00:05:1e:38:81:71
        Port Index: 6
        Share Area: No
        Redirect: No
        Partial: No
        Aliases: DeviceAlias
The Local Name Server has 3 entries }
```

To display local NS information with aliases with the **-r**and **-t** options:

```
switch:admin> nsaliasshow -r -t
{
 Type Pid    COS      PortName               NodeName          SCR
 N 010600; 3;20:06:00:05:1e:38:81:71;10:00:00:05:1e:38:81:71; 0
    Fabric Port Name: 20:06:00:05:1e:7a:7a:00
    Permanent Port Name: 20:06:00:05:1e:38:81:71
    Device type: Physical Unknown(initiator/target)
    Port Index: 6
    Share Area: No
    Redirect: No
    Partial: No
    Aliases: MyAlias1 MyAlias2
 N 010601;3;23:0d:00:05:1e:38:81:71;50:00:51:e3:88:17:10:0d; 3
    FC4s: FCP
    PortSymb: [44] "Brocade Ioblaster Port Entity #00,pid#10601."
    Fabric Port Name: 20:06:00:05:1e:7a:7a:00
    Permanent Port Name: 20:06:00:05:1e:38:81:71
    Device type: NPIV Unknown(initiator/target)
    Port Index: 6
    Share Area: No
    Redirect: No
    Partial: No
    Aliases:
 N 010602; 3;10:00:00:00:00:00:00:01;10:00:00:00:00:00:00:01; 3
    FC4s: FCP
    PortSymb: [41] "Brocade Ioblaster Initiator#00,pid#10602."
    Fabric Port Name: 20:06:00:05:1e:7a:7a:00
    Permanent Port Name: 20:06:00:05:1e:38:81:71
    Device type: NPIV Initiator
    Port Index: 6
    Share Area: No
    Redirect: No
    Partial: No
    Aliases: DeviceAlias
The Local Name Server has 3entries }
```

To display remote device details for a specific domain:

```
switch:admin> nsaliasshow -domain 92
{
 Type Pid    COS      PortName               NodeName
 N 5c1000; 3;23:06:00:05:1e:53:e3:8a;50:00:51:e5:3e:38:a0:06;
  FC4s: FCP
  PortSymb: [45] "Brocade VDPC Entity-Slot#00,DPC#00,Entity#03."
  Fabric Port Name: 20:10:00:05:1e:53:e3:8a
  Permanent Port Name: 23:06:00:05:1e:53:e3:8a
  Port Index: 16
  Share Area: No
  Redirect: No
  Partial: No
  Aliases: MyAlias1
 N 5c1200;3;23:04:00:05:1e:53:e3:8a;50:00:51:e5:3e:38:a0:04;
```

```
             FC4s: FCP
             PortSymb: [45] "Brocade VDPC Entity-Slot#00,DPC#00,Entity#02."
             Fabric Port Name: 20:12:00:05:1e:53:e3:8a
             Permanent Port Name: 23:04:00:05:1e:53:e3:8a
             Port Index: 18
             Share Area: No
             Redirect: No
             Partial: No
             Aliases: MyAlias1
         N 5c1300; 3;23:02:00:05:1e:53:e3:8a;50:00:51:e5:3e:38:a0:02;
             FC4s: FCP
             PortSymb: [45] "Brocade VDPC Entity-Slot#00,DPC#00,Entity#01."
             Fabric Port Name: 20:13:00:05:1e:53:e3:8a
             Permanent Port Name: 23:02:00:05:1e:53:e3:8a
             Port Index: 19
             Share Area: No
             Redirect: No
             Partial: No
             Aliases:
         N  5c1700; 3;23:00:00:05:1e:53:e3:8a;50:00:51:e5:3e:38:a0:00;
             FC4s: FCP
             PortSymb: [34] "Brocade DPC Entity-Slot#00,DPC#00."
             Fabric Port Name: 20:17:00:05:1e:53:e3:8a
             Permanent Port Name: 23:00:00:05:1e:53:e3:8a
             Port Index: 23
             Share Area: No
             Redirect: No
             Partial: No
             Aliases:
         The Remote Name Server has 4 entries }
```

See Also

nsAllShow, nsShow, switchShow

nsAllShow

Displays global name server information.

Synopsis

nsallshow [*type*]

Description

Use this command to display the 24-bit Fibre Channel addresses of all devices in all switches in the fabric. When used with the type operand, the command displays only devices of the specified FC-4 type. FC-4 type codes are referenced in the *Fibre Channel Framing and Signaling* (FC-FS) standards documentation (see "TYPE codes - FC-4"). When used without operand, all devices are displayed.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operand:

type

> Specifies the FC-4 type code to filter the command output. Valid values are 0 to 255. Only the following two FC-4 device type codes are applicable to the Brocade environment:
>
> • 8 - FCP type device
>
> • 5 - FC-IP type device
>
> For all other codes, entries are summarized in the format "*x* ports supporting FC4 *type*", where *x* is the number of ports and *type* is the user-specified FC-4 type code in hexadecimal format.

Examples

To display all devices in the fabric, followed by all type 8 (SCSI-FCP) devices, and all type 5 (SCSI-FCIP) devices:

```
switch:admin> nsAllShow
{
  011000 011200 0118e2 0118e4 0118e8 0118ef 021200 021300
  0214e2 0214e4 0214e8 0214ef
12 Nx_Ports in the Fabric }

switch:admin> nsAllShow 8
{
```

```
  0118e2 0118e4 0118e8 0118ef 0214e2 0214e4 0214e8 0214ef
8 FCP Ports }

switch:admin> nsAllShow 5
{
  011200 021200
2 FC-IP Ports }
```

To display a device type of 255:

```
switch:admin> nsAllShow 255
{
010100 020a00
2 Ports supporting FC4 0xff }
```

See Also

nsShow, switchShow

nsCamShow

Displays information about remote devices in the Name Server (NS) cache.

Synopsis

```
nscamshow [-t]
```

Description

Use this command to display the local NS cache information about the devices discovered in the fabric by the NS cache manager.

If the NS cache manager does not discover new switches or new devices in the fabric, the command displays the message "No Entry is found!"

For each discovered remote switch, this command displays the following information:

Switch entry for *N*

Displays the remote domain ID for the switch.

state

Displays one of the following values:

known

The local domain is aware of all the devices from this remote domain.

unknown

The local domain is unaware of devices from this remote domain.

ERROR

The information for this remote domain is unreliable.

rev

Fabric OS firmware version of the remote switch. For switches running firmware other than Fabric OS, a string of question marks ("????") is displayed.

owner

Displays the owner of the NSCAM database entry. The value displayed is a domain ID (domain address). For example, 0xfffc02 indicates domain 2 and is the domain on which the command has been executed. This is the local domain and the information is stored locally by this switch.

cap_available

Each switch in the fabric exchanges information regarding its capabilities (for example, firmware level, feature support, etc.). When the **cap_available** value is 1, it indicates that the local domain has received the capabilities of the remote domain that is being displayed. When the value is 0 capability information has not been received.

The remaining information displayed for each device is the same that is displayed by the **nsShow** command. Refer to the **nsShow** help page for a description of these displays.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

The following operand is optional:

-t

Displays the device type. (Deprecated)

Examples

To display all switch and device entries discovered by the Name Server in the fabric:

```
switch:user> nscamshow
nscam show for remote switches:
Switch entry for 1
  state   rev    owner  cap_available
  known   v820   0xfffc65 1
  Device list: count 4
    Type Pid    COS     PortName                 NodeName
  N   010800;   2,3;30:19:50:eb:1a:bb:6c:fd;10:00:50:eb:1a:bb:6c:fd;
        FC4s: FCP FC-NVMe
        NodeSymb: [31] "nvmehost:sw0"
        Fabric Port Name: 20:08:50:eb:1a:88:bc:40
        Permanent Port Name: 30:19:50:eb:1a:bb:6c:fd
        Device type: Physical Unknown(initiator/target)
        Port Index: 8
        Share Area: No
        Redirect: No
        Partial: No
        Slow Drain Device: No
        Device Link speed: 16G
        FCoE: No
  N   010801;   2,3;30:19:01:eb:1a:bb:6c:fd;10:00:50:eb:1a:bb:6c:fd;
        FC4s: FCP FC-NVMe
        NodeSymb: [31] "nvmehost:sw0"
        Fabric Port Name: 20:08:50:eb:1a:88:bc:40
        Permanent Port Name: 30:19:50:eb:1a:bb:6c:fd
```

```
            Device type: NPIV Initiator
            Port Index: 8
            Share Area: No
            Redirect: No
            Partial: No
            Slow Drain Device: No
            Device Link speed: 16G
            FCoE: No
            FC4 Features [FCP]: Initiator
            FC4 Features [FC-NVMe]: Initiator
```

See Also

nsAllShow, nsAliasShow, nsShow, switchShow

nsDevLog

Manages device history logging.

Synopsis

```
nsdevlog --show [[-slot slot] -port port |
          -pid pid | -wwpn wwpn | -wwnn nwwn | -event event]
nsdevlog --enable
nsdevlog --disable
nsdevlog --clear
nsdevlog --help
```

Description

Use this command to manage Name Server (NS) device logging. By default, logging is enabled. The NS records the PortIndex, PID, world wide node name (WWNN), world wide port name (WWPN) and the event (login and logout).

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--show *options*

Displays the device logs.

-slot *slot* -port *port*

Displays device logs for the specified port or slot/port.

-pid *pid*

Displays device logs for the specified PID.

-wwpn *pwwn*

Displays device logs for the specified port WWN.

-wwnn *nwwn*

Displays device logs for the specified node WWN.

-event *event*

Displays device logs for the specified event. The events are the following:

- • "Register": Entry created by explicit NS registration,

- • "Deregister": Entry deleted by explicit NS deregistration.

- • "Device Add": Entry created based on UPD Area.

- • "Device Del": Entry deleted based on UPD Delete.

- • "Device Add (Query)": Entry created by NS query from the device.

- • "Port Del": Entries deleted based on DEL Area.

- • "Dup WWN": Entry deleted based on Duplicate WWN.

- • "Switch Offline": Entries deleted due to switch offline.

- • "FPORT Entry": Entry created by F-Port SCN.

- • "Device marked SD": Entry created when a device is marked Slow Drain.

- • "Device cleared SD": Entry created when Slow Drain condition is cleared for a
  device.

--enable

Enables NS device history logging.

--disable

Disables NS device history logging.

--clear

Clears the NS device history logs.

--help

Displays the command usage.

Examples

To enable device logging:

```
switch:admin> nsdevlog --enable
Device History Logging enabled
```

To disable device logging:

```
switch:admin> nsdevlog --disable
Device History Logging disabled
```

To display the NS device log for an event:

```
switch:admin> nsdevlog --show -event "FPORT Entry"
date/time                slot/port  PID      Port WWN                \
     Node WWN                 event
=====================================================================
Wed Jun 27 11:24:33.608   2/12   0x034c00  30:11:00:05:1e:0f:9c:6a \
     20:11:00:05:1e:0f:9c:6a  FPORT Entry
```

```
Wed Jun 27 11:24:33.881   2/11   0x034b00  30:1c:00:05:1e:0f:9c:6a \
      20:1c:00:05:1e:0f:9c:6a   FPORT Entry
Wed Jun 27 11:24:34.028   7/28   0x039c00  20:0c:00:05:1e:06:c3:1a  \
      10:00:00:05:1e:06:c3:1a   FPORT Entry
Wed Jun 27 11:24:34.048   7/29   0x039d00  20:08:00:05:1e:06:c3:1a \
      10:00:00:05:1e:06:c3:1a   FPORT Entry
Total number of Logged entries = 133
Total number of Entries displayed = 4
Max number of entries: 65536
Device Logging is currently disabled
```

To clear device logs:

```
switch:admin> nsdevlog --clear
Device History logs cleared
```

To display device logs:

```
switch:admin> nsdevlog --show
Total number of Logged entries = 0
Total number of Entries displayed = 0
Max number of entries: 65536
Device Logging is currently disabled
```

See Also

nsAliasShow, nsAllShow, nsCamShow, nsShow, nsZoneMember

nsShow

Displays local Name Server (NS) information.

Synopsis

nsshow [**-r**] [**-t**]

Description

Use this command to display local NS information about devices connected to a switch. If no information is available for the switch, the command displays the following message: "There is no entry in the Local Name Server."

Use **nsAllShow** to display NS information for all switches in the fabric.

Each line of output displays the following information:

Type

Displays U for unknown, N for N_Port, NL for NL_Port.

PID

Displays the 24-bit Fibre Channel address of the device.

COS

Displays the Class of Service levels supported by the device. This can be class 1, class 2, or class 3. The command displays only the numeric values, 1, 2, and/or 3. A device can support multiple CoS levels.

PortName

Displays the device port world wide name (WWN).

NodeName

Displays the device node WWN.

SCR

Displays the state change registration of the device. This value indicates what type of RSCN a device registers to receive. Values include the following:

SCR=0x00000000 ('None')

No Registration reserved for any RSCN function.

SCR=0x00000001 ('Fabric-Detected')

Fabric detected registration. Register to receive all RSCN requests issued by the fabric controller for events detected by the fabric.

SCR=0x00000002 ('Nx-Port-Detected')

NX_Port detected registration. Register to receive all RSCN requests issued for events detected by the affected NX_Port.

SCR=0x00000004 ('Fabric-Name')

Fabric Name change registration (FC Standard variant). Register to receive an RSCN when the Fabric Principal switch changes.

SCR=0x00000008 ('Peer-Zone')

Peer Zone change registration. Register to receive an RSCN when an associated Peer Zone changes.

The following SCR values use the 4th byte of the SCR value and can coexist with the SCR values of 0x00000000, 0x00000001, 0x00000002, 0x00000004, and 0x00000008.

SCR=0x01000000 ('Brocade-Principal-Switch')

Principal switch RSCN registration. Register to receive proprietary RSCN (principal switch change).

SCR=0x02000000 ('Brocade-QoS')

AG_QOS RSCN registration (proprietary).

Device type

Displays the device type. The device type is defined in terms of two attributes. The first attribute indicates the origination of the device as one of the following:

Physical

The device is connected to the NX_Port, using FLOGI to log in to the switch.

Virtual

The device is contrived by the switch.

NPV

The device is connected to the NX_Port, using FDISC to log in to the switch.

iSCSI

The device is connected to the iSCSI port.

The second attribute indicates the role of the device. Valid role attributes include the following:

Unknown (initiator/target)

> Device role is not detected

Initiator

> An iSCSI initiator.

Target

> An iSCSI target.

Initiator+Target

> Both an iSCSI initiator and an iSCSI target.

NodeSymb

> Displays the symbolic node name.

Fabric Port Name

> Displays the F_Port WWN to which the N_Port connects.

Permanent Port Name

> Displays the physical N_Port or NL_Port WWN.

Port Index

> Displays the index number of the physical N_Port to which the device connects.

Share Area

> Displays "Yes" for either shared area or 10-bit area; otherwise displays "No".

Redirect

> Displays "Yes" if the device is involved in frame redirection; otherwise displays "No". The device involved in frame redirection is specified as either "virtual" , "host", or "target".

Partial

> Displays "Yes" if the device entry is incomplete; otherwise displays "No". Devices that are incomplete are displayed by the **nsShow** and **nsCamShow** commands, and have routing established, but are not considered during device discovery (for example, during FC-GS Name Server Queries).

LSAN

> Displays "Yes" if the device is currently part of an active LSAN zone; otherwise displays "No".

FCoE

Displays "Yes" if the device is an FCoE device.

FC4 Features

Displays the FC-4 Features registered with the name server.

Device link speed

Displays the link speed of the device, for example: 4G, 8G, 16G and 32G. Link speed of end devices that log in to the edge fabric through F_Port trunk display the bandwidth of the F_Port trunk. For example, if an 8Gb/s host attached to AG login to fabric through a 32Gb/s F_Port trunk, the device link speed for the 8Gb/s host is displayed as 32G.

Connected through AG

Displays "Yes" if the devices in the fabric are connected through Access Gateway.

Real device behind AG

Displays "Yes" if any real device is connected behind the Access Gateway device.

Port Properties

Displays a list of port properties, for example: "SIM Port" for SIM ports If no properties are assigned, the field is not displayed.

The following information is displayed only if the device has registered the information (for example, the switch automatically registers SCSI inquiry data for FCP target devices):

- FC4s supported

- IP address

- Port and node symbolic names

- FC4 Features supported

- Port address or port IP address

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following optional operands:

-r

Deprecated.

-t

      Displays the device type. (Deprecated)

Examples

To display local NS information:

```
switch:user> nsshow
{
  Type Pid     COS      PortName             NodeName              SCR(sec)
N    010800;   2,3;30:03:50:eb:1a:bb:6c:fd;10:00:50:eb:1a:bb:6c:fd;
0x0000000f
    SCR: Fabric-Detected Nx-Port-Detected Fabric-Name Peer-Zone
    FC4s: FCP FC-NVMe Application-Services
    Fabric Port Name: 20:08:c4:f5:7c:00:a3:20
    Permanent Port Name: 30:03:50:eb:1a:bb:6c:fd
    Device type: Physical Initiator
    Port Index: 8
    Share Area: No
    Redirect: No
    Partial: No
    LSAN: No
    Slow Drain Device: No
    Device link speed: 16G
    Connected through AG: No
    Real device behind AG: No
    FCoE: No
    FC4 Features [FCP]: Initiator
    FC4 Features [FC-NVMe]: Initiator Discovery-Service
```

See Also

nsAllShow, nsAliasShow, nsCamShow, switchShow

nsZoneMember

Displays the information on online devices zoned with a specified device.

Synopsis

```
nszonemember pid | wwn
nszonemember -a | -n | -u
nszonemember [-domain domain] [-index index]
nszonemember --help
```

Description

Use this command to display information on all online devices zoned with the specified device. The device can be specified by WWN or Port ID (PID). Use this command with the **-u** option to display all unzoned devices in the entire fabric. Use the **-a** option to display online zoned device data for each local device. Use the **-domain** and **-index** options to display zoned device data for a device (either local or remote) in the fabric with the specified domain and port index combination. If a domain is not specified, device data for a local device with the specified port index is displayed.

The command output displays the following information:

Type

U - known, N - N_Port, NL - NL_Port.

Pid

The 24-bit Fibre Channel address.

COS

A list of classes of service supported by the device.

PortName

The device's port world wide name (WWN).

NodeName

The device's node WWN.

Permanent Port Name

The physical N_Port or NL_Port WWN.

DeviceType

The device type.

Port Index

The index of the port to which the device is attached.

Shared Area

Whether or not the device shares an area with other devices and/or has a 10-bit-area address.

Additional lines may display if the device has registered any of the following information (the switch automatically registers SCSI inquiry data for FCP target devices):

- FC4 supported

- IP address (node)

- IPA

- port and node symbolic name (local device only)

- fabric port name

- hard address or port IP address

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

PID | WWN

Specifies the port ID or WWN of the device for which to display zoned devices.

-a

Displays each local device's online zoned device data, including the device PID and zone alias.

-n

Displays each local device's online zoned device data including the device PID.

-u

Displays all unzoned devices in the entire fabric. The device data includes the device PID and zone alias.

-domain *domain*

> Displays zoned device data for a device (either local or remote) with the specified domain.

-index *index*

> Displays zoned device data for a device (either local or remote) with the specified port index.

--help

> Displays the command usage.

Examples

To display information about all the online devices zoned with the given device:

```
switch:admin> nszonemember 0x0416e2
3 local zoned members:

Type Pid COS    PortName                  NodeName                SCR
NL 041901;2,3;10:00:00:00:c9:26:0e:ae;20:00:00:00:c9:26:0e:ae; 3
    Fabric Port Name: 20:09:00:60:69:50:06:78
    Permanent Port Name: 10:00:00:00:c9:26:0e:ae
    Device type: Physical Initiator
NL 0416e2;3;22:00:00:20:37:d9:6b:b3;20:00:00:20:37:d9:6b:b3; 0
    FC4s: FCP [SEAGATE ST318304FC      0005]
    Fabric Port Name: 20:06:00:60:69:50:06:78
    Permanent Port Name: 22:00:00:20:37:d9:6b:b3
    Device type: Physical Target
NL 0416e4; 3;22:00:00:20:37:d9:61:ac;20:00:00:20:37:d9:61:ac; 0
    FC4s: FCP [SEAGATE ST318304FC      0005]
    Fabric Port Name: 20:06:00:60:69:50:06:78
    Permanent Port Name: 22:00:00:20:37:d9:61:ac
    Device type: Physical Target

     No remote zoned members
```

To display information about all the online devices zoned with the given WWN:

```
switch:admin> nszonemember 10:00:00:00:c8:23:0b:ad
3 local zoned members:

Type Pid  COS     PortName             NodeName             SCR
NL 041901;2,3;10:00:00:00:c9:26:0e:ae;20:00:00:00:c9:26:0e:ae;3
    Fabric Port Name: 20:09:00:60:69:50:06:78
    Permanent Port Name: 10:00:00:00:c9:26:0e:ae
    Device type: Physical Initiator
NL 0416e2; 3;22:00:00:20:37:d9:6b:b3;20:00:00:20:37:d9:6b:b3; 0
    FC4s: FCP [SEAGATE ST318304FC      0005]
    Fabric Port Name: 20:06:00:60:69:50:06:78
    Permanent Port Name: 22:00:00:20:37:d9:6b:b3
    Device type: Physical Target
```

```
NL 0416e4; 3;22:00:00:20:37:d9:61:ac;20:00:00:20:37:d9:61:ac; 0
    FC4s: FCP [SEAGATE ST318304FC       0005]
    Permanent Port Name: 22:00:00:20:37:d9:61:ac
    Device type: Physical Target

     No remote zoned members
```

To display all the unzoned devices in the fabric:

```
 switch:admin> nszonemember -u
  Pid: 0xb01ea9;    Aliases: trimm32b_1
  Pid: 0xb01eaa;    Aliases: trimm32b_2
  Pid: 0xb01eab;    Aliases: trimm32b_3
  Pid: 0xb01eac;    Aliases: trimm32b_4
  Pid: 0xb01fad;    Aliases: trimm32a_5
  Pid: 0xb01fae;    Aliases: trimm32a_6
  Pid: 0xb01fb1;    Aliases: trimm32a_7
  Pid: 0xb01fb2;    Aliases: trimm32a_8
  Pid: 0xdc2800;    Aliases:
  Totally 9 unzoned devices in the fabric.
```

To display each local device's online zoned device data:

```
 switch:admin> nszonemember -a
Port: 4 Pid: 0xb00400    Aliases: ix360_131_201_6a
    Zoned Members: 2 devices
           Pid: 0xb00400  Aliases: ix360_131_201_6a
           Pid: 0xba1ee8  Aliases: trimm101b_3

Port: 12  Pid: 0xb00c01   Aliases: dl360_130159a
    Zoned Members: 2 devices
           Pid: 0xb00c01  Aliases: dl360_130159a
           Pid: 0xbd1bef  Aliases: nstor4b_8

Port: 13  Pid: 0xb00d00    Aliases: ix360_131_196p5
    Zoned Members: 2 devices
           Pid: 0xb00d00   Aliases: ix360_131_196p5
           Pid: 0xe07d00   Aliases: hds9200_6p4 hds9200_6p4

Port: 14  Pid: 0xb00e00   Aliases: dl360_130251a dl360_130251a
    Zoned Members: 2 devices
           Pid: 0xb00e00   Aliases: dl360_130251a dl360_130251a
           Pid: 0xba1ae4   Aliases: trimm100a_2
```

To display device data for a local device with the specified port index:

```
switch:admin> nszonemember -index 2
Port Index: 2 Pid: 0x015200
    Zoned Members: 2 devices
           Pid: 0x015200    Aliases: ali_b1
           Pid: 0x03a840    Aliases: ali_b1
```

To display zoned device data for a device (either local or remote) in the fabric with the specified domain and port index:

```
switch:admin> nszonemember -domain 3 -index 168
Port Index: 168  Pid: 0x03a840
```

```
         Zoned Members: 2 devices
             Pid: 0x03a840    Aliases: ali_z1
             Pid: 0x015200    Aliases: ali_z1
```

See Also

cfgShow, nsCamShow, nsShow

nsZoneShow

Displays the zone names.

Synopsis

```
nszoneshow -pid pid
nszoneshow -wwn wwn
nszoneshow -pid "pid1,pid2"
nszoneshow -wwn "wwn1,wwn2"
```

Description

Use this command to display the zone names that a specified device or device-pair are part of.
The devices can be zoned as part of regular zones, Traffic Isolation (TI) zones, or Frame
Redirect (RD) zones.

- If you specify a single Port ID (PID) or world wide name (WWN), the command displays
  the names of the regular zones, RD zones, or TI zones that the devices belong to.

- If you specify a PID pair or WWN pair, the command displays the names of the common
  zones (regular, RD or TI zones) that the device pairs share.

- For devices zoned as part of an RD zone, the command displays the following informa-
  tion:
  – If you specify the PID or WWN pair for a given host and virtual target (VT) pair, the
    command displays the RD zone name.
  – If you specify the PID or WWN pair for a given virtual host (VI) and target pair, the
    command displays the RD zone name.
  – If you specify the PID or WWN for a given VI or VT, the command displays the RD
    zone name.
  – If you specify the PID or WWN pair for a given host and target pair, the command
    displays the regular zone name and the RD zone name.
  – If you specify the PID or WWN for a given host or target, the command displays the
    regular zone name and the RD zone name.

The host, target, VI and VT are specified while creating zones using the **zone** command.
The RD zone names will start with the prefix 'red_0917'. You can use the **cfgshow** or the
zone --show command to view the zone configuration information.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place.
Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

-pid *pid*

>   Displays the zone names that the PID belongs to.

-wwn *wwn*

>   Displays the zone names that the WWN belongs to.

-pid "*pid1***,***pid2***"**

>   Displays the zone names of the common zones where both PIDs are zoned together.

-wwn "*wwn1***,***wwn2***"**

>   Displays the zone names of the common zones where both WWNs are zoned together.

Examples

>   To display the zone names for a device with a specified PID:

```
switch:admin> nszoneshow -pid 0x010200
Zone Names
================
zn_test1
zn_test2
================
```

>   To display the common zone for two devices specified by a WWN pair:

```
switch:admin> nszoneshow \
wwn "20:08:00:05:1e:a3:01:d9,20:01:00:05:1e:a3:01:d9"
Zone Names
================
zn_test2
================
```

>   To display the RD zone name:

```
switch:admin> cfgshow
Defined configuration:
cfg: myHTcfg myHostTarget
cfg: r_e_d_i_r_c__fg
red_____base;
red_0917_00_3f_3f_3f_23_24_25_26_3f_3f_3f_30_32_00_00_00
zone: myHostTarget
00:3f:3f:3f:23:24:25:26; 3f:3f:3f:30:32:00:00:00
zone:red_0917_00_3f_3f_3f_23_24_25_26_3f_3f_3f_30_32_00_00_00
00:3f:3f:3f:23:24:25:26; 3f:3f:3f:30:32:00:00:00;
3f:3f:3f:30:30:00:00:00; 3f:3f:3f:30:31:00:00:00
zone: red_____base
00:00:00:00:00:00:00:01; 00:00:00:00:00:00:00:02;
00:00:00:00:00:00:00:03; 00:00:00:00:00:00:00:04
switch:admin> nszoneshow wwn 00:3f:3f:3f:23:24:25:26

Zone Names
```

```
=====================
myHostTarget
red_0917_00_3f_3f_3f_23_24_25_26_3f_3f_3f_30_32_00_00_00
=====================
```

See Also

cfgShow, zone, nsZoneMember

openSource

Displays open-source licenses.

Synopsis

```
opensource
```

Description

Displays listing of open source elements, licenses, and code samples used in Fabric OS. Refer to the Linux documentation for more information on how to use this command.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To display open-source licenses:

```
switch:user> opensource
In compliance with open source licensing requirements Brocade
publishes open source information in the following location:
http://www.brocade.com/support/oscd
Also included in this file is a list of all open source licences
associated with this release of the Fabric Operating System.
=========================================================
License Text for apache 1.3.31
Relative path to license text file: LICENSE
=========================================================
/*
 ====================================================================
 * The Apache Software License, Version 1.1
 *
 * Copyright (c) 2000-2002 The Apache Software Foundation. All rights
 * reserved.
 *
 * Redistribution and use in source and binary forms, with or without
 * modification, are permitted provided that the following conditions
 * are met:
 *
 * 1. Redistributions of source code must retain the above copyright
 * notice, this list of conditions and the following disclaimer.
 *
```

```
* 2. Redistributions in binary form must reproduce the above copyright
* notice, this list of conditions and the following disclaimer in
* the documentation and/or other materials provided with the
* distribution.
*
* 3. The end-user documentation included with the redistribution,
* if any, must include the following acknowledgment:
* "This product includes software developed by the
* Apache Software Foundation (http://www.apache.org/)."
* Alternately, this acknowledgment may appear in the software itself,
* if and wherever such third-party acknowledgments normally appear.
*
Type <CR> or <SPACE BAR> to continue, <q> to stop
(output truncated)
```

See Also

aliShow

passwd

Changes the password for a specified user.

Synopsis

```
passwd
      [user_account]
      [-old old_password]
      [-new new_password]
```

Description

Use this command to change a user account password.

Passwords can be changed locally on any switch. For the password database to be distributed to other switches in the fabric, the switches must be configured to accept the password database with the **fddCfg** command. The password database is distributed manually with the **distribute** command.

If AAA authentication is enabled, password change is blocked for users changing their own password. Administrators with the privilege to change passwords for other accounts may do so regardless of whether AAA authentication is enabled; all such password changes operate on the local password database.

The **passwd** command cannot be run on the Standby CP. When an admin account or a SecurityAdmin account changes the password for other accounts, it does not prompt for the current password, unless the target account is a root account.

Any chosen password must satisfy the following password strength rules:

•   Password contains the minimum required number of lowercase characters.

•   Password contains the minimum required number of uppercase characters.

•   Password contains the minimum required number of numeric characters

•   Password contains the minimum required number of punctuation characters.

•   Password must be between *minlength* and 40 characters long. The *minlength* parameter is set with the **passwdCfg** command.

•   Password may not contain the colon (:) character.

•   Password must satisfy repeated and sequential character constraints.

The password history policy is enforced across all user accounts when the user is setting his own password. The password history policy is not enforced when an administrator sets a password for another user, but the user's password history is preserved and the password set by the administrator is recorded in the user's password history.

The **passwd** command behaves as follows:

•   If you are changing your own password, you are prompted to enter the old password and, if your entry is valid, you are prompted to enter the new password. Alternately, you may specify the old and new password on the command line.

- • If a you are changing another user's password with greater privileges than your current login level, you are prompted to enter that user level's old password and, if your entry is valid, you are prompted for a new password.

- • If you are logged in as the root user when changing another user's password, you are not prompted to enter the old password. If you are an admin or SecurityAdmin account, you are not prompted to enter the current password unless the target account is root.

- • Changing the password of any user level causes the login session of that account (if logged in) to terminate.

When invoked without an operand, this command changes the password for the current user account.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

The following operand is optional:

user_account

Specifies the user account for which the password is to be changed. The user account must be an existing account, either default or user-created. Only users with accounts of type "root", "SecurityAdmin", or "admin" can execute this operand and have permission to change passwords for accounts other than their own. You must login as root, to change password for admin user for the first time.

-old *old_password*

Specifies the old password. This operand is optional; if omitted, the command interactively prompts for the old password.

-new *new_password*

Specifies the new password. This operand is optional; if omitted and only the old password is specified on the command line, the command interactively prompts for the new password.

Diagnostics

The system may generate one or more of the following error messages. Refer to the *Brocade Fabric OS Message Reference Manual* for more diagnostic information.

RADIUS enabled error

Password change disallowed, RADIUS authentication is enabled.

Password error

Password length, strength, or history policy not met.

"User" is not a valid user name

You have not specified a valid recognized user name on the system.

Permission denied

You do not have permission to change the password for the specified user.

Incorrect password

You have not entered the correct password when prompted for the old password.

Password unchanged

You have entered the carriage return special input case, choosing not to change the password.

Passwords do not match

You have not correctly verified the new password.

Invalid length of password

You have entered a password length that is not between minlength and 40.

Insufficient number of lower case letters

The password you entered contains less than the minimum required number of lower-case characters.

Insufficient number of upper case letters

The password you entered contains less than the minimum required number of upper-case characters.

Insufficient number of digits in password

The password you entered contains less than the minimum required number of numeric characters.

Insufficient number of punctuation characters

You have entered a password that contains less than the minimum required number of punctuation characters.

Password matches one of the previous passwords

The password you entered matches one of the previous passwords.

You must wait longer to change your password

You cannot change the password before the minimum aging period expires.

Password contains invalid characters

The password you entered contains invalid characters.

Examples

To change the password for the admin account while logged in as admin:

```
switch:admin> passwd
Changing password for admin
Enter new password:
Re-type new password:
Password changed.
Saving password to stable storage.
Password saved to stable storage successfully.
```

To change the password for user "admin" from an admin account noninteractively:

```
switch:admin> passwd -old password -new adminpass
Password changed.
Saving password to stable storage.
Password saved to stable storage successfully.
```

To change the password for user "brocadeUser" from an admin account noninteractively:

```
switch:admin> passwd brocadeUser -old brcdPasswd -new mynewPasswd
Password changed.
Saving password to stable storage.
Password saved to stable storage successfully.
```

See Also

login, logout, passwdCfg

passwdCfg

Manages the password policies.

Synopsis

```
passwdcfg --set options value
passwdcfg --setuser username options value
passwdcfg --disableadminlockout
passwdcfg --enableadminlockout
passwdcfg --setdefault
passwdcfg --showall
passwdcfg --showuser username
passwdcfg --deleteuser username
passwdcfg --deleteuser -all
passwdcfg --hash md5 | sha256 | sha512 [-manual]
passwdcfg --showhash [username | -all]
passwdcfg --help
```

Description

Use this command to manage password policies.

Use **--set** to configure the following password policies:

• Password strength policy

• Password history policy

• Password expiration policy

• Account lockout policy

Password Strength Policy

The *password strength policy* enforces a set of rules that new passwords must satisfy.
Configurable rules include lowercase and uppercase characters, numbers, punctuation
occurrences and minimum length values. It is enforced only when a new password is defined.
The password strength policy is enforced cross all user accounts. When a password fails more
than one of the strength attributes, an error is reported for only one of the attributes at a time.

Password History Policy

The *password history policy* prevents reuse of a recently used password. The password history
policy is enforced across all user accounts when users are setting their own password. It is not
enforced when an administrator sets a password for another user, but the user's password
history is preserved and the password set by the administrator is recorded in the user's
password history.

Password Expiration Policy

The *password expiration policy* forces expiration of a password after a specified period of time.
When a user's password expires, the user must change the password to complete the
authentication process. A warning that password expiration is approaching is displayed when
the user logs in. The number of days prior to password expiration during which warnings
commence is a configurable parameter. Password expiration does not disable or lock out the

account. The password expiration policy is enforced across all user accounts except the root account.

Account Lockout Policy

The *account lockout policy* disables a user account when the user exceeds a configurable number of failed login attempts. The mechanism can be configured to keep the account locked until explicit administrative action is taken to unlock the account or locked accounts can be automatically unlocked after a specified period. An administrator can unlock a locked account at any time. Note that the *account locked* state is distinct from the *account disabled* state. The account lockout policy is enforced across all user accounts except the root and SecurityAdmin role accounts. A separate configuration option, available to the SecurityAdmin and Admin role accounts, may be used to enable and disable applications of the account lockout policy to Admin role accounts.

A failed login attempt counter is maintained for each user on each switch instance. The counters for all user accounts are reset to zero when the account lockout policy is enabled. The counter for an individual account is reset to zero when the account is unlocked after the lock-out duration period expires.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command takes as input an operand and its associated arguments. When invoked without operands, the command prints the usage.

--showall

Displays the password configuration parameters.

--showuser *username*

Displays the password configuration parameters for a specific user.

--setdefault

Resets all password policies to their default values.

--set

Configures a specified password policy. All the options are case-sensitive.

-charset *value*

Specifies the minimum criteria on the character set (upper and lowercase letters and special characters) to be used in the password. The default value is 0. The maximum value must be less than or equal to the **-minlength** value.

-allowuser [yes|no]

> Activates (no) or deactivates (yes) the validation check to determine if the username is used in the password. If activated, the username both in forward and reverse direction cannot be used in the password. For example, if username is "testuser", the password "testuser123" or "resutset567" is not allowed. The default value is "yes".

-lowercase *value*

> Specifies the minimum number of lowercase alphabetic characters that must occur in the password. The default value is 0. The maximum value must be less than or equal to the **-minlength** *value*.

-uppercase *value*

> Specifies the minimum number of uppercase alphabetic characters that must occur in the password. The default value is 0. The maximum value must be less than or equal to the **-minlength** *value*.

-digits *value*

> Specifies the minimum number of numeric digits that must occur in the password. The default value is 0. The maximum value must be less than or equal to the **-minlength** *value*.

-punctuation *value*

> Specifies the minimum number of punctuation characters that must occur in the password. All displayable, non-alphanumeric punctuation characters, except the colon (:), are allowed. The default value is 0. The maximum value must be less than or equal to the **-minlength** *value*.

-minlength *value*

> Specifies the minimum length of the password. The minimum can be set anywhere between 8 and 40 characters. The default value is 8. The total of **-lowercase**, **-uppercase**, **-digits**, **-punctuation** must be less than or equal to **-minlength** *value*. Also, the total of **-digits** and **- charset** must be less than or equal to **-minlength** *value*.

-history *value*

> Specifies the number of past password values that are disallowed when setting a new password. A value of 0 to 24 can be specified. The default value is 1.

-minDiff *value*

> Specifies the number of character difference expected between the old and the new password. The configuration range of **-minDiff** must be set between 0 to 40 and less than the configured **-minlength** *value*. When the default value 0 is set, the password similarity check is disabled while the other password policies are validated.

-minpasswordage *value*

> Specifies the minimum number of days that must elapse before a password can be changed. **-minpasswordage** can be set at 0 to 999. The default value is 0. Setting this parameter to a nonzero value discourages a user from rapidly changing a password in order to defeat the password history setting to reuse a recently used password. The **minpasswordage** policy is not enforced when an administrator changes the password for another user.

-maxpasswordage *value*

> Specifies the maximum number of days that can elapse before a password must be changed. This is the password expiration period. **-maxpasswordage** can be set at 0 to 999. Setting this parameter to 0 disables password expiration. The default value is 0. When **-maxpasswordage** is set to a nonzero value, **-minpasswordage** must be set to a value less than or equal to **-maxpasswordage**.

-warning *value*

> Specifies the number of days prior to password expiration that a warning of password expiration is displayed. The valid range for **-warning** is 0 to 999. The default value to 0.

-lockoutthreshold *value*

> Specifies the number of times a user can specify an incorrect password during login before the account is locked. The number of failed login attempts is counted from the last successful login. Values for **-lockoutthreshold** range from 0 to 999. Setting this parameter to 0 disables the lockout mechanism. The default value is 0.

-lockoutduration *value*

> Specifies the time, in minutes, after which a previously locked account automatically unlocks. **lockoutduration** values range from 0 to 99999. The default value is 30. Setting this parameter to 0 disables lockout duration, requiring an administrative action to unlock the account. The lockout duration begins with the first login attempt after the lockout threshold has been reached. Subsequent failed login attempts do not extend the lockout period.

-repeat *value*

> Specifies the length of repeated character sequences that will be disallowed. For example, if the "repeat" value is set to 3, a password "passAAAword" is disallowed because it contains the repeated sequence "AAA". A password of "passAAword" would be allowed because no repeated character sequence exceeds two characters. The range of allowed values is 1 to 40.

-sequence *value*

> Specifies the length of sequential character sequences that will be disallowed. In a character sequence, the ASCII value of each contiguous character differs by one. The ASCII value for the characters in the sequence must all be increasing or decreasing. For example, if the "sequence" value is set to 3, a password "passABCword" is disallowed because it contains the sequence "ABC". A password of "passABword" would be allowed

because no repeated character sequence exceeds two characters. The range of allowed values is 1 to 40. The default value is 1.

-reverse [1|0]

Activates (1) or deactivates (0) the validation check to determine whether the password is an exact reverse string of the username.

-oldpasswd [1|0]

Enables or disables old password check while changing password for the root account using the **passwd** command.

-expire

Expires the password for all the users except the root account. The user will be prompted for a password change on the next successful login.

--setuser *username*

Configures the password policy for a specific user.

-minpasswordage *value*

Specifies the minimum number of days that must elapse before a password can be changed. **-minpasswordage** can be set at 0 to 999. The default value is 0. Setting this parameter to a nonzero value discourages a user from rapidly changing a password in order to defeat the password history setting to reuse a recently used password. The **minpasswordage** policy is not enforced when an administrator changes the password for another user.

-maxpasswordage *value*

Specifies the maximum number of days that can elapse before a password must be changed. This is the password expiration period. **-maxpasswordage** can be set at 0 to 999. Setting this parameter to 0 disables password expiration. The default value is 0. When **-maxpasswordage** is set to a nonzero value, **-minpasswordage** must be set to a value less than or equal to **-maxpasswordage**.

-warning *value*

Specifies the number of days prior to password expiration that a warning of password expiration is displayed. The valid range for **-warning** is 0 to 999. The default value to 0.

-expire

Expires the password for the specified user. The user will be prompted for a password change on the next successful login.

--enableadminlockout

Enables the admin lockout policy and sets the config parameter "passwdcfg.admin-lockout" to 1. If the parameter "passwdcfg.lockoutthreshold" is set to greater than 0 and

Admin Lockout policy is enabled, then, if the number of failed login attempts from the last successful login equals the "passwdcfg.lockoutthreshold", the account gets locked for the "passwdcfg.lockoutduration" duration. The particular account is unlocked manually using **userconfig --change** *account_name* **-u** or it is automatically unlocked after "passwdcfg.lockoutduration" duration.

--disableadminlockout

Disables the admin lockout policy if already enabled and sets the config parameter "passwdcfg.adminlockout" to 0. By default, admin lockout policy is disabled.

--deleteuser *username*

Removes the password expiration polices for a particular user account.

--deleteuser -all

Removes the password expiration policies of all users.

--hash md5 | sha256 | sha512

Sets the hash type. Valid values are "md5", "sha256", or "sha512". After password hash type is configured on switch, you will be prompted to change the passwords on the next login if hash type of password is different from the configured hash type on switch.

-manual

Requires manual password change.

--showhash [*username* **| -all]**

Displays password hash configuration for the given user or all users. When executed without optional parameters, this command displays the password hash configured in the system.

--help

Displays the command usage.

Diagnostics

The **passwdCfg** command may fail for any of the following reasons:

Permission failure

You not permitted to execute the command.

Invalid command line option

An unrecognized command line option was specified.

Minlength value out of range

The **-minlength** *value* must be between 8 and 40.

Lowercase value out of range

The **-lowercase** *value* specified must be greater than or equal to 0 and less than or equal to **-minlength** *value*.

Uppercase value out of range

The **-uppercase** *value* specified must be greater than or equal to 0 and less than or equal to **-minlength** *value*.

Digits value out of range

The **-digits** *value* specified must be greater than or equal to 0 and less than or equal to **-minlength** *value*.

Punctuation value out of range

The **-punctuation** *value* specified must be greater than or equal to 0 and less than or equal to **-minlength** *value*.

Total strength specification out of range

The total of **-lowercase** *value*, **-uppercase** *value*, **-digits** *value*, and **-punctuation** *value* must be less than or equal to **-minlength** *value*.

History value out of range

The **-history** *value* must be between 0 and 24.

Minpasswordage value out of range

The **-minpasswordage** *value* must be between 0 and 999.

Maxpasswordage value out of range

The **-maxpasswordage** *value* must be between 0 and 999.

Warning value out of range

The **-warning** *value* must be between 0 and 999.

Invalid password expiration specification

The **-minpasswordage** *value* or **-warning** *value* must be less than or equal to **-maxpasswordage** *value* when **-maxpasswordage** *value* is nonzero.

Lockoutthreshold value out of range

The **-lockoutthreshold** *value* must be between 0 and 999.

Lockoutduration value out of range

The **-lockoutduration** *value* must be between 0 and 99999.

Repeat value out of range

The -**repeat** *value* must be between 1 and 40.

Sequence value out of range

The **-sequence** *value* must be between 1 and 40.

Specified user account not exist

The user does not exist in the local switch.

Per user password expiration policy not configured

The password expiration policy is not configured for this user.

Not applicable for default account

The password expiration policy is not applicable for the root account.

Password strength policy is allowed for per user password configurations

The password configuration is allowed only for the password expiration policy.

Minimum difference value out of range

The **-minDiff** *value* specified must be greater than or equal to 0 and less than or equal to **-minlength** *value*.

Examples

To display the current password configuration parameters:

```
switch:admin> passwdcfg --showall
passwdcfg.minlength: 8
passwdcfg.lowercase: 0
passwdcfg.uppercase: 0
passwdcfg.charset: 0
passwdcfg.allowuser: Yes
passwdcfg.digits: 0
passwdcfg.punctuation: 0
passwdcfg.history: 1
passwdcfg.minpasswordage: 0
passwdcfg.maxpasswordage: 0
passwdcfg.warning: 0
passwdcfg.lockoutthreshold: 0
passwdcfg.lockoutduration: 30
passwdcfg.adminlockout: 0
passwdcfg.repeat: 1
```

```
passwdcfg.sequence: 1
passwdcfg.status: 0
passwdcfg.reverse: 0
passwdcfg.oldpasswd: 0
passwdcfg.minDiff: 0
```

To set password configuration parameters, specifying that a password must contain at least two uppercase characters, and that passwords expire in 90 days from the date they are defined:

```
switch:admin> passwdcfg --set -uppercase 2  \
     -maxpasswordage 90
```

To set user password expiration policy parameters:

```
switch:admin> passwdcfg --setuser admin -minpasswordage 2 \
     -maxpasswordage 5 -warning 3
```

To expire the password for all the users except root:

```
switch:admin> passwdcfg --set -expire
```

To display the current user password expiration policy parameters:

```
switch:admin> passwdcfg --showuser admin
passwdcfg.maxpasswordage.admin: 5
passwdcfg.minpasswordage.admin: 2
passwdcfg.warning.admin: 3
```

To delete all password configurations:

```
switch:admin> passwdcfg --deleteuser -all
All user password configurations are removed
```

To delete password configurations of a specific user:

```
switch:admin> passwdcfg --deleteuser admin
The user(admin) password configurations are removed
```

To activate password reverse criterion check:

```
switch:admin> passwdcfg --set -reverse 1
```

To expire the password for the specified user:

```
switch:admin> passwdcfg --setuser user -expire
```

To set minimum five characters difference between the old and new password:

```
switch:admin> passwdcfg --set -minDiff 5
```

See Also

passwd, userConfig

pathBwConfig

Controls and displays information about ISL and ICL bandwidth relate features.

Synopsis

```
pathbwconfig
pathbwconfig --enable rebal
pathbwconfig --disable rebal
pathbwconfig --force rebal
pathbwconfig --show rebal [-domain domain_id]
pathbwconfig --clear rebal
pathbwconfig --help
```

Description

Use this command to enable or disable the Interchassis Link (ICL) bandwidth rebalancing and to display the current state of rebalancing.

Notes

ICL Bandwidth balancing is disabled by default. The ICL bandwidth balancing feature provides support to automatically select a set of ICL-based paths to achieve balanced or near balanced available bandwidth on the two core blades. The balancing of available bandwidth is necessary to increase internal resource performance.

Disabling or enabling the balancing feature is persistent across reboot.

ICL bandwidth balancing requires that Dynamic Load Sharing (DLS) is enabled on the switch.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command supports the following operands:

--enable rebal

Enables ICL path rebalancing.

--disable rebal

Disables ICL path rebalancing.

--force rebal

Forces the running ICL path rebalancing immediately.

--show rebal [-domain *domain_id*]

Displays whether ICL rebalancing is enabled or disabled.

--clear rebal

> Resets the ICL bandwidth balancing counters.

--help

> Displays command usage.

Examples

> To enable ICL bandwidth balancing:

```
switch:admin> pathbwconfig --enable rebal
Bandwidth balancing successfully enabled.
```

> To force rebalancing:

```
switch:admin> pathbwcnfig --force rebal
Bandwidth balancing ran successfully
```

> To display whether ICL rebalancing is enabled or disabled:

```
switch:admin> pathbwcnfig --show rebal
State:      Disabled
Last run:   ---
Duration:   ---
Run count:  0


Domain    Slot-5 BW   Slot-8 BW    State
===========================================
1       80          176         Unbalanced
3       176         176         Balanced
160     80          176         Unbalanced
```

> To display whether ICL rebalancing is enabled or disabled for a single domain:

```
switch:admin> pathbwcnfig --show rebal -domain 1
Domain    Core-0 BW   Core-1 BW    State
===========================================
1       80          176          Unbalanced
```

> To reset ICL bandwidth rebalancing counters:

```
switch:admin> pathbwcnfig --clear rebal
ICL bandwidth balancing counters reset successfully
```

See Also

> dlsSet, dlsShow, lsDbShow

pathInfo

Displays routing information and statistics along a path covering multiple switches.

Synopsis

```
pathinfo
pathinfo -f FID dest_switch_domain [source_port] [dest_port]
      [-sid source_pid] [-did dest_pid] [-r] [-t]
pathinfo dest_switch_domain [source_port] [dest_port]
      [-sid source_pid] [-did dest_pid] [-r] [-t]
pathinfo --help
```

Description

Use this command to display routing information from a source port on the local switch to a destination port on another switch. The command output describes the exact data path between these ports, including all intermediate switches.

When using **pathInfo** across fabrics connected through an FC Router, the command represents backbone information as a single hop. The command captures details about the FC Router to which ingress and egress EX_Ports are connected, but it hides the details about the path the frame traverses between the ingress EX_Ports to the egress EX_Ports in the backbone.

To use **pathInfo** across remote fabrics, you must specify both the fabric ID (FID) and the domain ID of the remote switch. You cannot use the command to obtain source port information across remote FCR fabrics. When obtaining path info across remote fabrics, the destination switch must be identified by its Domain ID. Identifying the switch by name or WWN is not accepted.

The command does not retry if there is a timeout or failure. It may fail if a switch along the path is busy or does not support this feature.

If the advanced performance tuning (APT) policy in effect on the intermediate switches is not a port-based policy, subsequent data streams may not take the same path as displayed in the **pathInfo** output. Refer to **aptPolicy** for more information on advanced performance tuning policies.

If you specify an inactive port or a path through a switch that does not have active routing tables to the destination, this command describes the path that would be taken if the ports were active. If you specify a destination port that is not active, this command uses the embedded port as the destination.

The ingress and egress points above 256 are specified as port index. Use **switchShow** for a listing of valid port index numbers.

To display the TI-enabled path across FCR, you must specify both source ID (SID) and destination ID (DID). The DID must be the proxy device ID and you can view the proxy device IDs using the **nsAllShow** command.

In addition, **pathInfo** can provide statistics on every traversed interswitch link (ISL) that is part of the path. This feature is available only in the interactive command mode.

The routing and statistics information are provided by every switch along the path, based on the current routing table information and statistics calculated continuously in real-time. Each switch represents one hop of the total path.

In a Virtual Fabric environment, **pathInfo** displays port numbers beyond physical port numbers while displaying information for a hop that corresponds to a path in the base fabric. The cost for this hop is the cost of the corresponding path in the base fabric plus a small offset. Refer to the Examples section for an illustration.

Other command options allow the collection of information on the reverse path, or on a user-selected path (source route).

For each hop, this command displays the following fields:

Hop

> The hop number. The local switch is hop 0.

In Port

> The port on which the switch receives frames. For hop 0, this is *source_port*. identified by the port index.

Domain ID

> The domain ID of the switch.

Name

> The name of the switch.

Out Port

> The output port that the frames take to reach the next hop. For the last hop, this is *destination_port* identified by the port index.

BW

> The bandwidth of the output interswitch link (ISL), in Gb/s. This parameter does not apply to the embedded port. If the bandwidth is zero, it is displayed as 1Gb/s. For logical interswitch links (LISL) ports, the bandwidth displays as 8Gb/s, the maximum bandwidth on hardware platforms on which LISLs can be formed. In cases where the LISL bandwidth is zero, **pathInfo** displays a bandwidth of 4Gb/s.

Cost

> The cost of the output link used by the fabric shortest path first (FSPF) routing protocol. This parameter applies only if the output link is recognized by FSPF.

You can request more detailed statistics for each hop in addition to the routing information. These statistics are presented for the input and output ports for both receive and transmit modes. You can select basic or extended statistics or both when running **pathInfo** in interactive mode. Statistics are not reported for the embedded port. Some throughput values are reported in multiple time intervals, to describe both current path utilization and the average throughput over a larger period of time.

To collect these statistics, this command uses a special **pathInfo** frame that is sent hop-by-hop from the source switch to the destination switch. To prevent such a frame to loop forever if an error occurs, a maximum number of hops for the frame to traverse is enforced. The hop count

includes all hops in the direct path from source to destination, and also all the hops in the reverse path, if the tracing of the reverse path is requested. The default value for the maximum hop count is 25.

Basic statistics

Basic statistics report parameters that may indicate ISL congestion along the path. They include the following:

B/s

Bytes per second received or transmitted. This value is reported for multiple time periods displayed in parentheses.

Txcrdz

The length of time, in milliseconds, that the port was unable to transmit frames because the transmit BB credit was zero. The purpose of this statistic is to detect congestion or a device affected by latency. This parameter is sampled at 1 millisecond intervals, and the counter is incremented if the condition is true. Each sample represents 1 ms of time with zero Tx BB Credit. An increment of this counter means that the frames could not be sent to the attached device for 1 ms, indicating degraded performance. This value reports for multiple time periods, displayed in parentheses. Note that other commands, such as **portStatsShow**, may express this value in units other than milliseconds.

Extended statistics

Extended statistics report variables of general interest. They include the following:

F/s

The number of frames received or transmitted per second. This value is reported for multiple time periods, displayed in parentheses.

Words

The total number of 4-byte Fibre Channel words.

Frames

The total number of frames.

Errors

The total number of errors that may have caused a frame not to be received correctly. This includes cyclic redundancy check (CRC) errors, bad end-of-frame (EOF) errors, frame truncated errors, frame-too-short errors, and encoding errors inside a frame.

Reverse path

The path from port A on switch X to port B on switch Y may be different from the path from port B to port depending on the links traversed between a given sequence of switches, or the reverse path may involve different switches. The **-r** option displays

routing and statistics information for the reverse path in addition to those for the direct path.

Source route

The source route option allows you to specify a sequence of switches or ports, which the **pathInfo** frame has to traverse to reach the destination. Therefore, the path specified may be different from the one used by actual traffic.

The source route is expressed as a sequence of switches, a sequence of output ports, or a combination of both. The next hop in the source route is described by either the output port to be used to reach the next hop, or the domain ID of the next hop.

The source route can specify a full route from source to destination or a partial route. In a partial route the remaining hops are chosen as the path from the input port on the first hop not listed in the source route to the destination. The maximum hop count is enforced in both cases.

If the source route does not specify all the switches along a section of the path, you can specify a strict or a loose path. A strict source route requires that only the specified switches are reported in the path description. If two switches are specified back-to-back in the source route descriptor but are not directly connected, the switches in-between are ignored. In a loose source route, the switches in-between are reported. The concepts of strict and loose route apply only to the portions of the path described by domains, not to the part described by output ports.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

dest_switch_domain

Specifies the destination switch. To obtain path info in a Layer 2 fabric, the destination switch can be identified by its Domain ID, by the switch WWN, or by the switch name. To obtain path info across remote fabrics connected through an FC Router, the destination switch must be identified by its Domain ID. Identifying the switch by name or WWN is not accepted. This operand is optional; if omitted, the command prompts for input interactively.

source_port

Specifies the port whose path to the destination domain is traced, specified as the port index. The embedded port (-1) is the default. The embedded port can be selected manually by entering the value of MAX_PORT. MAX_PORT stands for the maximum number of ports supported by the local switch.

dest_port

Specifies the port on the destination switch for the path being traced. This operand returns the state of this port. The embedded port (-1) is used by default, or if you specify a destination port that is not active. The destination is specified as the port index.

"-r"

Displays the reverse path in addition to the forward path. This operand is optional.

-t

Displays the command output in traceroute format. When this operand is used, only routing information is displayed. The output includes the time it takes, in microseconds, to reach each hop. Basic and extended statistics are not available in the traceroute format.

-sid *source_pid*

Specifies the source ID of the originator device in "0xDDAAPP" format, where DD is domain ID, AA is area ID and PP is AL_PA ID.

-did *dest_pid*

Specifies the destination ID of the proxy device in "0xDDAAPP" format, where DD is domain ID, AA is area ID and PP is AL_PA ID. You can view the proxy device IDs using the **nsAllShow** command.

--help

Displays the command usage.

When executed without operands, **pathInfo** runs interactively. Specifying a destination switch is required; the values for the source and destination ports can be -1 to indicate the embedded port. You must specify the source and destination PID to display the correct TI-enabled path information across the FCR. Reverse-path tracing is optional. In addition, this command prompts for the following parameters:

Max hops

The maximum number of hops that the **pathInfo** frame is allowed to traverse; the default is 25.

Fabric Id

Specifies the Fabric ID. If unspecified, the value defaults to -1 (Default switch FID 128)

Domain|Wwn|Name

Specifies the domain ID or WWN.

Source port

Specifies the port whose path to the destination domain is traced, specified as the port index. If unspecified, the value defaults to -1 (embedded port).

Destination port

Specifies the port on the destination switch for the path being traced. If unspecified, the value defaults to -1 (embedded port)

Source pid

Specifies the source ID of the originator device in hexadecimal format.

Destination pid

Specifies the destination ID of the proxy device in hexadecimal format.

Basic stats

Whether basic statistics are generated on every link; the default is no.

Extended stats

Whether extended statistics are generated on every link; the default is no.

Trace reverse path

Specifies the path information in reverse direction; the default is no.

Source route

Specifies a sequence of switches or ports that the **pathInfo** frame should traverse; the default is no. If an output port to the next hop is specified, you are not prompted for the domain of the next switch. The domain is determined by the port.

Timeout

The maximum time allowed waiting for the response in milliseconds. The default is 10000 milliseconds.

Examples

To display basic path information to a specific domain in command line mode:

```
switch:admin> pathinfo 91
Target port is Embedded
Hop  In Port  Domain ID (Name)     Out Port  BW    Cost
---------------------------------------------------------
0       E          9 (web226)          2     1G    1000
1       3         10 (web229)          8     1G    1000
2       8          8 (web228)          9     1G    1000
3       6         91 (web225)          E     -     -
```

To display basic path information in traceroute format:

```
switch:admin> pathinfo 91 -t
traceroute to domain 91(web225) , 25 hops
Hop   Domain ID (Name)    time taken for the hop
------------------------------------------------
1    10 (web229)            0.0331 us
```

To display basic path information in traceroute format with reverse path option:

```
switch:admin> pathinfo 4 -r -t

Target port is Embedded

Hop      Domain ID (Name)                Time/hop


--------------------------------------------------------
1         11 (mps_daz_1)               32882 usec
2          4 (METEOR)                  32882 usec
3         11 (mps_daz_1)               32882 usec
4         97 (pulsar055)               32882 usec
```

To display path information when source port and destination port are provided along with the traceroute option:

```
switch:admin> pathinfo 6 12 13 -t

Target port is F_Port

Hop      Domain ID (Name)         Time/hop
-------------------------------------------------
6 (Stealth_I)                     108186 usec
```

To display basic path information to a specific domain in a Virtual Fabric environment (the cost for this hop is the cost of the corresponding path in the base fabric):

```
switch:admin> pathinfo 13 4

Target port is Embedded

Hop   In Port   Domain ID (Name)      Out Port    BW    Cost
------------------------------------------------------------
0      4         9                    2009*       -     1500
1      2015*     10                   8           1G    1000
2      6         13                   E           -     -
```

To display basic and extended statistics in interactive mode:

```
switch:admin> pathinfo
Max hops: (1..127) [25]
Fabric Id: (1..128) [-1]
Domain|Wwn|Name: [] 8
Source port: (0..200) [-1]
Destination port: (0..1800) [-1]
Source pid: (0x0..0xefff00) [ffffffff]
Destination pid: (0x0..0xefff00) [ffffffff]
Basic stats (yes, y, no, n): [no] y
```

```
Extended stats (yes, y, no, n): [no] y
Trace reverse path (yes, y, no, n): [no]
Source route (yes, y, no, n): [no]
Timeout: (1000..30000) [5]
Target port is Embedded


Hop  In Port  Domain ID (Name)     Out Port    BW   Cost
-------------------------------------------------------------
0       E         9 (web226)          2        1G   1000

Port                              E                        2
                  Tx          Rx         Tx        Rx
                 ----------------------------------------
   B/s (1s)       -           -          0          0
   B/s (64s)      -           -          1          1
   Txcrdz (1s)    -           -          0          -
   Txcrdz (64s)   -           -          0          -
   F/s (1s)       -           -          0          0
   F/s (64s)      -           -         2743        0
   Words          -           -       2752748    2822763
   Frames         -           -        219849     50881
   Errors         -           -          -          0
Hop  In Port  Domain ID (Name)     Out Port    BW   Cost
-------------------------------------------------------------
1       3        10 (web229)          12       1G   1000
Port                              3                       12
                  Tx          Rx         Tx        Rx
                 ----------------------------------------
   B/s (1s)       36          76         0          0
   B/s (64s)       5          -          0          -
   Txcrdz (64s)    0          -          0          -
   F/s (1s)        1          1          0          0
   F/s (64s)       0          0          0          0
   Words       240434036   2294316   2119951    2121767
   Frames       20025929    54999    162338      56710
   Errors         -          4          -          0

Hop  In Port  Domain ID (Name)     Out Pot     BW   Cost
-------------------------------------------------------------
2      14         8 (web228)          E        -     -
(output truncated)
```

To display the TI-enabled path information over an FCR in interactive mode:

```
switch:admin> pathinfo
Max hops: (1..127) [25]
Fabric Id: (1..128) [-1] 8
Domain|Wwn|Name: [] 5
Source port: (0..400) [-1] 2
Destination port: (0..400) [-1] 24
Source pid: (0x0..0xefff00) [ffffffff] 0x061600
Destination pid: (0x0..0xefff00) [ffffffff] 0x01f001
Basic stats (yes, y, no, n): [no]
```

```
Extended stats (yes, y, no, n): [no]
Trace reverse path (yes, y, no, n): [no] y
Source route (yes, y, no, n): [no]
Timeout: (1000..30000) [10000]

Target port is Embedded

Hop  In Port  Domain ID (Name)      Out Pot    BW    Cost
---------------------------------------------------------
0    2        1 (web228)            6          4G    500
1    23       2 (web228)            8          4G    500
2    4        3 (web228)            3          4G    500
3    2        4 (web228)            24         4G    10000
4    3        7 (switch_3)          2          4G    500
5    27       5 (switch_3)          24         -     -

Reverse path
6    24       5 (switch_3)          27         4G    500
7    2        7 (switch_3)          3          4G    500
8    24       4 (web228)            2          4G    500
9    3        3 (web228)            4          4G    10000
10   8        2 (web228)            23         4G    500
11   6        1 (web228)            2          -     -
```

See Also

portStatsShow, switchShow

pdShow

Displays data from a panic dump file.

Synopsis

pdshow [*panic_dump_file*]

Description

Use this command to display data from a panic dump file. The panic dump file contains information that might be useful to determine the cause of the system panic.

When executed without any arguments, this command displays output from the latest panic dump file available on the switch.

If a panic dump file is specified as an argument, the contents of that specific file are displayed.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following optional operand:

panic_dump_file

Specify the full path name of a panic dump file.

Examples

To examine a panic dump file by the name *panic_dump* located under the directory */tmp*:

```
switch:admin> pdshow /tmp/panic_dump
        *** CAUTION ***
 *  Host  PLATFORM  (current) is: 'Unknown'
 *  PLATFORM got from pd file is: 'SW12000'
 *  Some results shown may be incorrect and/or missing
 *  It is best if this command is run on same \
    PLATFORM as that of pdfile
            **************


                      ********
────────────────────────           ─────────────────────────
 *   File   :/core_files/panic/core.pd1038932352        *
 *   SECTION:PD_MISC                                     *
----------------------*******-------------------------
WatchDogRegister=0x0
Section=Startup time: Tue Dec  3 16:06:11 UTC 2002
Kernel=      2.4.19
Fabric OS=  v4.1.0_j_dist_1103
```

```
Made on=     Tue Dec 3 19:07:13 2002
Flash=       Tue Dec 3 13:19:06 2002
BootProm=   3.2.0
Section=HA show Output

(output truncated)
```

See Also

portLogDump, supportSave

portAddress

Assigns the lower 16 bits of the Fibre Channel Port ID.

Synopsis

```
portaddress --bind [slot/]port[-port] [16-bit_address] [--auto]
portaddress --unbind [slot/]port[-port]
portaddress --show [[slot/]port]
portaddress --findPID 24-bit_Port_ID
portaddress --help
```

Description

Use this command to bind the 16-bit address to the lower two bytes of a port 24-bit Fibre Channel address, or to unbind the currently bound address for the specified port. Changes effected by this command are persistent across reboots and power cycles.

The port must be offline to bind an address and not currently bound to another address. If the port is currently bound to another address, use this command with the **--unbind** option to unbind the port.

This command returns an error if the chosen address is in use or is bound to another port. If the address is currently assigned to another port, use this command with the **--findPID**option to identify the port that is bound to that address, and then unbind the port.

The command provides a **--show** option that displays the currently bound address for a specified port or for all ports. Alternately, you can use the **--findPID** option to display the port currently bound to a specified port ID (PID).

Notes

This command is supported on the Brocade DCX 8510-8 and DCX 8510-4 on all logical switches including the Default Switch. Virtual Fabrics must be enabled. It is also supported on the Brocade 6510, regardless of Virtual Fabrics status.

This command is not supported on embedded platforms and on the Brocade Analytics Monitoring Platform.

If a blade port is qualified to be in a user-created logical switch on a Brocade DCX 8510-4 or DCX 8510-8, this feature is supported on those ports.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--bind

Assigns the lower two bytes of the Fibre Channel address to the specified port.

slot

> Specifies the slot number on bladed systems, followed by a slash (/).

port[-port]

> Specifies a port or a port range, relative to the slot number on bladed systems, for example, 12/0-2.

16-bit_address

> Specifies the 16-bit address, in hexadecimal format, to be bound to the FC address. Leading zeros are optional in the hexadecimal value (for example, you can either specify 0x1a00 or 1a00). Note that only the upper 10 bits of the PID can be used for a unique route. Therefore, not all addresses in the 16-bit range are available.

--auto

> Enables autobinding on the specified port. If the auto feature is enabled, the entire area field of the PID is bound to a single port. With 10-bit routing, up to 4 ports can share the same 8-bit area field of the PID. This address assignment mode dedicates all four unique routes to a single port. By default, auto is off. This operand is optional; if unspecified, the default is used.

--unbind

> Removes both the address and any automode override configuration from the specified port.

--show

> Displays the currently bound address attributes for the specified port. This command shows the lowest two bytes of the Fibre Channel address as well as the current setting for automode. If a port is not specified, the display shows the Partition Address Mode value (0, 1, or 2) and all ports on the current partition. A -1 is displayed for ports that have not been assigned an area. Areas are dynamically assigned an address as they are added to a partition. The Partition Address Mode value is set by the **configure** command (Enable a 256 Area Limit).

--findPID

> Displays the port (slot and port offset) of the port that is currently assigned the provided address. This command applies the 10-bit area mask to the provided PID and returns the port that has been assigned the specified address. Therefore not all 24 bits are required to match exactly.

24-bit_Port_ID

> Specifies the 24-bit Fibre Channel port address. This operand is required with the **--findPID** option. This command applies the 10-bit area mask to the provided PID and returns the port hat has been assigned the specified address. Therefore not all 24 bits are required to match.

--help

>   Displays the command usage.

Examples

>   To bind a 16-bit address to the low two bytes of a port 24-bit Fibre Channel address:

```
switch:admin> portaddress --bind 5/18 1a00
```

>   To unbind a given address from a port:

```
switch:admin> portaddress --unbind 5/18
```

>   To display all port address bindings on the current partition:

```
switch:admin> portaddress --show
Partition Address Mode :0
Index Slot Port  Area      Mode   User_bound
================================
384    5    0   0x0800    8 bit      Y
385    5    1   0x0900    8 bit      -
386    5    2   0x0a00    8 bit      -
387    5    3   0x0b00    8 bit      -
388    5    4   0x0c00    8 bit      -
389    5    5   0x0d00    8 bit      -
390    5    6   0x0e00    8 bit      -
391    5    7   0x0f00    8 bit      -
392    5    8   0x0000    8 bit      -
393    5    9   0x0100    8 bit      Y
394    5   10   0x0200    8 bit      -
395    5   11   0x0300    8 bit      -
396    5   12   0x0400    8 bit      -
397    5   13   0x0500    8 bit      -
398    5   14   0x0600    8 bit      -
399    5   15   0x0700    8 bit      -
400    5   16   0x1800    8 bit      -
401    5   17   0x1900    8 bit      -
402    5   18   0x1a00    8 bit      -
403    5   19   0x1b00    8 bit      -
404    5   20   0x1c00    8 bit      -
405    5   21   0x1d00    8 bit      -
406    5   22   0x1e00    8 bit      -
407    5   23   0x1f00    8 bit      -
408    5   24   0x1000    8 bit      -
409    5   25   0x1100    8 bit      -
410    5   26   0x1200    8 bit      -
411    5   27   0x1300    8 bit      -
412    5   28   0x1400    8 bit      Y
413    5   29   0x1500    8 bit      -
414    5   30   0x1600    8 bit      -
415    5   31   0x1700    8 bit      -
```

>   To display the port address binding for port 28:

```
switch:admin> portaddress --show 5/18
```

```
Index Slot Port  Area      Mode
==============================
412   5   28  0x1400    8 bit
```

To display the port bound to a specified address.

```
switch:admin> portaddress --findPID 0x2400

Index Port  Port ID
==================
36   36  0x  2400
```

See Also

           None

portAlpaShow

Displays the Arbitrated Loop Physical Addresses (AL_PAs) of devices attached to a port.

Synopsis

portalpashow [*slot/*]*port*

Description

Use this command to display the AL_PAs of devices connected to a port, and whether these devices are public or private. If the specified port is not an active FL_Port or if no AL_PAs are present, this command prints an error.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

slot

For bladed systems only, specify the slot number of the port to display, followed by a slash (/).

port

Specify the port number to display, relative to its slot for bladed systems. Use **switchShow** to list valid ports.

Examples

To display the AL_PAs of a port:

```
switch:user> portalpashow 4/14
AL_PA   type        AL_PA   type        AL_PA   type
0xe2    public      0xe4    public
```

See Also

switchShow

portBeacon

Sets port beaconing mode.

Synopsis

```
portbeacon --enable [slot/]port
portbeacon --disable [slot/]port
portbeacon --show [slot/]port
portbeacon --show -all
portbeacon --help
```

Description

Use this command to enable or disable beaconing mode on a specified port.

When beaconing mode is enabled on a port, the port LED flashes amber and green for 2.5 seconds each in an alternating pattern. The beaconing mode continues until you turn it off. Beaconing mode is useful if you are trying to locate a specific port.

Beaconing mode takes over the port LEDs. The normal flashing LED pattern associated with an active, faulty, or disabled port is suppressed, and only the beaconing pattern is shown. Other commands are still executable and functional. However, if diagnostic frame-based tests such as **portLoopbackTest** are executed, the diagnostic LED pattern is interleaved with the beaconing pattern. Running switch beaconing or HBA- side (E2E) beaconing also overwrites the pattern.

The **portBeacon** command is one of the commands that controls beaconing. Each command has a clearly defined scope of action:

- The **portBeacon** command enables or disables beaconing on a specified port.

- The **switchBeacon** command enables or disables beaconing on all ports in the current logical switch.

- The **chassisBeacon** command enables or disables beaconing on all ports in the chassis.

- The **portPeerBeacon** command enables or disables beaconing to identify the interconnections between ports.

The actions of the beaconing commands are independent and mutually exclusive. Existing **portBeacon** settings remain unaffected if you enable or disable beaconing on the switch or on the chassis. Failure to disable existing beaconing commands before using a different type of beaconing may cause the commands to interfere with each other in unexpected ways.

Issue the **portBeacon --show** [slot/]port command to display beaconing for a specific port. The **switchShow** command displays the status of the **switchBeacon** command only.

Notes

Beaconing of Inter Chassis Link (ICL) ports, GE ports, FCoE ports, 10G ports, and embedded internal ports is not allowed.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

        This command has the following operands:

slot

        For bladed systems only, specifies the slot number of the port group to display, followed by a slash (/).

port

        Specifies the number of the port to be configured, relative to its slot for bladed systems. Use **switchShow** for a listing of valid ports.

--enable

        Enables beaconing mode on the specified port.

--disable

        Disables beaconing mode on the specified port.

--show

        Displays the port beaconing mode on the specified port as ON or OFF.

--show -all

        Displays the beaconing ports in slot/port format on the chassis and index format on switches, in logical switch order.

--help

        Displays the command usage.

Examples

        To enable beaconing mode on a port and verify the configuration:

```
switch:admin> portbeacon --enable 2/1
switch:admin> portbeacon --show 2/1
PortBeacon status of : slot 2, port 1 is ON
```

        To disable beaconing mode on a port and verify the configuration:

```
switch:admin> portbeacon --disable 2/1
switch:admin> portbeacon --show 2/1
PortBeacon status of : slot 2, port 1 is OFF
```

        To display the beaconing ports on a chassis:

```
switch:admin> portbeacon --show -all
In FID: 128
PortBeacon enabled port(s):
12/23 12/26
```

See Also

chassisBeacon, portPeerBeacon, switchBeacon

portBufferCalc

Calculates the number of buffers required per port.

Synopsis

```
portbuffercalc [slot/]port [-distance distance]
           [-speed speed] [-framesize framesize]
portBufferCalc --help
```

Description

Use this command to calculate how many buffers are required for a given distance, speed, and framesize. If no options are specified, then the current port's configuration is considered to calculate the number of buffers required.

Notes

Buffers required for the given frame size, distance and speed is calculated using the below formula:

- 1 buffer is required for 1 km at 2G (2048 framesize).

- 8 buffers are required for 1 km at 16G (2048 framesize).

Operands

This command supports the following operands:

-distance *distance*

Specifies the desired distance with valid range of 10Km to 1500Km.

-speed *speed*

Specifies the port speed. The valid values are:

1

Specifies port speed as 1Gb/s.

2

Specifies port speed as 2Gb/s.

4

Specifies port speed as 4Gb/s.

8

> Specifies port speed as 8Gb/s.

10

> Specifies port speed as 10Gb/s.

16

> Specifies port speed as 16Gb/s.

32

> Specifies port speed as 32Gb/s.

-framesize *framesize*

> Specifies the desired framesize in bytes with a maximum value 2048.

--help

> Displays command usage.

Examples

To calculate the buffers required per port:

```
switch:admin> portbuffercalc 9/4 \
   -distance 100 -speed 8 -framesize 512
1606 buffers required for 100km at 8G and framesize
   of 512 bytes
```

See Also

> **None**

portBufferShow

Displays the buffer usage information for a port group or for all port groups in the switch.

Synopsis

portbuffershow [[*slot/*]*port]*

Description

Use this command to display the current long distance buffer information for the ports in a port group. The port group can be specified by giving any port number in that group. If no port is specified, then the long distance buffer information for all of the port groups of the switch is displayed.

The following long distance information is displayed:

User Port

Index number of the port.

Port Type

E (E_Port), F (F_Port), G (G_Port), L (L_Port), or U (U_Port).

Lx Mode

Long distance mode.

L0

Link is not in long distance mode.

LE

Link is up to 10 km.

LD

Distance is determined dynamically.

LS

Distance is determined statically by user input.

Max/Resv Buffers

The maximum or reserved number of buffers that are allocated to the port based on the estimated distance. If the port is not configured in long distance mode, certain systems might reserve buffers for the port. This field then displays the number of buffers reserved for the port.

Avg Buffer Usage & FrameSize

The average buffer usage and average frame size for Tx and Rx.

Buffer Usage

The actual number of buffers allocated to the port. In LD mode, the number is determined by the actual distance and the user-specified desired distance.

Needed Buffers

The number of buffers needed to utilize the port at full bandwidth (depending on the port configuration). If the number of **Buffer Usage** is less than the number of **Needed Buffers**, the port is operating in the buffer limited mode.

Link Distance

For L0 (not in long distance mode), the command displays the fixed distance based on port speed, for instance: 10 km (1Gb/s), 5 km (2Gb/s), 2 km (4Gb/s), or 1 km (8Gb/s). For static long distance mode (LE), the fixed distance of 10 km displays. For LD mode, the distance in kilometers displays as measured by timing the return trip of a MARK primitive that is sent and then echoed back to the switch. LD mode supports distances up to 500 km. Distance measurement on a link longer than 500 km might not be accurate. If the connecting port does not support LD mode, is shows "N/A".

Remaining Buffers

The remaining (unallocated) buffers available for allocation in this group.

A hyphen in one of the display fields indicates that no relevant information is available; there may be no connection to a port, or the port is disabled, or the port is not an E_Port.

When invoked without operands, this command displays the long distance buffer information for all the port groups of the switch.

With the FC32-48 and the Brocade G620, additional buffers are needed to enable encryption. The buffer requirement for the ports is as follows:

•	A non-encryption, non-QoS online E_Port needs 70 internal buffers.

•	A non-encryption, QoS online E_Port needs 105 internal buffers.

•	Encryption port needs extra 105 buffers.

For example, the required buffers for an online encryption-enabled, non-QoS online E_Port link is 175 buffers (70+105) and for an online encryption-enabled, QoS online E_Port is 210 (105+105) buffers.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

The following operands are optional:

slot

For bladed systems only, specifies the slot number of the port group to display, followed by a slash (/).

port

Specifies the number of a port associated with the port group, relative to its slot for bladed systems. Use **switchShow** for a list of valid ports.

Examples

To display the port buffer information:

```
switch:admin> portbuffershow 17
User  Port  Lx    Max/Resv  Avg Buffer Usage & FrameSize\
Port  Type  Mode  Buffers       Tx          Rx              \
----  ----  ----  -------   --------------------------------
                            Buffer Needed   Link      Remaining
                            Usage  Buffers  Distance  Buffers
                            ------ -------  --------- --------
 64          -     8          - ( - )      - ( - )\
                            0        -          -
 65          -     8          - ( - )      - ( - )\
                            0        -          -
 66          -     8          - ( - )      - ( - )\
                            0        -          -
 67          -     8          - ( - )      - ( - )\
                            0        -          -
 68    E    LS     806       197(2012)    201(2044)\
                            206     206       100km
 69    E     -     8         1(2016)      1(2020)
                            26      26        2km
 70    E     -     8         1(2012)      1(2036)\
                            26      26        2km
 71    E     -     8         1(2008)      2(2052)\
                            26      26        2km
192          -     8          - ( - )      - ( - )\
                            0        -          -
193          -     8          - ( - )      - ( - )\
                            0        -          -
194          -     8          - ( - )      - ( - )
                            0        -          -
195          -     8          - ( - )      - ( - )\
                            0        -          -
196          -     8          - ( - )      - ( - )\
                            0        -          -
197          -     8          - ( - )      - ( - )\
                            0        -          -
198          -     8          - ( - )      - ( - )\
```

```
                                   0         -           -
  199          -       8         - ( - )     - ( - )\
                                   0         -           -          4556
-----------------------------------------------------------------
```

See Also

None

portCamShow

Displays port-based filter CAM utilization.

Synopsis

portcamshow [*slot/*]*port*

Description

Use this command to display the current filter Content-Addressable Memory (CAM) utilization of a specified port.

The command displays the following information:

SID used

Total number of CAM entries used by this port. Note that each CAM entry, either source ID (SID) or destination ID (DID) CAM, can be shared among a certain number of ports, depending on the ASIC.

DID used

Total number of CAM entries used by this port. Note that each CAM entry (either SID or DID CAM) can be shared among a certain number of ports, depending on the ASIC.

SID entries

All existing source ID entries within the CAM for this port. Note that each CAM entry (either SID or DID CAM) can be shared among a certain number of ports, depending on the ASIC.

DID entries

All existing destination ID entries within the CAM for this port. Note that each CAM entry (either SID or DID CAM) can be among a certain number of ports, depending on the ASIC.

SID free

The total number of free SID CAM entries available for use by this port.

DID free

The total number of free DID CAM entries available for use by this port.

Notes

This command cannot be executed on a logical port.

Ports that support shared areas are divided into two ports: primary and secondary ports. Primary and secondary ports share the same area. Port CAM entries displayed on the primary

ports also consist of all the secondary port SIDs and DIDs as well, when both the ports are F_Ports. This is because the primary port acts as a proxy for the CAM entries of the secondary port, in this case using redirect filters.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

This command is not supported on FCoE ports.

This command cannot be executed on a logical port.

Operands

This command has the following operands:

slot

For bladed systems only, specifies the slot number of the port to display, followed by a slash (/).

port

Specifies the port number to display, relative to its slot for bladed systems. Use **switch-Show** to list valid ports. This operand is required.

Examples

To display the filter CAM utilization for a single port on a switch:

```
switch:user> portcamshow 3/2


----------------------------------------------------
Area   SID used   DID used   SID entries   DID entries
 34       3          1         350400        2b2200
                               2b1200
                               220400
----------------------------------------------------
SID Free, DID Free: (61, 511)
```

To display port CAM entries on shared ports (in the example, port 7/31 and 7/39 are shared ports and 7/31 is the primary port):

```
switch:user> portcamshow 7/39
----------------------------------------------------
Area   SID used   DID used   SID entries   DID entries
207       3          1         03b380        03cf80
                   034100
                   03cf00
----------------------------------------------------
SID free, DID free: (2044, 1020)

switch:admin> portcamshow 7/31
----------------------------------------------------
Area   SID used   DID used   SID entries   DID entries
207       4          2         03b380        03cf80
```

```
                                              034100          03cf00
                                              03cf00
                                              03cf80
                    -------------------------------------------------
                    SID free, DID free: (2044, 1020)
```

The SID entry 03cf00 and DID entry 03cf80 on port 7/31 belong to port 7/39.

See Also

switchShow

portCfg

Manages port configuration parameters for FC ports, VE_ports, and GbE/10GbE/40GbE ports.

Synopsis

portcfg *action* [*slot/*] *port arguments*
portcfg *action* [*slot/*] **ge_port** *arguments*
portcfg *action* [*slot/*]*ve_port options arguments*
portcfg *action* [*slot/*][**ge_port** *options arguments*

Description

Use this command to manage port configuration parameters on FC ports as well as on Gigabit Ethernet (GbE) ports on the Brocade 7840 switch, Brocade 7810 switch, Brocade FX8-24, and on the Brocade SX6 blades.

You must use this command in a manner that honors the platform-specific differences in command syntax and behavior. Some command options are not available on all platforms. Others behave differently depending on the platform on which they are executed. Use the following section headings to navigate this page.

Commands supported on all platforms

- **portcfg mirrorport** - Configure a mirror port on the local FC port.

- **portcfg rscnsupr** - Manage registered state change notification (RSCN) suppression on the local port.

Configure IP interfaces on the Brocade 7840 switch, Brocade 7810 switch, Brocade FX8-24 and Brocade SX6 blades.

- **portcfg ipif** - Configure the local IP interfaces.

- **portcfg iproute** - Configure a static route on the IP interface.

- **portcfg vlantag** - Manage the IP interface VLAN configuration for FCIP. This command is supported on Brocade FX8-24 blade.

- **portcfg ipsec-policy** - Include the IPsec policy. Currently supported on the Brocade 7840 switch, Brocade 7810 switch, and Brocade SX6 blade only.

- **portcfg tcl** - Configure the Traffic Control List (TCL). Supported on the Brocade 7840 switch, Brocade 7810 switch, and Brocade SX6 blade only.

- **portcfg mgmtif** - Creates the inband management interfaces on Brocade FX8-24 only.

- **portcfg mgmtroute** - Creates the routes for the inband management interfaces on Brocade FX8-24 only.

- **portcfg autoneg** - Configure autonegotiation settings for 1 GbE ports.

- **portcfg sla** - Configure an Service Level Agreement (SLA) session. Supported on the Brocade 7840 switch, Brocade 7810 switch, and Brocade SX6 blade only.

- **portcfg filter-set** - Configure a static filter-set. A filter-set can be used to filter the **portShow** output for **ipif**, **iproute**, **tcl**, **lan-stats**, and other extension objects.

- • **portcfg app-type** - Creates a user-defined application type.

- • **portcfg lan-stats** - Configures lan-stats options such as flow definitions used for monitoring per-flow statistics.

Configure tunnels, circuits, and management interfaces on the Brocade 7840 switch, Brocade 7810 switch,and Brocade FX8-24 and Brocade SX6 blades.

- • **portcfg fciptunnel** - Create, modify, and delete Fibre Channel over IP (FCIP) tunnels

- • **portcfg fcipcircuit** - Create, modify, and delete FCIP circuits.

To display the command usage on the switch, execute **portcfg** *action* without any further arguments.

Notes

IPv6 addresses are supported except for inband management. IP Security enabled FCIP Tunnels cannot use IPv6 circuits on FX8-24 blade.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Some of the features supported by this command may require a license.

The Fabric OS port configuration commands are not supported on FCoE ports.

Function

Commands supported on all platforms

Synopsis

portcfg *action* [*slot/*]*port arguments*

Description

Use this command to configure the following parameters on a local FC port.

- • **portcfg mirrorport** - Configure a mirror port on the local port.

- • **portcfg rscnsupr** - Manage registered state change notification (RSCN) suppression on the local port.

Operands

This command has the following operands:

slot

For bladed systems only, specifies the slot number of the port to be configured, followed by a slash (/).

port[*-port*]

Specifies a single port or a range of ports, for example, 3-22 or 1/3-8. port ranges are supported only with the **rscnsupr** option.

rscnsupr

Manages Registered State Change Notification (RSCN) suppression on the local port. RSCN suppression is configurable only on FC ports. The syntax for **portCfg rscnsupr** is as follows:

portcfg rscnsupr [*slot*/]*port*[*-port*] *mode*

The following modes are supported with the **rscnsupr** option:

--disable

Disables the configuration. When disabled, device changes on the port generate an RSCN to all other end devices that are zoned with this one. By default, RSCN suppression is disabled on all ports.

--enable

Enables the configuration. When enabled, any device changes on the port will not generate an RSCN to any other end device.

mirrorport

Configures a mirror port on the local port. The port mirroring feature reroutes data frames between two devices to the mirror port. Port mirroring can aid in troubleshooting common FC end-to-end communication problems. The command prompts for confirmation that the specified port be enabled as a mirror port. Once a port is configured as a mirror port, the port can only be used as part of a mirror connection. Port Mirroring is not supported over FCIP links (VE tunnels). The port mirroring feature is not supported on the Gen6 platforms.

The syntax for **portCfg mirrorport** is as follows:

portcfg mirrorport [*slot*/]*port mode*

Valid modes for **mirrorport** include the following:

--disable [analytics]

Disables the configuration. When disabled, a port cannot be a mirror port. Specify **analytics** to remove the analytics configuration. The **analytics** option is supported only on Brocade Analytics Monitoring Platform.

--enable [analytics]

Enables the configuration. When the mirror port feature is enabled to a port, a mirror connection can use this port to mirror traffic. Specify **analytics** to configure port as

analytics port. The **analytics** option is supported only on Brocade Analytics Monitoring Platform.

Examples

To enable a mirror port configuration:

```
switch:admin> portcfg mirrorport 2/4 --enable
Please confirm enable of Mirror Port (Y,y,N,n):[n] y
```

To configure a range of ports as RSCN-suppressed:

```
switch:admin> portcfg rscnsupr 2/4-7 --enable
```

Function

Configure extension-related parameters on the Brocade 7840 switch, Brocade 7810 switch, and Brocade FX8-24 and Brocade SX6 blades.

Synopsis

portcfg *action* [*slot/*] **ge_port** | *name arguments*

Description

Use this command to configure the local IP interfaces and static routes on the Brocade 7840 switch, Brocade 7810 switch, and Brocade FX8-24 and Brocade SX6 blades. You must configure the local IP interfaces before you can create and configure FCIP tunnels. You can also create a VLAN configuration at the IP interface on the Brocade 7840 switch, Brocade 7810 switch,and Brocade FX8-24 and Brocade SX6 blades.

- **portcfg ipif**- Configure the local IP interfaces.

- **portcfg iproute** - Configure a static route on the IP interface.

- **portcfg vlantag** - Manage the IP interface VLAN configuration for FCIP. This command is supported on Brocade FX8-24 blade.

- **portcfg ipsec-policy** - Include the IPsec policy. Currently supported on the Brocade 7840 switch, Brocade 7810 switch, and Brocade SX6 blade only.

- **portcfg tcl** - Configure the Traffic Control List (TCL). Supported on the Brocade 7840 switch, Brocade 7810 switch, and Brocade SX6 blade only.

- **portcfg mgmtif** - Creates the inband management interfaces on Brocade FX8-24 only.

- **portcfg mgmtroute** - Creates the routes for the inband management interfaces on Brocade FX8-24 only.

- **portcfg autoneg** - Configure autonegotiation settings for 1 GbE ports.

- **portcfg sla** - Configure an Service Level Agreement (SLA) session. Supported on the Brocade 7840 switch, Brocade 7810 switch, and Brocade SX6 blade only.

- **portcfg filter-set** - Configure a static filter-set. A filter-set can be used to filter the **portShow** output for **ipif**, **iproute**, **tcl**, **lan-stats**, and other extension objects.

- **portcfg app-type** - Creates a user-defined application type.

- **portcfg lan-stats** - Configures lan-stats options such as flow definitions used for monitoring per-flow statistics.

Operands

This command has the following operands:

slot

For bladed systems only, specifies the slot number of the port to be configured, followed by a slash (/).

ge_*port*

Specifies the number of the GbE port to be configured. The GbE ports are numbered ge0 - ge7 on the Brocade 7810 switch, ge0 - ge17 on the Brocade 7840 switch and Brocade SX6 extension blade.

The two 10GbE ports on the Brocade FX8-24 blade are numbered xge0 and xge1.

The Brocade 7840 switch and the Brocade SX6 extension blade has two 40GbE ports labeled ge0 and ge1, and 16 1GbE or 10GbE ports labeled ge2-ge17. For Brocade 7840 switch and Brocade SX6 extension blade, specify GbE port number along with the DP number, for example, **portcfg ipif ge0.dp0**. The valid DP numbers are dp0 and dp1.

The Brocade 7810 switch has either 1G or 10G ports labeled ge0 - ge7. The GbE ports ge0 and ge1 are Copper and ge2 - ge7 are Optical. The valid DP number is always dp0 for Brocade 7810 switch.

For Brocade 7840, Brocade 7810 switch, and the Brocade SX6 extension blade, specify the switch virtual interface (SVI) LAN port in "lan.dp#" format, for example, **portcfg ipif lan.dp0**.

Use the **switchShow** command for a list of valid ports.

ipif

Defines the IP interface for both ports of a tunnel.

The IP network connection is configured by defining IP interfaces for origin and destination virtual ports, and then defining one or more IP routes to connect them. The syntax for **portCfg ipif** is as follows:

portcfg ipif [*slot/*]**ge_***port option args* [*optional_args*]

Valid options and arguments for **ipif** include the following:

create *src_ipaddr netmask* **mtu [***mask***]** *mtu_size vlan* **[***vlan_id***]**

>   Creates IP interfaces. Specify the following:

src_ipaddr

>   Specifies source IP address in either IPv6 or IPv4 format:

src_IPv6_addr/prefix_len

>   Specifies the source IPv6 address of the port if IPv6 is used. The address must be an
>   IPv6 global, unicast address, followed by a prefix. This is used for IPv6 addresses instead
>   of a netmask. The *prefix_len* operator is required. Refer to the *Brocade Fabric OS Exten-*
>   *sion User Guide* for more information on IPv6 rules and restrictions.

src_IPv4_addr netmask **[***mask***]**

>   Specifies the source IPv4 address of the port, if IPv4 is used. If an IPv4 address is used,
>   the subnet mask must be specified as well (in a.b.c.d. format). The CIDR notation for IPv4
>   addresses can also be used.

mtu [*mtu_size***]**

>   Specifies the maximum transmission unit size. The permitted range is 1260 Bytes to
>   1500 Bytes for FX8-24 blade, and 1280 Bytes to 9216 Bytes or 'auto' to enable PMTU
>   discovery for Brocade 7840 switch, Brocade 7810 switch, and the Brocade SX6 exten-
>   sion blade. This operand is optional.

vlan **[***vlan_id***]**

>   Specifies the VLAN ID. This operand is optional and currently supported on the Brocade
>   7840, Brocade 7810 switch, and the Brocade SX6 extension blade only.

-x | --crossport

>   Configures an interface for a failover crossport. A crossport is defined as the nonlocal
>   (secondary) XGE port to a VE_Port group that provides failover capabilities for the tunnel
>   configured on the local XGE port. For VE_Ports 12-21, xge1 is the local XGE port and
>   xge0 is the crossport. For VE_Ports 22-31, xge0 is the local XGE port and xge1 is the
>   crossport. This operand is optional and supported only on the Brocade FX8-24 XGE
>   ports.

modify *ipaddr*

>   Modifies an existing IP interface and supported only on the Brocade 7840 switch,
>   Brocade 7810 switch, and Brocade SX6 blade.

delete *ipaddr*

>   Deletes IP interfaces. Specify the IPv6 or IPv4 address of the virtual port.

iproute

Defines static IP routes on a GbE port or on a 10GbE port. After defining the IP interface on the remote switch, you can define destination routes for an interface. You cannot use this command to configure routes for inband management; use **portCfg mgmtroute** instead.

The syntax for **portcfg iproute** is as follows:

portcfg iproute [*slot/*]ge_*port option args* [*optional_args*]

Valid options and arguments for **iproute** include the following:

create *dest_ipaddr netmask* [*mask*] [*gateway_router*]

Creates an IP route. Specify the following:

dest_ipaddr

Specifies the destination IP address in either IPv6 or IPv4 format:

dest_IPv6_addr/prefix_len

Specifies the destination IPv6 address of the port, if IPv6 is used. The address must be an IPv6 global, unicast address, followed by a prefix. This is used for IPv6 addresses instead of a netmask. The *prefix_len* operand is required.

dest_IPv4_addr netmask [*mask*]

Specifies the destination IPv4 address of the port, if IPv4 is used. If an IPv4 address is used, the subnet mask must be specified as well. Use a.b.c.d. format. The CIDR notation for IPv4 addresses can also be used.

gateway_router

Specifies the IP address of an IP router that can route packets to the destination virtual port IP address. The gateway address must be on the same IP subnet as one of the port IP addresses. This operand is optional with IPv6 addresses. If not specified, the *gateway_router* learned from the Neighbor Discovery protocol is used.

-x | --crossport

Configures an IP route for a failover crossport. A crossport is defined as the nonlocal (secondary) XGE port to a VE_Port group that provides failover capabilities for the tunnel configured on the local XGE port. For VE_Ports 12-21, xge1 is the local XGE port and xge0 is the crossport. For VE_Ports 22-31, xge0 is the local XGE port and xge1 is the crossport. This operand is optional and supported only on the Brocade FX8-24 XGE ports.

delete *ipaddr*

Deletes IP routes for a specified IPv4 or IPv6 address. Valid *ipaddr* values include the following:

ipaddr

Specifies IP address in either IPv6 or IPv4 format:

IPv6_addr/prefix_len

Specifies the IPv6 address of the virtual port, if IPv6 is used. The address must be an IPv6 global, unicast address, followed by a prefix. The prefix_len operand is required.

dest_IPv4_addr netmask

Specifies the destination IPv4 address of the virtual port, if IPv4 is used. If an IPv4 address is used, the subnet mask must be specified as well. Use a.b.c.d. format or the CIDR notation for IPv4 addresses.

vlantag

Use this command to maintain the VLAN tag table associated with a particular network interface. This command is supported on Brocade FX8-24 blade. This table is mainly used during ingress processing to filter VLAN tagged frames. You can configure multiple VLAN IDs per IP interface; however, if you provide a destination address, there cannot be two entries to the same destination, including 0.0.0.0. Egress frames already marked as VLAN tagged (FCIP circuit-level tagging) take precedence over entries in this table.

This command supports **add** and **delete** options only. To modify a table entry, it must first be deleted, then added with different configuration parameters. The syntax for **portcfg vlantag** is as follows:

portcfg vlantag [*slot/*]**ge_**_port mode arguments_

Valid modes for **vlantag** include the following:

add *ipif_addr vlan_id l2cos* [*dst_ipaddr*][*optional_args*]

Adds an entry to the VLAN tag table.

delete *ipif_addr vlan_id* [*dst_ipaddr*]

Deletes an entry from the VLAN tag table. Valid arguments for **add** and **delete** include the following:

ipif_addr

Specifies the locally defined interface address in IPv6 or IPv4 format.

vlan_id

Specifies the VLAN ID used for this tag. The range is 1 to 4094.

l2cos

Specifies Layer 2 Class of Service/Priority, as defined in the IEEE 802.1p specification. The range is 0 to 7. Valid only with the **add** option.

dst_ipaddr

Specifies an optional destination IP address (IPv4 or IPv6). All packets destined for this IP address are tagged accordingly. If a destination IP address is not specified, all packets not already tagged will be tagged. The default is 0.0.0.0.

optional_args

Optional VLAN tagging parameters include the following:

-x | --crossport

>Applies the VLAN tag to a crossport interface. Specifying this parameter allows the VE_Ports 12-21 to use the IP interface with this vlantag. This operand is optional and valid only and supported only on the Brocade FX8-24 XGE ports.

-m | --mgmt

Specifying this parameter applies the VLAN tag to the inband management interface.

ipsec-policy

Creates an IPsec policy. This option is supported on the Brocade 7840 switch, the Brocade 7810 switch, and the Brocade SX6 extension blade only.

This command supports **create**, **modify**, and **delete** options only. The syntax for **portcfg ipsec-policy** is as follows:

portcfg ipsec-policy *name option* [*args*]

Valid options and arguments for **ipsec-policy** include the following:

create *name* **[-k | --preshared-key** *key***] [--key-pair** *name***]**

Creates the IPsec policy.

name

Specifies the name for the IPsec policy. The IPsec policy name can be up to 31 characters long and cannot contain special characters and keywords such as "all" and "none".

-p | --profile *name*

Specifies the profile to use with the IPSec policy. Valid values for *name* are **pre-shared** and **pki**.

-k | --preshared-key *key*

Specifies the preshared key to be used for authentication. This operand is required with shared-key authentication.

-K | --key-pair *name*

Sets the local key pair name to use for IKE authentication. This operand is required with PKI profile.

-l | --legacy

Configures the IPsec policy to use the old configuration database format for downgrading to firmware versions earlier than Fabric OS 8.1.0.

modify *name* **[-k | --preshared-key** *key***] [--key-pair** *name***]**

Modifies the IPsec policy.

name

Specifies the name for the IPsec policy.

-k | --preshared-key *key*

Specifies the preshared key to be used for authentication. This operand is required with shared-key authentication. The key length for Brocade FX8-24 is 32 characters. The minimum key length is 16 characters and the maximum is 64 characters for Brocade 7840, Brocade 7810, and Brocade SX6 devices.

--key-pair *name*

Sets the local key pair name to use for IKE authentication. This operand is required with PKI profile.

restart *name*

Restarts all inactive IKE sessions for the IPsec policy.

name

Specifies the name for the IPsec policy.

delete *name*

Deletes the IPsec policy.

name

Specifies the name for the IPsec policy.

tcl

Creates a TCL.

This command supports **create**, **modify**, and **delete** options only. The syntax for **portcfg tcl** is as follows:

portcfg tcl *name option* [*args*]

Valid options and arguments for **tcl** include the following:

name

Specifies the name of the TCL. The TCL name can be up to 31 characters long and cannot contain special characters.

create *name* [*args*]

Creates a TCL.

modify *name* [*args*]

Modifies a TCL.

-p | --priority *value*

Sets the priority ID for the TCL. The range is from 1 through 65534.

--admin-status enable | disable

Enables or disables the TCL.

--action allow | deny | [*slot/*]dp#-deny

Specifies the permit or deny action associated with the TCL.

-t | --target *VE*[-*pri*]

Sets the target virtual interface, QOS, and priority for the TCL.

-S | --src-addr *ipaddr*[/*prefix_len*]

Sets the source IP address input filter for the specified TCL.

--src-mask *ipaddr*

Sets the source IP address mask input filter for the specified TCL.

-D | --dst-addr *ipaddr*[/*prefix_len*]

Sets the destination IP address input filter for the specified TCL.

--dst-mask *ipaddr*

Sets the destination IP address mask input filter for the specified TCL.

--proto-port *ipaddr*

Sets the protocol port input filter for the specified TCL.

--proto-app *app_name*

> Sets the application input filter for the specified TCL.

--dscp *value*

> Set the DSCP input filter for the specified TCL. The range is from 0 through 63.

-v | --vlan *value*

> Set the VLAN input filter for the specified TCL. The range is from 0 to 4095.

--l2cos *value*

> Sets the Layer 2 CoS input filter for the specified TCL.

--l4proto *num | name*

> Sets the Layer 4 protocol input filter for the specified TCL. Valid values for *name* are TCP, UDP, ICMP, VRRP and the valid range for *num* is from 0 through 255, or 'none' to clear the Layer 4 protocol input filter.

--rst-propagation enable | disable

> Enables or disables end-to-end RST propagation for the specified TCL.

--segment-preservation enable | disable

> Enables or disables segment preservation for the specified TCL.

--non-terminated enable | disable

> Enables or disables non-terminate traffic handling for the specified TCL.

mgmtif

> Configures an inband management interface. A maximum of one interface is supported per GbE Port. Up to a total of 11 interfaces for the Brocade FX8-24 (depending on blade operating mode). The interfaces must each exist on a unique network, separate from the other inband management interfaces and from all other interfaces on the CP. The syntax for **mgmtif** is as follows:

> **mgmtif ge_***port* [*options*] *arguments*

> Valid options and arguments for **mgmtif** include the following:

create

> Creates a specified IP Address for the inband management interface. The IP address must be unique.

IPv4_address

Specifies an IP address for the inband management interface in IPv4 format, followed by the subnet mask.

netmask

Specifies the subnet mask for the IPv4 address in a.b.c.d format.

MTU

Specifies the MTU for the inband management interface. The valid range is 1260 to 1500. This operand is optional.

delete

Deletes the specified IP Address for the inband management interface.

IPv4_address

Specifies the IP address to be deleted.

disable

Disables the inband management interface at the specified GbE Port.

enable

Re-enables the inband management interface at the specified GbE Port after it has been disabled. The interface is by default enabled when it is created.

mgmtroute

Configures the management route for the inband management interface (needed only if the management interfaces are on different subnets). The syntax for **mgmtroute** is as follows:

mgmtroute ge_*port* [*options*] *destination_ip_address*

Valid options and arguments for **mgmtroute** include the following:

create

Creates a management route for a specified destination IP Address. The following operands are required:

dest_IPv4_addr

Specifies the destination IP address for the management route in IPv4 format.

netmask

Specifies the subnet mask for the IPv4 address in a.b.c.d format.

gateway

Specifies the IP address of an IP router that can route packets to the destination IP address.

delete

Deletes a management route for a specified destination IP Address. The following operands are required.

dest_IPv4_addr

Specifies the destination IP address for the management route in IPv4 format.

netmask

Specifies the subnet mask for the IPv4 address in a.b.c.d format.

sla

Creates, modifies, or deletes an SLA session. For more information on the SLA feature, refer to the *Brocade Fabric OS Extension User Guide*.

This command supports **create**, **modify**, and **delete** options only. The syntax for **portcfg sla** is as follows:

portcfg sla *name option* [*args*]

Valid options and arguments for **sla** include the following:

create

Creates an SLA session with the specified name. You must create an SLA session at each end of the circuit, but the session names need not match.

modify

Modifies the specified SLA session.

name

Specifies the name of the SLA.

--loss *percentage*

Sets the packet-loss percentage. The valid range is from 0.05 through 5.0 percentage.

--runtime *min*

Sets duration time for the test to run. The valid range is from 1 through 1440 minutes. The default value is 5 minutes.

--timeout *min* **| none**

> Sets the timeout duration for the test. If the timeout value is reached during the SLA session, the session is terminated and the circuit is put into service. Specify **none** to run the test until the runtime and packet-loss values are met. The valid range is from 1 through 2880 minutes.

delete *name*

> Deletes the specified SLA session.

filter-set

> Creates, modifies, or deletes filter-sets.
>
> This command supports **create**, **modify**, and **delete** options only. The syntax for **portcfg filter-set** is as follows:
>
> **portcfg filter-set** *name option* [*args*]
>
> Valid options and arguments for **filter-set** include the following:

create

> Creates a filter-set.

modify

> Modifies the specified filter-set.

name

> Specifies the name of the filter-set.

--port [slot/**]**port

> Specifies the port number.

--slot *slot*

> Specifies the slot number.

--ipaddr *ip_address***[/**prefix**]**

> Specifies the IPv4 address and prefix. The IP address is represented by a dotted decimal number, followed by a slash and a prefix.

--dp [slot/**]dp#**

> Specifies the dual processor ID.

--circuit *cid*

> Specifies the ID of FCIP circuits within the tunnel.

--priority *value*

> Specifies the priority ID. Valid values for *value* are control, high, medium, low, ip-high, ip-medium, and ip-low.

--ha-type *type*

> Specifies the HA type. Valid values for *type* are main, local-backup, and remote-backup.

--tcp-port *value | app*

> Specifies a single or range of TCP ports or application type. The valid range for *value* is from 0 through 65535. Use the **portshow lan-stats --known-apps** for the list of supported application types.

--retransmits *value*

> Specifies the retransmits value. This operand is used to filter the output based on the retransmits exceeding specified value.

--rtt *value*

> Specifies the circuit round trip time in milliseconds. This operand is used to filter the output based on the round trip time exceeding specified value.

--bytes *bytes* **[k | m | g]**

> Specifies the bandwidth (bytes per second) value. Specify **k** for KB/s, **m** for MB/s, and **g** for Gb/s. This operand is used to filter the output based on bandwidth exceeding specified value.

--conn-cnt *value*

> Specifies the connected count value. This operand is used to filter the output based on the connected count exceeding specified value.

--vlan *vlan_id*

> Specifies the VLAN ID.

--oper-status *oper*

> Specifies the operation status of a tunnel. You can specify the exact operation string or the states such as active, inactive, healthy, and unhealthy.

--default-behavior show | hide

> Sets the default display action if the specified filter statement is not supported. The default action is **hide**.

--show

> Displays the parameters matching the filter criteria.

--hide

> Hides the parameters matching the filter criteria.

--and

> The logical AND operator.

--or

> The logical OR operator.

delete *name*

> Deletes the specified filter-set.

app-type

> Creates, modifies, or deletes application types.
>
> This command supports **create**, **modify**, and **delete** options only. The syntax for **portcfg app-type** is as follows:
>
> **portcfg app-type** *name option* [*args*]
>
> Valid options and arguments for **app-type** include the following:

create

> Creates an application type.

--portrange *value*

> Specifies a single port or a range of ports separated by a dash character or a combination of both. For example, "18", "21500-21600", and "21500-21600,680".

--description

> Specifies a description for the application type.

modify *name* **--portrange** *value*

> Modifies the specified application type.

delete *name*

> Deletes the specified application type.

lan-stats

Creates, modifies, or deletes a filter-set.

This command supports **create**, **modify**, and **delete** options only. The syntax for **portcfg lan-stats** is as follows:

portcfg lan-stats *name option* [*args*]

Valid options and arguments for **lan-stats** include the following:

create

Creates a new filter-set or flow.

modify

Modifies an existing filter-set.

name

Specifies the name of the new filter-set.

--port [*slot/***]***port*

Filter on specified FC,VE, GE, or LAG port number.

--slot *slot*

Filter on specified slot number.

--ipaddr *ip_address***[/***prefix***]**

Filter on specified IP address or a network.

--dp [*slot/***]dp#**

Specifies the dual processor ID.

--tcp-port *value | app*

Specifies a single or range of TCP ports or application type. The valid range for *value* is from 0 through 65535. Use the **portshow lan-stats --known-apps** for the list of supported application types.

--retransmits *value*

Specifies the retransmits value. This operand is used to filter the output based on the retransmits exceeding specified value.

--bytes *bytes* **[k | m | g]**

> Specifies the bandwidth (bytes per second) value. Specify **k** for KB/s, **m** for MB/s, and **g** for Gb/s. This operand is used to filter the output based on bandwidth exceeding specified value.

--vlan *vlan_id*

> Specifies the VLAN ID.

--and

> The logical AND operator.

--or

> The logical OR operator.

--flow *"flow_name"*

> The LAN flow monitor.

--Rx | --Tx

> Filters the connection in the specified flow sorting the highest Rx or Tx bytes.

--fid

> Filters LAN traffic to a specific logical switch.

--default -behavior show | hide

> Sets the default behavior for objects that does not support the specified filter criteria. The default value is **show**.

--show | --hide

> Displays or hides objects matching the filter criteria.

--mac_addr

> Filters the specified MAC address.

--dscp

> Filters the connection that matches DSCP.

--l2cos

> Filters the connection that matches l2cos.

--throughput

> Filters the connection that has the highest throughput value.

--help

> Filters the connection that matches l2cos.

delete *name*

> Deletes the specified filter-set.

Examples

> To create an IP interface using IPv4:

```
switch:admin> portcfg ipif ge0 create  \
     192.169.0.20 netmask 255.0.0.0 mtu 1500
Operation Succeeded
```

> To create an SVI LAN port on a DP:

```
switch:admin> portcfg ipif lan.dp0 create 10.0.0.1/24 vlan 100
Operation Succeeded.
switch:admin> portcfg ipif lan.dp0 create 10.0.1.1/24 vlan 200
Operation Succeeded.

switch:admin> portshow ipif

 Port          IP Address                            / Pfx  MTU   VLAN  Flags
-----------------------------------------------------------------------------
---
 ge4.dp0       192.168.60.20                         / 24   1500  0     U R M
 ge17.dp0      192.168.10.107                        / 24   1500  0     U R M
 lan.dp0       10.0.0.1                              / 24   1500  100   U R M
 lan.dp0       10.0.1.1                              / 24   1500  200   U R M
-----------------------------------------------------------------------------
---
Flags: U=Up B=Broadcast D=Debug L=Loopback P=Point2Point R=Running
     N=NoArp PR=Promisc M=Multicast S=StaticArp LU=LinkUp X=Crossport
```

> To create an IP interface using IPv6 with a prefix:

```
switch:admin> portcfg ipif ge0 create 2000::22/64 1500
Operation Succeeded

switch:admin> portshow ipif ge0

 Port          IP Address                            / Pfx  MTU   VLAN  Flags
-----------------------------------------------------------------------------
-----------
 ge0           192.180.0.20                          / 24   1500  n/a   U R M
 ge0           192.168.0.21                          / 24   1500  n/a   U R M
 ge0           2000::10                              / 64   1500  n/a   U R M
```

```
----------------------------------------------------------------------
-----------
Flags: U=Up B=Broadcast D=Debug L=Loopback P=Point2Point R=Running
       N=NoArp PR=Promisc M=Multicast S=StaticArp LU=LinkUp X=Crossport
```

To create an interface for a failover crossport on a Brocade FX8-24:

1)   Configure the interface for the local XGE port (xge0).

```
switch:admin> portcfg ipif 8/xge0 create  \
     192.169.0.20 netmask 255.255.255.0 mtu 1500
Operation Succeeded
```
2)   Configure the interface for the nonlocal XGE port (xge1).

```
switch:admin> portcfg ipif 8/xge1 create \
     192.169.0.20 netmask 255.255.255.0 -x
Operation Succeeded
```
3)   The IP address 192.168.11.20 will be available for circuits on VE_Ports 22-31 on the
      Brocade FX8-24 extension blade. The output from **portshow ipif** for the same address
      shows the crossport tag.

```
switch:admin> portshow ipif 8/xge0

 Port         IP Address                       / Pfx  MTU   VLAN  Flags
----------------------------------------------------------------------
-----------
 8/xge0       192.168.10.20                    / 24   1500  n/a   U R M
 8/xge0       192.168.11.21                    / 24   1500  n/a   U R M X
----------------------------------------------------------------------
-----------
Flags: U=Up B=Broadcast D=Debug L=Loopback P=Point2Point R=Running
       N=NoArp PR=Promisc M=Multicast S=StaticArp LU=LinkUp X=Crossport
```

To delete an IP interface:

```
switch:admin> portcfg ipif ge0 delete 192.168.10.20
Operation Succeeded
```

To delete an IP interface for a failover crossport:

```
switch:admin> portcfg ipif 8/xge0 delete 192.168.11.20 -x
Operation Succeeded
```

To create a static IP route using an IPv4 destination address, a netmask, and a gateway
address:

```
switch:admin> portcfg iproute ge0 create  \
     192.42.0.0 netmask 255.255.255.0 192.168.0.250
Operation Succeeded
```

To create a static IP route using IPv6:

```
switch:admin> portcfg iproute ge0 create  \
     2010::/64 2000::1:250
Operation Succeeded


switch:admin> portshow iproute ge0
 Port         IP Address                / Pfx  Gateway              Flags
```

```
----------------------------------------------------------------------
-----------
ge0           192.168.0.0                / 24   *                   U C
ge0            2000::                    / 64   *                   U C
ge0            2000::10                  / 128  *                   U H L
ge0            2000::1:250               / 128  *                   U H L
ge0            2010::                    / 64   2000::1:250         U G S
----------------------------------------------------------------------
-----------
 Flags: U=Usable G=Gateway H=Host C=Created(Interface)
        S=Static L=LinkLayer X=Crossport
```

To create an IP route for a failover crossport on a Brocade FX8-24:

1)   Configure the iproute for the local XGE port (xge0).

```
switch:admin> portcfg iproute 8/xge0 create 2.2.2.0 \
     netmask 255.255.255.0 192.168.11.250
Operation Succeeded
```
2)   Configure the interface for the non-local XGE port (xge1).

```
switch:admin> portcfg ipif 8/xge1 create  1.1.1.0 \
     netmask 255.255.255.0 192.168.11.250 -x
Operation Succeeded
```
3)   The IP route will be available for circuits on VE ports 22-31. The output from **portshow iproute** for the same route shows the crossport tag.

```
switch:admin> portshow iproute 8/xge0
 Port          IP Address              / Pfx  Gateway            Flags
----------------------------------------------------------------------
-----------
 8/xge0        192.168.0.0             / 24   *                   U C
 8/xge0        192.168.0.111           / 32   *                   U H L

 8/xge0        192.168.1.0             / 24   *                   U C X
 8/xge0        192.168.1.111           / 32   *                   U H L X
----------------------------------------------------------------------
-----------
 Flags: U=Usable G=Gateway H=Host C=Created(Interface)
        S=Static L=LinkLayer X=Crossport
```

To delete the crossport IP route:

```
switch:admin> portcfg iproute 8/xge1 delete \
     1.1.1.0 netmask 255.255.255.0 -x
Operation Succeeded
```

To delete a static IP route using an IPv4 address:

```
switch:admin> portcfg iproute ge0 delete \
     172.16.0.0 netmask 255.255.0.0
Operation Succeeded
```

To create a network-wide permanent VLAN tag entry with a VLAN ID of 200 and an L2 CoS value of 5 (no destination address):

```
switch:admin> portcfg vlantag ge2 add  \
     192.168.2.10 200 5
```

```
Operation Succeeded
```

To display the VLAN tag configuration (for an explanation of the flags, refer to **portShow**):

```
switch:admin> portshow vlantag ge2


Port: ge2
Interface Address                         VlanId L2CoS  Flags
                 Destination Address
---------------------------------------------------------------
192.168.2.10                               200    5     Perm Net
                 0.0.0.0
192.168.0.20                               100    0     Perm
                 192.168.0.10
192.168.0.21                               200    0     Perm
                 192.168.0.11
2000::20                                   300    0     Perm
                 2000::10
2000::21                                   400    0     Perm
2000::11
```

To create a VLAN tag entry for a failover crossport interface with a VLAN ID of 200 and an L2 CoS value of 1 and to display the configuration:

```
switch:admin> portcfg vlantag 8/xge0 add 192.168.11.20 200 1 -x
Operation Succeeded
switch:admin> portshow vlantag 8/xge0
Port: 8/xge0
Interface Address                    VlanId L2CoS Flags

                 Destination Address
---------------------------------------------------------
192.168.11.20                         200    1    Perm Net (crossport)
                 0.0.0.0
```

To delete a VLAN tag entry:

```
switch:admin> portcfg vlantag ge2 delete 192.168.2.10 200
Operation Succeeded
```

To delete a VLAN tag entry for a crossport:

```
switch:admin> portcfg vlantag 8/xge0 delete 192.168.11.20 200 -x
Operation Succeeded
```

To display all TCP connections going over GE17 FE port:

```
switch:admin> portcfg lan-stats --flow "testge" create -port ge17
```

To create an IPsec policy for the Brocade 7840 switch:

```
switch:admin> portcfg ipsec-policy myPolicy1 create -k "some test key"
Operation Succeeded
```

To view the IPsec policy status for the Brocade 7840 switch and the Brocade SX6 extension blade:

```
switch:admin> portshow ipsec-policy all --ike
```

```
IPsec Policy  OpStatus IKECnt  Pre-Shared Key
   IKE-ID      OpStatus RefCnt  Local IP Address      Remote IP Address
-----------------------------------------------------------------------
----
myPolicy1     NotInUse    0     some test key
```

To create an IPsec policy and set encryption profile:

```
switch:admin> portcfg ipsec-policy pki_pol0 create --profile pki
Operation Succeeded
```

To restart all inactive IKE sessions under an IPSec policy:

```
 >
```

```
switch:admin> portcfg ipsec-policy psk_pol0 restart
Operation Succeeded
```

To create a TCL:

```
switch:admin> portcfg tcl hostAtoB create --admin enable \
   --target 24 --src-addr 10.0.0.0/8 --priority 10
Operation Succeeded
```

To delete an inband management interface:

```
switch:admin> portcfg mgmtif ge0
     delete 192.168.3.10 255.255.255.0
```

To delete a management route:

```
switch:admin> portcfg mgmtroute ge0 delete 192.168.3.0 255.255.255.0
192.168.2.250
```

To disable and re-enable an inband management interface:

```
switch:admin> portcfg mgmtif ge0 disable
switch:admin> portcfg mgmtif ge0 enable.
```

To configure a VLAN tag for an inband management port:

```
switch:admin> portcfg vlantag 10/xge0 add 172.16.30.40 30 0 --mgmt
Operation Succeeded
```

To configure VLAN tags for all ports on a switch:

```
switch:admin> portshow vlantag all
Port: 10/xge0
Interface Address                          VlanId  L2CoS  Flags
                  Destination Address
---------------------------------------------------------------------
172.16.30.80                                30      0     Perm
                  172.16.50.80
172.16.30.40                                30      0     Perm Net Mgmt
                  0.0.0.0
```

To enable the autonegotiation of a 1GbE port:

```
switch:admin> portcfg autoneg 1/ge2 --enable
Operation Succeeded
switch:admin> portshow autoneg 1/ge2
```

```
Auto-Negotiation Configuration:
Port: 1/ge2
Auto-Negotiate: Enabled
```

To create an SLA session:

```
switch:admin> portcfg sla netA create --loss 0.5 \
   --runtime 15 --timeout 60
Operation Succeeded
```

To configure a filter-set:

```
switch:admin> portcfg filter-set tcpErrors create \
    --retransmits 100 --and --bytes 1000000
```

To create application type:

```
switch:admin> portcfg app-type TELNET create \
    --portrange 18 --description "Includes telnets connections"
Operation Succeeded
```

Function

Configure tunnels, circuits, and management interfaces on the Brocade 7840 switch and Brocade FX8-24 and Brocade SX6 extension blades.

Synopsis

portcfg action [*slot/*]*ve_port options arguments*

Description

Use this command to configure FCIP tunnels and FCIP circuits on the Brocade 7840 switch, Brocade 7810 switch, and the Brocade FX8-24 and Brocade SX6 extension blades only. The FCIP tunnels on the local and remote ports act as Virtual E_Ports (VE_Ports) connecting the local and remote fabrics. The following operations can be performed with this command:

- **portcfg fciptunnel** - Create, modify, and delete Fibre Channel over IP (FCIP) tunnels.
  - Configure a tunnel with the FCIP FastWrite feature.

  - Enable or disable Tape Pipelining.

  - Configure the compression options.

  - Configure an IPsec-enabled tunnel.

  - Configure VLAN tagging on the default FCIP circuit. This option is supported on Brocade FX8-24 blade only.

  - Configure Differentiated Services Code Point (DSCP) markings.

  - Set the committed rate or minimum and maximum rates for the default circuit.

  - Configure a tunnel for FICON emulation.

- **portcfg fcipcircuit** - Create, modify, and delete additional FCIP circuits.
  - Set or modify the committed rate or minimum and maximum rates for the circuit.

  - Configure or change VLAN tagging on the default circuit.

–   Set or modify additional circuit parameters.

Notes

You can configure up to 20 tunnels on the Brocade 7840 switch, Brocade FX8-24, and on the Brocade SX6 extension blades. The Brocade 7810 switch supports up to four tunnels.

Operands

This command has the following operands:

slot

For bladed systems only, specifies the slot number of the port to be configured, followed by a slash (/).

ve_port

Specifies the number of the VE_Port associated with the tunnel. The VE_Ports are numbered 24-43 on the Brocade 7840, 12-15 on the Brocade 7810, 16-35 on the Brocade SX6, and 12-31 on the Brocade FX8-24.

fciptunnel

Creates, modifies, or deletes an extension tunnel.

Note the following port mapping rules:

```
                     7840    SX6     FX8-24
          DP0 ports  24-33   16-25   22-31 (xge0)
          DP1 ports  34-43   26-35   12-21 (ge0-ge9,xge1)
```

The valid VE ports on the Brocade 7840 switch are VE_Ports 24-43. In 10VE mode, only VE_Ports 24-28 and VE_Ports 34-38 are supported. In 20VE mode all VE ports are supported.

The syntax for **portcfg fciptunnel** is as follows:

portcfg fciptunnel [*slot/*]*ve_port options* [*tunnel_arguments*] [*circuit_arguments*]

The following *options* are supported with **fciptunnel**:

create [*tunnel_arguments*][*circuit_arguments*]

Creates an extension tunnel and, optionally a single default circuit. If no circuit arguments are specified, no extension circuit will be created. While it is possible to create a tunnel without a default circuit, it is an unlikely scenario (for example, for configuration staging purposes). In most cases, you will create a tunnel with at least one configured circuit. In this case, you must specify a remote and local IP address for the circuit as well as a committed rate (or alternately, a minimum and maximum committed rate) to configure the default circuit. The default circuit created with the tunnel is automatically assigned the

circuit ID 0. You can modify the default circuit with the **fciptunnel modify** command. To add additional circuits to an existing tunnel, use the **fcipcircuit create** command.

modify [*tunnel_arguments*][*circuit_arguments*]

Modifies the properties of an existing extension tunnel. To modify a tunnel, you must specify at least one of the tunnel or circuit parameters for the command to be effective. Any circuit attribute you change with the **fciptunnel modify** command affects only the circuit 0. All other circuits remain unchanged. To modify a circuit other than circuit 0, you must use the **fcipcircuit modify** command.

In order to create a default circuit 0 with the tunnel, you must at least specify the following circuit arguments with **fciptunnel create**:

-D | --remote-ip-address *remote_ip_address*

Specifies the IP address for the remote end of the extension circuit.

-S | --local-ip-address *local_ip_address*

Specifies the IP address for the local end of the extension circuit.

-b | --min-comm-rate *value* -B | --max-comm-rate *value*

You may set a minimum and a maximum for the committed rate to configure the tunnel for Adaptive Rate Limiting (ARL), which allows for a more effective sharing of bandwidth between applications. For Brocade FX8-24, the valid range is 10,000 Kb/s to 1,000,000 Kb/s for 1G ports and 10,000 Kb/s to 10,000,000 Kb/s for 10G ports. For Brocade 7840 and Brocade 7810, the valid range is 20,000 Kb/s to 10,000,000 Kb/s. The maximum committed rate can be no larger than five times the minimum committed rate.

In the previous releases, the maximum and minimum rates had to be configured to the same value for circuits using the XGE ports on the FX8-24 blade. You can configure different values for minimum and maximum rates for each circuit of a tunnel using the XGE ports.

Optional *tunnel_arguments* for **fciptunnel create** and **modify** include the following. Tunnel parameters are by default disabled. To change the default (for example, enabling Fast-Write) with **fciptunnel create**, specify the parameter only. To modify any of these parameters with **fciptunnel modify**, specify the parameter and one of the values in square brackets.

-f | --fastwrite[disable | enable]

Disables or enables the FCIP FastWrite on the specified extension tunnel.

-t | --tape-pipelining [disable | enable | write-only]

Configures Open Systems Tape Pipelining on the specified extension tunnel. By default, OSTP is disabled .

When using this operand with **fciptunnel create**, specify one or more of the following operands:

-t | --tape-pipelining

Enables write-read Tape Pipelining (FCIP FastWrite must also be enabled.)

-N| --no-read-pipelining

Disables tape read-pipelining. This operand is valid only with **fciptunnel create** and **-t** must be specified enabling the feature. The combination of **-t** and **-N** effectively enables tape write-pipelining. This operand is supported on the Brocade FX8-24 blade only.

When using this operand with **fciptunnel modify**, specify one or more of the following:

-t | --tape-pipelining *mode*

Modifies the Open System Tape Pipelining configuration. Specify one of the following modes:

disable

Disables Tape Pipelining

enable

Enables write-read Tape Pipelining (FCIP FastWrite must also be enabled).

write-only

Enables write-only Tape Pipelining (FCIP FastWrite must also be enabled).

-c | --compression *compression_level*

Configures compression on the specified FCIP tunnel. By default, compression is disabled. Specify one of the following values on the FX8-24 blades:

none

Compression disabled

hardware

Enable standard compression.

moderate

Enable moderate compression.

aggressive

Enable aggressive compression.

auto

> enable auto compression. Automatically adjusts compression level based on the maximum configured tunnel bandwidth. To enable this feature upgrade both ends of the tunnel to Fabric OS v7.0.0. Based on total effective tunnel bandwidth, the compression level will be adjusted as follows:

Aggressive

> Bandwidth less than 512Mb/s

Moderate

> Bandwidth more than 512Mb/s and less than 2Gb/s.

Standard

> Bandwidth more than 2Gb/s.

> Specify one of the following values on the Brocade 7840 switch, Brocade 7810 switch, and the Brocade SX6 extension blade:

none

> Compression disabled.

fast-deflate

> Enable fast-deflate compression.(The Brocade 7810 switch does not support fast-deflate.)

deflate

> Enable deflate compression.

aggr-deflate

> Enable aggressive deflate compression level.

--fc-compression *compression_level*

> Configures FC compression on the specified FCIP tunnel. By default, compression is disabled. This operand is supported on the Brocade 7840 switch, Brocade 7810 switch, and the Brocade SX6 extension blade only. Specify one of the following values for *compression_level*:

aggr-deflate

> Enable aggressive deflate compression level.

default

> Enable default compression level.

deflate

> Enable deflate compression.

fast-deflate

> Enable fast-deflate compression.

none

> Compression disabled.

--ip-compression *compression_level*

> Configures IP compression on the specified FCIP tunnel. By default, compression is disabled. This operand is supported on the Brocade 7840 switch, Brocade 7810 switch, and the Brocade SX6 extension blade only. Specify one of the following values for *compression_level*:

aggr-deflate

> Enable aggressive deflate compression level.

default

> Enable default compression level.

deflate

> Enable deflate compression.

none

> Compression disabled.

--ipext enable | disable

> Enables or disables IP Extension capability to a tunnel. This parameter is supported only on Brocade 7840 switch, Brocade 7810 switch, and the Brocade SX6 extension blade.

-T | --tperf [0|1]

> Disables (0) or enables (1) TPerf test mode. Refer to **portCmd** help for more information regarding TPerf monitoring. This operand is supported on the Brocade FX8-24 blade only.

-n | --remote-wwn *remote-wwn*

> Specifies the WWN of the remote FC entity.

-d| --description *string*

Specifies a description for the specified tunnel.

-i | --ipsec [disable | enable]

Disables or enables Internet Protocol Security (IPsec) on the specified tunnel. Circuits that fall underneath a tunnel inherit the IPsec tunnel attributes. IPsec uses a predefined policy with IKEv2 for key negotiation, ESP transport mode for IPsec, and AES with 256-bit keys for Encryption (AES-GCM-ESP). You must specify a key with this option. On the Brocade FX8-24, IPsec is supported only on VE_Ports 12-21. This operand is supported on the Brocade FX8-24 blade only.

-K | --key *preshared_key*

Specifies the preshared key to be used for authentication. Specify a string of alphanumeric characters 32 bytes in length. This argument must be used together with **--ipsec**.This argument is supported on the Brocade FX8-24 blade only.

-i | --ipsec [*policy_name* **| none]**

Sets the Internet Protocol Security (IPsec) on the specified tunnel to use the specified IPsec Policy, or to disable IPsec for the tunnel if the 'none' operand is used. This argument is supported on the Brocade 7840 switch, Brocade 7810 switch, and the Brocade SX6 extension blade only.

-p | --distribution *mode***[***,ratio,...***]**

Sets tunnel bandwidth distribution mode. The valid modes are protocol, priority, and default. Optionally, you can change the default bandwidth allocation ratio for Fibre Channel (FC) and IP Extension (IP) traffic in the tunnel. This operand is supported on the Brocade 7840 switch, Brocade 7810 switch, and the Brocade SX6 extension blade only.

-Q | --fc-qos-ratio *high,med,low*

Sets QoS percentages for FC priorities. The default values are 50% (high), 30% (medium), and 20% (low). Each priority can have a minimum of 10%. The sum of percentages must equal 100%. This operand is supported on the Brocade 7840 switch, Brocade 7810 switch, and the Brocade SX6 extension blade only.

-I | --ip-qos-ratio *high,med,low*

Sets QoS percentages for IP priorities. The default values are 50% (high), 30% (medium), and 20% (low). Each priority can have a minimum of 10%. The sum of percentages must equal 100%. This operand is supported on the Brocade 7840 switch, Brocade 7810 switch, and the Brocade SX6 extension blade only.

-q | --qos-bw-ratio *high,med,low* **| default**

Sets QoS percentages for all QoS priorities. The default values are 50% (high), 30% (medium), and 20% (low). Each priority can have a minimum of 10%. The sum of percentages must equal 100%. Both ends of the tunnel must have the same QoS priority settings.

-F | --ficon [disable | enable]

Enables or disables FICON emulation on the specified extension tunnel. Optional FICON arguments for **fciptunnel create** allow you to control specific features. Use the [0|1] options only with **fciptunnel modify**.

--ficon-tera-read [disable | enable]

Enables or disables FICON Read Emulation for a Teradata server on the specified extension tunnel.

--ficon-tera-write [disable | enable]

Enables or disables FICON Write Emulation for a Teradata server on the specified extension tunnel.

--ficon-xrc [disable | enable]

Enables or disables FICON XRC emulation. FICON XRC Emulation allows XRC (IBM eXtendedRemote Copy, also known as IBM z/OS Global Mirroring) to operate effectively at extended distances.

--ficon-tape-write [disable | enable]

Enables or disables FICON Tape Write Pipelining. This feature improves the performance of certain applications when writing to tape over extended distances.

--ficon-tape-read [disable | enable]

Enables or disables FICON Tape Read Pipelining. This feature improves performance for certain applications when reading from FICON tape over extended distances.

--ficon-tin-tir [disable | enable]

Enables or disables FICON TIN/TIR emulation. This feature enhances recovery when a TIN/TIR exchange occurs as part of a channel recovery operation during tape emulation. This feature is enabled by default (recommended setting).

--ficon-dvcack [disable | enable]

Enables or disables FICON Device Level Acknowledgement emulation. This feature is applicable to both FICON Disk and Tape configurations. The feature removes one network round trip for exchanges that end with a Device Level Acknowledgement frame from the device. This feature is enabled by default (recommended setting).

--ficon-read-blk [disable | enable]

Enables or disables FICON read Tape Read Block ID emulation. This feature permits FICON write channel programs containing embedded read block ID commands (CCWs) with a byte count of exactly four bytes to be processed as emulated commands during write emulation processes.

--ficon-print [disable | enable]

Enables or disables FICON printer emulation on the specified FCIP tunnel. This command is valid only with the **modify** option.

--max-read-pipe *value*

Defines the maximum number of tape read channel commands (CCWs) that can enter the read pipeline for a single device whether all the CCWs are bundled in a single channel program or in multiple channel programs. The setting has significance only for host (channel) initiated operations at this side and will not affect tape write operations initiated by hosts (channels) attached at the opposite side. Too small of a value will result in poor performance. The value should be chosen based upon the typical tape channel program that requires optimum performance. The default value is 32 (recommended setting). The range is 1 to 100.

--max-write-pipe *value*

Defines the maximum number of tape write channel commands (CCWs) that can enter the write pipeline for a single device whether all the CCWs are bundled in a single channel program or in multiple channel programs. The setting has significance only for host (channel) initiated operations at this side and will not affect tape write operations initiated by hosts (channels) attached at the opposite side. Too small of a value will result in poor performance. The value should be chosen based upon the typical tape channel program that requires optimum performance. The default value is 32 (recommended setting). The range is 1 to 100.

--max-read-devs *value*

Defines the maximum number of concurrent emulated tape read operations. As concurrency increases, the value of emulation decreases. Excessive concurrency has the potential to oversubscribe packet data memory. The setting has significance only for host (channel) initiated operations at this side and will not affect tape read operations initiated by hosts (channels) attached at the opposite side. The default value is 16. The range is 1 to 32.

--max-write-devs *value*

Defines the maximum number of concurrent emulated tape write operations. As concurrency increases, the value of emulation decreases. Excessive concurrency has the potential to oversubscribe packet data memory. The setting has significance only for host (channel) initiated operations at this side and will not affect tape write operations initiated by hosts (channels) attached The default value is 16. The range is 1 to 32.

--write-timer *value*

Defines a time limit for pipelined write chains. This value is specified in milliseconds (ms). If a pipelined write chain takes longer than this value to complete, the ending status for the next write chain will be withheld from the channel. This limits processing to what the network and device can support. Too small a value limits pipelining performance. Too large a value results in too much data being accepted for one device on a path. The default value is 300 milliseconds (ms). The range is 100 to 1500.

--write-chain *value*

Defines the maximum amount of data that can be contained in a single CCW chain. If this value is exceeded, emulation is suspended. The default value is 3.2 MB (3200000 bytes) The range is 1 MB to 5 MB.

--oxid-base *value*

Defines the base value of an entry pool of 256 OXIDs supplied to emulation-generated exchanges. It should fall outside the range used by FICON channels and devices to avoid conflicts. The default value is 0x9000 (recommended setting). The range is 0x0000 to 0xF000.

--ficon-debug *value*

Defines optional debug flags. The default value is 0xF7C80000. This parameter is primarily for use by technical support personnel.

--arl-algorithm

Sets the ARL algorithm. Valid values for *mode* are **auto**, **reset**, **step-down**, **timed-step-down**. This option is supported on the Brocade 7840 switch, Brocade 7810 switch, and the Brocade SX6 extension blade only.

--legacy-qos-mode enable | disable

Enables or disables legacy QoS mode. This option is supported on the Brocade 7840 switch, Brocade 7810 switch, and the Brocade SX6 extension blade only.

--decrypt-cfgdb

Modifies a tunnel to the unencrypted configuration database format for downgrading to firmware version earlier than Fabric OS 8.1.0. This option is supported on Brocade FX8-24 blade only.

Optional FCIP circuit arguments for **fciptunnel create** and **modify** include the following.

-a | --admin-status [disable | enable]

Enables or disables the circuit. Admin status is enabled by default.

-S | --local-ip *ipaddress* **| none**

Sets the local IP address to use for the circuit. The **none** option is supported only on the Brocade 7840 switch, Brocade 7810 switch, and the Brocade SX6 extension blade.

-D | --remote-ip *ipaddress* **| none**

Sets the remote IP address to use for the circuit. The **none** option is supported only on the Brocade 7840 switch, Brocade 7810 switch, and the Brocade SX6 extension blade.

--local-ha-ip *ipaddress* **| none**

Sets the local HA IP address to use for the circuit. This argument is applicable on the Brocade 7840 switch, Brocade 7810 switch, and the Brocade SX6 extension blade only.

--remote-ha-ip *ipaddress* **| none**

Sets the remote HA IP address to use for the circuit. This argument is applicable on the Brocade 7840 switch, Brocade 7810 switch, and the Brocade SX6 extension blade only.

-C | --connection-type [default | listener | initiator]

Specifies whether the circuit is the listener or the initiator. In default mode, the initiator and listener are automatically chosen based on the lower and higher-order IP address. This can cause a problem in Network Address Translation (NAT) environments, if both sides of the circuit have lower-order addresses.

-L | --load-leveling [default | failover | spillover]

Configures spillover or failover load-balancing method. The default load-balancing method is failover. This argument is applicable on the Brocade 7840 switch, Brocade 7810 switch, and the Brocade SX6 extension blade only.

-s | --sack [disable | enable]

Disables or enables selective acknowledgement code (SACK) on the extension circuit. SACK is enabled by default. Use **-s** | **--sack** to disable the feature when you create a circuit. Use **-s** | **--sack disable | enable** to disable or enable SACK when you modify a circuit. This operand is supported on the Brocade FX8-24 blade only.

-k | --keepalive-timeout *timeout*

Specifies the keep alive timeout in milliseconds. The valid range is 500 ms to 7200000 ms. If the tunnel does not already have FICON Emulation enabled, circuits created on the tunnel default to the the keep alive timeout of 10000 ms (10 seconds) for Brocade FX8-24 blade and 6000 ms (6 seconds) for Brocade 7840 switch, Brocade 7810 switch, and the Brocade SX6 extension blade. If FICON emulation is enabled on the extension tunnel when a circuit is created, the keep alive timeout defaults to 1000 ms (1 seconds).

-x | --metric *metric*

Specifies the metric for the configured circuit. The valid range is 0 to 1. The default value is 0. A lower metric assigns a higher priority to the circuit. As data is flowing through the extension tunnel, it automatically traverses the lowest metric cost circuits. For example, if a tunnel has four circuits, three of which are set to a metric of 0 and one is set to a metric of 1, all data will flow over the metric 0 circuits. This parameter is meaningful only, if you configure more than one circuit.

-g | --failover-group *failover_group_ID*

Specifies the failover group ID for the configured circuit. The valid range is 0 to 9, where 0 is the default failover group. The circuit failover groups must be defined at both ends of the extension tunnel and each failover group should include at least one metric 0 and one

metric 1 circuit. If all metric 0 circuits in the failover group go down, the transmission fails over to the metric 1 circuits in the group. If all metric 0 circuits in a tunnel go down, by default the traffic will run over the metric 1 circuits.

-m |--min-retrans-time *time*

Specifies the minimum time interval in milliseconds between retransmits. The valid range is 20 ms to 5000 ms. The default value is 100 ms. This operand is supported on the Brocade FX8-24 blade only.

-r | --max-retransmits *retransmissions*

Specifies the maximum number of retransmissions. The valid range is 1 to 16. The default value is 8. This operand is supported on the Brocade FX8-24 blade only.

-v | --vlan-tagging *vlan_id*

Creates an extension tunnel with VLAN Tagging and Class of Service (CoS). Specify a *vlan_id* in the range between 1 and 4094. If any other VLAN option is specified, the VLAN ID must also be specified. Refer to the IEEE 802.1p specification for more information.

You can configure VLAN tags when you create a circuit or after the fact by modifying a circuit. Note that adding or modifying the VLAN configuration after a circuit has been created is a disruptive operation. This operand is supported on the Brocade FX8-24 blade only.

You may also specify VLAN tagging per IP interface with the **portCfg vlantag** command. The VLAN configuration at the IP interface level is for non-data path traffic only. If the data path traffic is to be tagged, it must be done through the VLAN tagging option with the **fcip-circuit create** or **modify** command. Note that the circuit VLAN configuration takes priority over the IP interface VLAN configuration.

--l2cos-f-class *l2cos*

Specifies the Layer 2 Class of Service (L2CoS) value for F-Class Traffic. This priority setting controls connections between switches. The range is 0 to 7. The default is 0.

--l2cos-high *l2cos*

Specifies the L2CoS value for FC High Priority Traffic. The range is 0 to 7. The default is 0.

--l2cos-medium *l2cos*

Specifies the L2CoS value for FC Medium Priority Traffic. The range is 0 to 7. The default is 0.

--l2cos-low *l2cos*

Specifies the L2CoS value for FC Low Priority Traffic. The range is 0 to7. The default is 0.

--l2cos-ip-high *l2cos*

Specifies the L2CoS value for IP High Priority Traffic. The range is 0 to 7. The default is 0. This parameter is supports on the Brocade 7840 switch, Brocade 7810 switch, and the Brocade SX6 extension blade only.

--l2cos-ip-medium *l2cos*

Specifies the L2CoS value for IP Medium Priority Traffic. The range is 0 to 7. The default is 0. This parameter is supports on the Brocade 7840 switch, Brocade 7810 switch, and the Brocade SX6 extension blade only.

--l2cos-ip-low *l2cos*

Specifies the L2CoS value for IP Low Priority Traffic. The range is 0 to7. The default is 0. This parameter is supports on the Brocade 7840 switch, the Brocade 7810 switch, and the Brocade SX6 extension blade only.

--dscp-f-class *dscp*

Specifies the DSCP value for F-Class Traffic. The range is 0 to 63. The default value is 0.

--dscp-high *dscp*

Specifies the DSCP value for FC High Priority. The range is 0 to 63. The default value is 0.

--dscp-medium *dscp*

Specifies the DSCP value for FC Medium Priority. The range is 0 to 63. The default value is 0.

--dscp-low *dscp*

Specifies the DSCP value for FC Low Priority. The range is 0 to 63. The default value is 0.

--dscp-ip-high *dscp*

Specifies the DSCP value for IP High Priority. The range is 0 to 63. The default value is 0. This parameter is supported only on Brocade 7840 switch, Brocade 7810 switch, and the Brocade SX6 extension blade.

--dscp-ip-medium *dscp*

Specifies the DSCP value for IP Medium Priority. The range is 0 to 63. The default value is 0. This parameter is supported only on Brocade 7840, Brocade 7810 switch, switch and the Brocade SX6 extension blade.

--dscp-ip-low *dscp*

Specifies the DSCP value for IP Low Priority. The range is 0 to 63. The default value is 0. This parameter is supported only on Brocade 7840 switch, Brocade 7810 switch, and the Brocade SX6 extension blade.

delete *tunnel_ID*

> Deletes the specified extension tunnel. This command deletes all associated circuits created with the **fciptunnel** or **fcipcircuit** commands. Use the **portShow** command to display all tunnels and their associated circuits.

fcipcircuit

> Creates an extension circuit on an existing tunnel. Use this command to configure additional circuits. The circuit-specific parameters are optional. The syntax for **portcfg fcipcircuit** is as follows:

> **portcfg fcipcircuit** [*slot/*]*ve_port option circuit_ID options* [*arguments*] [*optional_arguments*]

> The following options and arguments are supported with **fcipcircuit**:

create *circuit_ID* **-D | --remote-ip** *remote_ip_addr* **-S | --local-ip** *local_ip_addr* **-b | --min-comm-rate** *value in Kb/s* **-B|--max-comm-rate** *value in Kb/s* **[***circuit_arguments***]**

> Creates an extension circuit. You must specify the following parameters when creating an additional circuit:

circuit_ID

> Specifies a numeric identifier for the circuit. The circuit ID is an integer value between 0-9 for both the Brocade FX8-24, and 0-7 for the Brocade 7840 switch and the Brocade 7810 switch.

-D | --remote-ip *remote_ip_addr*

> Specifies the IP address for the remote end of the circuit.

--local-ha-ip *ipaddress* **| none**

> Sets the local HA IP address to use for the circuit. This argument is applicable on the Brocade 7840 switch, Brocade 7810 switch, and the Brocade SX6 extension blade only.

--remote-ha-ip *ipaddress* **| none**

> Sets the remote HA IP address to use for the circuit. This argument is applicable on the Brocade 7840 switch, Brocade 7810 switch, and the Brocade SX6 extension blade only.

-S | --local-ip *local_ip_addr*

> Specifies the IP address for the local end of the circuit.

-b | --min-comm-rate *value in Kb/s* **-B | --max-comm-rate** *value in Kb/s*

> You can set a minimum and a maximum for the committed rate to configure the tunnel for Adaptive Rate Limiting (ARL), which allows for a more effective sharing of bandwidth

between applications. For Brocade FX8-24, the valid range is 10,000 Kb/s to 1,000,000 Kb/s for 1G ports and 10,000 Kb/s to 10,000,000 Kb/s for 10G ports. For Brocade 7840, Brocade 7810 switch, and the Brocade SX6 extension blade, the valid range is 20,000 Kb/s to 10,000,000 Kb/s. The maximum committed rate can be no larger than five times the minimum committed rate, and both sides of the circuit must have matching configurations.

modify [*circuit_ID*] [*circuit_arguments*]

Modifies the properties of an existing extension circuit. To modify a circuit, you must specify at least one of the optional circuit parameters for the command to be effective. Any circuit attribute you change with the **fcipcircuit modify** command affects only the specified circuit. All other circuits remain unchanged.

--sla *sla_name* | none

Assigns an SLA to a circuit. Make sure to configure the other end of the circuit with a matching SLA. Specify **none** to remove the SLA for a circuit.

Refer to **fciptunnel create** and **modify** for a listing of other optional circuit arguments and their descriptions.

delete *circuit_ID*

Deletes the specified extension circuit.

Examples

To create a FICON-enabled tunnel, first create an empty extension tunnel without any circuits:

```
switch:admin> portcfg fciptunnel 1/12 create
Operation succeeded
```

To enable FICON and compression on the tunnel (this sets the keepalive timeout value to 1000 ms, which is the default for FICON-enabled tunnels):

```
switch:admin> portcfg fciptunnel 1/12 modify -c hardware -F enable
Operation succeeded
```

To create two circuits (circuit 0 and circuit 1) on the tunnel (these circuits will be created with the FICON-compatible keepalive timeout value):

```
switch:admin> portcfg fcipcircuit 1/12 create \
   0 192.168.51.61 192.168.50.68 -b 300000 -B 500000
Operation succeeded
switch:admin> portcfg fcipcircuit 1/12 create
   1 192.168.50.61 192.168.51.68 -b 300000 -B 500000
Operation succeeded
```

To display circuit 1:

```
switch:admin> portshow fcipcircuit 1/12 1
--------------------------------------------
Circuit ID: 1/12.1
     Circuit Num: 1
     Admin Status: Enabled
```

```
              Oper Status: In Progress
              Remote IP: 192.168.51.61
              Local IP: 192.168.51.68
              Metric: 0
              Failover Group ID: (Not Config/Active)
              Min Comm Rt: 300000
              Max Comm Rt: 500000
              SACK: On
              Min Retrans Time: 100
              Max Retransmits: 8
              Keepalive Timeout: 1000
              Path MTU Disc: 0
              VLAN ID: (Not Configured)
              L2CoS: (VLAN Not Configured)
              DSCP:  F:  0 H:  0 M:  0 L:  0
              Flags: 0x00000000
```

To set the compression rate to 'moderate' on the tunnel:

```
switch:admin> portcfg fciptunnel 1/12 modify -c moderate
Operation succeeded
```

To enable FICON XRC and Teradata emulation on the tunnel:

```
switch:admin> portcfg fciptunnel 1/12 modify  \
     --ficon-xrc enable --ficon-tera-read enable --ficon-tera-write enable
Operation succeeded
```

To enable printer emulation on the tunnel:

```
switch:admin> portcfg fciptunnel 1/12 modify  \
     --ficon-print enable
Operation succeeded
```

To configure FCIP FastWrite and Tape Pipelining on the tunnel:

```
switch:admin> portcfg fciptunnel 1/12 modify -f enable -t enable
Operation succeeded
```

To set the bandwidth distribution mode to "protocol" and adjust the FC and IP bandwidth ratios for an IP-Extension enabled tunnel on a Brocade 7840 switch:

```
switch:admin> portcfg fciptunnel 24 create --distribution protocol,60,40
Operation succeeded
```

To create a circuit on the tunnel with the failover group ID and verify the configuration (in this example, the OpStatus "FGrpWrn" indicates that the failover group is defined but there is not at least one metric 0 and one metric 1 circuit as part of the failover group):

```
switch:admin> portcfg fcipcircuit 1/22 create 2 \
     --remote-ip 1.42.128.93 --local-ip 1.42.128.23 --min-comm-rate 500000 -
-max-comm-rate 500000 -x 1 -g 1
Operation succeeded
switch:admin> portshow fciptunnel all -c
----------------------------------------------------------------------
--------
Tunnel Circuit  OpStatus  Flags   Uptime  TxMBps  RxMBps ConnCnt CommRt
Met/G
```

```
-----------------------------------------------------------------------
--------
1/22   -        FGrpWrn cft---- 20m26s   0.00    0.00    1      -     -/-
1/22   0 1/xge0  Up       ---4--s 20m26s   0.00    0.00    1  3000/
5000  0/-
1/22   1 1/xge0  Up       ---4--s    3s   0.00    0.00    2  3000/5000  0/-
1/22   2 1/xge0  Up       ---4--s   2m7s   0.00    0.00    1  5000/5000  1/1
-----------------------------------------------------------------------
--------
```

To set the failover group for circuit 1 and verify the configuration:

```
switch:admin> portcfg fcipcircuit 1/12 modify 1 -g 1
Operation succeeded
switch:admin> portshow fciptunnel all -c
-----------------------------------------------------------------------
--------
Tunnel Circuit  OpStatus  Flags   Uptime  TxMBps  RxMBps ConnCnt CommRt
Met/G
-----------------------------------------------------------------------
--------
1/22   -        Up      cft---- 26m51s   0.00    0.00    1      -     -/-
1/22   0 1/xge0  Up       ---4--s 20m26s   0.00    0.00    1  3000/
5000  0/-
1/22   1 1/xge0  Up       ---4--s    3s   0.00    0.00    2  3000/5000  0/1
1/22   2 1/xge0  Up       ---4--s   2m7s   0.00    0.00    1  5000/5000  1/1
-----------------------------------------------------------------------
--------
```

To delete circuit 1:

```
switch:admin> portcfg fcipcircuit 1/12 delete 1
Operation succeeded
```

To create a tunnel with VLAN tagging:

1)   Create a tunnel with VLAN tagging set.

```
switch:admin> portcfg fciptunnel 16 create  \
     -D 192.168.2.10 -S 192.168.2.10 -b 2500000 -B 2500000 -v 100
Operation Succeeded
```
2)   Create a circuit with VLAN tagging set.

```
switch:admin> portcfg fcipcircuit 16 create 1  \
     -D 192.168.2.11 -S 192.168.2.11 -b 2500000 -B 2500000 -v 200
Operation Succeeded
```
3)   Modify an existing circuit to change the VLAN tag and L2 CoS levels.

```
switch:admin> portcfg fcipcircuit 16 modify  \
     0 -v 300 --l2cos-f 7 --l2cos-h 5  \
     --l2cos-m 3 --l2cos-l 1
!!!! WARNING !!!!
Modify operation can disrupt the traffic on the
fcipcircuit specified for a brief period of time. This
operation will bring the existing circuit down
(if circuit is up) before applying new configuration.
```

```
Continue with Modification (Y,y,N,n): [n] y
Operation Succeeded
```
4)   Modify existing circuit to change DSCP marking values

```
switch:admin> portcfg fcipcircuit 16 modify 0  \
     --dscp-f 32 --dscp-h 16 --dscp-m 8 --dscp-l 4
Operation Succeeded
```
5)   Display the tunnel configuration and circuit values.

```
switch:admin> portshow fciptunnel 24 -c
-------------------------------------------
Tunnel: VE-Port:24 (idx:0, DP0)
 =====================================================
  Oper State          : Online
  TID                 : 24
  Flags               : 0x00000000
  IP-Extension        : Disabled
  Compression         : None
  QoS BW Ratio        : 50% / 30% / 20%
  Fastwrite           : Disabled
  Tape Pipelining     : Disabled
  IPSec               : Enabled
  IPSec-Policy        : myPolicy1
  Load-Level (Cfg/Peer): Failover (Failover / Failover)
  Local WWN           : 10:00:00:05:33:65:82:c8
  Peer WWN            : 10:00:00:05:33:65:84:08
  RemWWN (config)     : 00:00:00:00:00:00:00:00
  cfgmask             : 0x0000001f 0x4000020c
  Flow Status         : 0
  ConCount/Duration   : 2 / 2h41s
  Uptime              : 1h31m59s
  Stats Duration      : 1h31m59s
  Receiver Stats      : 1020072 bytes / 6534 pkts /  210.00 Bps Avg
  Sender Stats        : 835204 bytes / 6535 pkts /  173.00 Bps Avg
  TCP Bytes In/Out    : 28609996 / 35324148
  ReTx/OOO/SloSt/DupAck: 0 / 0 / 0 / 0
  RTT (min/avg/max)   : 1 / 1 / 1 ms
  Wan Util            : 0.0%
  TxQ Util            : 0.0%

Circuit 24.0 (DP0)
 =====================================================
  Admin/Oper State    : Enabled / Online
  Flags               : 0x00000000
  IP Addr (L/R)       : 10.1.8.77 ge8 <-> 10.1.8.76
  HA IP Addr (L/R)    : 0.0.0.0 ge0 <-> 0.0.0.0
  Configured Comm Rates: 1000000 / 1000000 kbps
  Peer Comm Rates     : 1000000 / 1000000 kbps
  Actual Comm Rates   : 1000000 / 1000000 kbps
  Keepalive (Cfg/Peer) : 6000 (6000 / 6000) ms
  Metric              : 0
  Connection Type     : Default
  ARL-Type            : Auto
  PMTU                : Disabled
```

```
      SLA                 : (none)
      Failover Group      : 0
      VLAN-ID             : NONE
      L2Cos (FC:h/m/l)    : 0 / 0 / 0 (Ctrl:0)
      L2Cos (IP:h/m/l)    : 0 / 0 / 0
      DSCP (FC:h/m/l)     : 16 / 8 / 4 (Ctrl:32)
      DSCP (IP:h/m/l)     : 0 / 0 / 0
      cfgmask             : 0x40000000 0x01e10c2f
      Flow Status         : 0
      ConCount/Duration   : 2 / 2h42s
      Uptime              : 1h31m59s
      Stats Duration      : 1h31m59s
      Receiver Stats      : 515664 bytes / 3307 pkts /   97.00 Bps Avg
      Sender Stats        : 415636 bytes / 3269 pkts /   77.00 Bps Avg
      TCP Bytes In/Out    : 19805096 / 23191360
      ReTx/OOO/SloSt/DupAck: 0 / 0 / 0 / 0
      RTT (min/avg/max)   : 1 / 1 / 1 ms
      Wan Util            : 0.0%

   Circuit 24.1 (DP0)
   =======================================================
      Admin/Oper State    : Enabled / Online
      Flags               : 0x00000000
      IP Addr (L/R)       : 192.168.0.20 ge6 <-> 192.168.0.10
      HA IP Addr (L/R)    : 0.0.0.0 ge0 <-> 0.0.0.0
      Configured Comm Rates: 1000000 / 1000000 kbps
     Peer Comm Rates      : 1000000 / 1000000 kbps
      Actual Comm Rates   : 1000000 / 1000000 kbps
      Keepalive (Cfg/Peer) : 6000 (6000 / 6000) ms
      Metric              : 0
      Connection Type     : Default
      ARL-Type            : Auto
      PMTU                : Disabled
      SLA                 : (none)
      Failover Group      : 0
      VLAN-ID             : NONE
      L2Cos (FC:h/m/l)    : 0 / 0 / 0 (Ctrl:0)
      L2Cos (IP:h/m/l)    : 0 / 0 / 0
      DSCP (FC:h/m/l)     : 16 / 8 / 4 (Ctrl:32)
      DSCP (IP:h/m/l)     : 0 / 0 / 0
      cfgmask             : 0x40000000 0x01e00c2f
      Flow Status         : 0
      ConCount/Duration   : 2 / 1h48m37s
      Uptime              : 1h31m59s
      Stats Duration      : 1h31m59s
      Receiver Stats      : 504408 bytes / 3227 pkts /  103.00 Bps Avg
      Sender Stats        : 419568 bytes / 3266 pkts /   88.00 Bps Avg
      TCP Bytes In/Out    : 16794424 / 20191296
      ReTx/OOO/SloSt/DupAck: 0 / 0 / 0 / 0
      RTT (min/avg/max)   : 1 / 1 / 1 ms
      Wan Util            : 0.0%
```

To enable legacy QoS mode for a FCIP tunnel:

```
switch:admin> portcfg fciptunnel 24 modify --legacy-qos-mode enable
Operation Succeeded
switch:admin> portshow fciptunnel
Tunnel Circuit OpStatus Flags   Uptime  TxMBps  RxMBps ConnCnt CommRt
Met/G
------------------------------------------------------------------------
-----------
 24    -        Degrade l-------I 1h21m16s  0.00    0.00   3      -      -
 25    -        Up      --------I 1h21m16s  0.00    0.00   1      -      -
 26    -        Degrade --i------ 1h21m24s  0.00    0.00   2      -      -
 34    -        Degrade --i------ 1h21m23s  0.00    0.00   2      -      -
 35    -        Up      --i------ 1h21m20s  0.00    0.00   2      -      -
 36    -        Up      --------I 1h21m11s  0.00    0.00   1      -      -
------------------------------------------------------------------------
-----------
 Flags (tunnel): l=Legacy QOS Mode
                 i=IPSec f=Fastwrite T=TapePipelining F=FICON r=ReservedBW
                    a=FastDeflate d=Deflate D=AggrDeflate P=Protocol
                    I=IP-Ext
```

To modify an existing circuit so it becomes the listener:

```
switch:admin> portcfg fcipcircuit 16 modify 2 -C 1


!!!! WARNING !!!!
Modify operation can disrupt the traffic on the fcipcircuit specified \
for a brief period of time. This operation will bring the existing \
circuit down (if circuit is up) before applying new configuration.


Continue with Modification (Y,y,N,n): [n]y
Operation Succeeded
```

To modify an existing circuit so it becomes the initiator (the following example uses the string option):

```
switch:admin> portcfg fcipcircuit 16 \
       modify 2 --connection-type initiator


!!!! WARNING !!!!
Modify operation can disrupt the traffic on the fcipcircuit specified \

for a brief period of time. This operation will bring the existing \
circuit down (if circuit is up) before applying new configuration.


Continue with Modification (Y,y,N,n): [n]y
Operation Succeeded
```

To configure an IPSec-enabled tunnel to connect with an IPSec-configured tunnel in legacy mode:

```
switch:admin> portcfg fciptunnel 8/12 modify --legacy enable


!!!! WARNING !!!!
Modify operation can disrupt the traffic on the fciptunnel specified \
for a brief period of time. This operation will bring the existing \
tunnel down (if tunnel is up) before applying new configuration.\
```

```
Continue with Modification (Y,y,N,n): [n]y
Tunnel 8/12 modify: Operation Succeeded
```

See Also

configure, portCfgShow, portShow, switchShow

portCfgAlpa

Configures the AL_PA offset on a specified port or range of ports.

Synopsis

portcfgalpa [*slot/*]*port, mode*

Description

Use this command to set the Arbitrated Loop Physical Address (AL_PA) offset on a port or a range of ports to either 0x0 (default) or 0x13.

Changes made by this command are persistent across switch reboots and power cycles.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

The Fabric OS port configuration commands are not supported on FCoE ports.

This command is not supported on the Brocade Analytics Monitoring Platform.

Operands

When invoked without operands, this command displays the usage. The following operands are supported:

slot

> For bladed systems only, specify the slot number of the port to be configured, followed by a slash (/).

port

> Specify the number of the port to be configured, relative to its slot for bladed systems. Use the **switchShow** command for a list of valid ports.

mode

> Specify a value of 1 to set the AL_PA to 0x13. A value of 0 sets the default AL_PA to 0x0. This operand is required.

Examples

To configure a port with AL_PA 0x0 (default):

switch:admin> **portcfgalpa 1/3 0**

To configure a port with AL_PA 0x13:

switch:admin> **portcfgalpa 1/3 1**

See Also

portCfgShow

portCfgAutoDisable

Manages the port autodisable configuration.

Synopsis

```
portcfgautodisable --enable [slot/]port[-port]
portcfgautodisable --disable [slot/]port[-port]
portcfgautodisable --add option [slot/]port[-port]
portcfgautodisable --remove option [slot/]port[-port]
portcfgautodisable --addall [slot/]port[-port]
portcfgautodisable --removeall [slot/]port[-port]
portcfgautodisable --addexcept option [slot/]port[-port]
portcfgautodisable --show [slot/]port[-port]
portcfgautodisable --suspend
portcfgautodisable --resume
portcfgautodisable --help
```

Description

Use this command to enable or disable the autodisable feature for a specified port or a range of ports and to manage the configuration. If the ports are already in the requested configuration, no action is taken. If a range of ports is specified, some of which are already in the requested configuration, no action is taken for those ports. All other ports in the specified range are updated. Execution of this command is nondisruptive.

The autodisable feature is by default disabled for all ports.

Use the **--suspend** and **--resume** options respectively to temporarily suspend and resume the configuration in the current logical switch. These states are persistent across reboots and HA failover.

The port autodisable feature minimizes traffic disruption introduced in some instances of automatic port recovery. When the autodisable flag is set, you can specify the conditions that will prevent the port to reinitialize. Such conditions include loss of sync, loss of signal, OLS, NOS, and LIP. Refer to the operand section for an explanation of these conditions. Note that a link reset does not cause a port autodisable. When a port is in FICON Management Server (FMS) mode, an autodisabled port remains persistently disabled across High Availability (HA) failover. In all cases, you can bring the automatically disabled port back into service using the **portEnable** command.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

This command is not supported on GbE ports, VE_Ports, logical interswitch links (LISLs), or FCoE ports.

Operands

This command has the following operands:

slot

    Specifies the slot number on bladed systems, followed by a slash (/).

port[*-port*]

    Specifies a port or a port range, relative to the slot number on bladed systems, for example, 5/17-29.

--enable

    Enables the autodisable feature on the specified ports.

--disable

    Disables the autodisable feature on the specified ports.

--add

    Specifies one or more trigger conditions that will disable the specified ports. Trigger conditions must be separated by a space, for example, LOSN OLS LIP. Trigger conditions are case insensitive.

--remove

    Removes one or more trigger conditions from the port autodisable configuration.

--addall

    Adds all supported trigger conditions to the port autodisable configuration.

--removeall

    Removes all supported trigger conditions from the port autodisable configuration. This command removes the triggers only; it does not disable the port autodisable flag.

--addexcept

    Adds all supported trigger conditions to the port autodisable configuration except the one specified .

--show

    Displays the port autodisable configuration.

--suspend

    Suspends the current port autodisable configuration temporarily.

--resume

    Resumes the suspended port autodisable configuration.

--help

> Displays command usage.

option

> Specify one or more the following options (supported with the **--add**, **--remove**, and **--addexcept** operands):

LOSN

> Loss of Sync

LOSNG

> Loss of Signal

OLS

> Offline Primitive Sequence

NOS

> Not Operational Primitive Sequence

LIP

> Loop Initialization Primitive Sequence

Examples

> To disable the port autodisable feature on single port:

```
switch:admin> portcfgautodisable --disable 18
switch:admin> portcfgautodisable --show 18
Port Auto Disable: OFF
Configured Option(s):No events configured. Port will
   not be automatically disabled.
```

> To enable the port autodisable feature on a single port:

```
switch:admin> portcfgautodisable --enable 18
switch:admin> portcfgautodisable --show 18
Port Auto Disable: ON
MODE             : RESUME
Configured Option(s):No events configured. Port will
   not be automatically disabled.
```

> To add multiple trigger conditions to the port autodisable configuration on a single port:

```
switch:admin> portcfgautodisable --add losn lip ols 18
switch:admin> portcfgautodisable --show 18
Port Auto Disable: ON
MODE             : RESUME
Configured Option(s): LOSN  OLS  LIP
```

To add all trigger conditions except the LOSN condition:

```
switch:admin> portcfgautodisable --addexcept LOSN 18
switch:admin> portcfgautodisable --show 18
Port Auto Disable: ON
MODE             : RESUME
Configured Option(s): LOSG  OLS  NOS  LIP
```

To attempt to enable and configure the port autodisable feature on a port for which the feature is already activated (the configuration is not updated):

```
switch:admin> portcfgautodisable --show 18
Port Auto Disable: ON
MODE             : RESUME
Configured Option(s): LOSG  OLS  NOS  LIP
switch:admin> portcfgautodisable --enable 18
Same configuration for port 18
switch:admin> portcfgautodisable --addexcept LOSN 18
Same configuration for port 18
```

To enable the port autodisable feature on a range of ports:

```
switch:admin> portcfgautodisable --enable 0-2
switch:admin> portcfgautodisable --show 0-2
Port Auto Disable: ON
MODE             : RESUME
Configured Option(s):No events configured.
Port will not be automatically disabled.

Port Auto Disable: ON
MODE             : RESUME
Configured Option(s):No events configured.
Port will not be automatically disabled.

Port Auto Disable: ON
MODE             : RESUME
Configured Option(s):No events configured.
Port will not be automatically disabled.
```

To enable the port autodisable feature for a range of ports, some of which were previously enabled (the configuration is applied only to those ports, for which an update is necessary, that is, port 3 in the following example):

```
switch:admin> portcfgautodisable --enable 0-3
Same configuration for port 0
Same configuration for port 1
Same configuration for port 2
```

To suspend the port autodisable configurations:

```
switch:admin> portcfgautodisable --suspend
Suspending Port Auto Disable will de-activate the triggers \
for all ports configured with Port autodisable conditions on this
Logical Switch.
Would you like to continue [y/n]?: y
PAD option is set to 'SUSPEND'
switch:admin> portcfgautodisable --show 18
```

```
Port Auto Disable: ON
MODE             : SUSPEND
Configured Option(s): LOSG  OLS  NOS  LIP
```

To resume the suspended port autodisable configurations:

```
switch:admin> portcfgautodisable --resume
PAD option is set to 'RESUME'
switch:admin> portcfgautodisable --show 18
Port Auto Disable: ON
MODE             : RESUME
Configured Option(s): LOSG  OLS  NOS  LIP
```

See Also

portCfgShow, portEnable

portCfgBreakout

Enables or disables QSFP breakout and non-breakout mode for QUAD ports.

Synopsis

> **portcfgbreakout** [**--enable** | **--disable**] [*slot/*]*port*

Description

Use this command to enable or disable breakout mode of Quad ports.

The QSFP breakout option is supported only on Ethernet ports.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--enable

Enables QSFP breakout mode for all the ports from the quad and will be online.

--disable

Disables QSFP breakout mode. The primary port will be online and all secondary ports will be persistently disabled with a reason stating **QSFP Secondary port**.

port

Specifies the port number.

[*slot/*]

Specify the slot number on chassis based switches.

Examples

To enable breakout mode:

```
switch:admin> portcfgbreakout --enable 8/60
switch:admin> switchshow | grep "  8  " | tail -n 4
 252    8   60   02fc00   id    10G        Online      ETH
 253    8   61   02fd00   id    10G        Online      ETH
 254    8   62   02fe00   id    10G        Online      ETH
 255    8   63   02ff00   id    10G        Online      ETH
```

To disable breakout mode:

```
switch:admin> portcfgbreakout --disable 8/60
```

See Also

portCfgShow, portCfgFlexport

portCfgCleanAddress

Sets the associated port configuration either to enable or disable the Clean Addres Bit support. This command provides a partial implementation of Clean Address Bit within this version of firmware. This command should NOT be used unless explicitly instructed to do so by your support provider. Doing so otherwise may cause unpredictable device behavior and is not supported.

Synopsis

```
portcfgcleanaddress --enable [[slot/]port | port_range | *]
portcfgcleanaddress --disable [[slot/]port | port_range | *]
portcfgcleanaddress --help
```

Description

This command enables or disables Clean Address Bit for a specified port or port range. Supported only on the F_Ports.

This command is not supported on the Ethernet ports, Logical ports, or SIM ports.

This command is not supported on AG mode and on the Standby CP.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--enable | --disable

> Enables or disables support of the Clean Address Bit within the LS_ACC response frame for the specified port or port range. If enabled, the FC Standards compliant behavior takes effect for FLOGI and FDISC login responses on the specified port(s). The option is disabled by default.

[slot]/port

> Enables or disables Clean Address Bit on the specified port. Also allows port range.

*

> Enables or disables Clean Address Bit on all applicable ports.

--help

> Displays the command usage.

Examples

To enable clean address bit on the specified port range:

```
switch:admin> portcfgcleanaddress --enable 1/0

switch:admin> portcfgshow -slot 1
Index:                 0   1   2   3    4   5   6   7    8   9  10  11   12  13  14  15
------------------+--+--+--+--+---+--+--+--+---+--+--+--+---+--+--+--
Octet Speed Combo  1   1   1   1    1   1   1   1    1   1   1   1    1   1   1   1
Speed              AN  AN  AN  AN   AN  AN  AN  AN   AN  AN  AN  AN   AN  AN  AN  AN
AL_PA Offset 13    ..  ..  ..  ..   ..  ..  ..  ..   ..  ..  ..  ..   ..  ..  ..  ..
Trunk Port         ON  ON  ON  ON   ON  ON  ON  ON   ON  ON  ON  ON   ON  ON  ON  ON
Long Distance      ..  ..  ..  ..   ..  ..  ..  ..   ..  ..  ..  ..   ..  ..  ..  ..
VC Link Init       ..  ..  ..  ..   ..  ..  ..  ..   ..  ..  ..  ..   ..  ..  ..  ..
Locked L_Port      ..  ..  ..  ..   ..  ..  ..  ..   ..  ..  ..  ..   ..  ..  ..  ..
Locked G_Port      ..  ..  ..  ..   ..  ..  ..  ..   ..  ..  ..  ..   ..  ..  ..  ..
Disabled E_Port    ..  ..  ..  ..   ..  ..  ..  ..   ..  ..  ..  ..   ..  ..  ..  ..
Locked E_Port      ..  ..  ..  ..   ..  ..  ..  ..   ..  ..  ..  ..   ..  ..  ..  ..
ISL R_RDY Mode     ..  ..  ..  ..   ..  ..  ..  ..   ..  ..  ..  ..   ..  ..  ..  ..
RSCN Suppressed    ..  ..  ..  ..   ..  ..  ..  ..   ..  ..  ..  ..   ..  ..  ..  ..
Persistent Disable..  ..  ..  ..   ..  ..  ..  ..   ..  ..  ..  ..   ..  ..  ..  ..
LOS TOV mode       0   2   2   1    2   1   1   0    0   0   0   0    0   0   0   0
NPIV capability    ON  ON  ON  ON   ON  ON  ON  ON   ON  ON  ON  ON   ON  ON  ON  ON
NPIV PP Limit      90  90  90  90   90  90  90  90   90  90  90  90   90  90  90  90
NPIV FLOGI Logout  ON  ON  ON  ON   ON  ON  ON  ON   ON  ON  ON  ON   ON  ON  ON  ON
QOS E_Port         AE  AE  AE  AE   AE  AE  AE  AE   AE  AE  AE  AE   ..  ..  ..  ..
EX Port            ..  ..  ..  ..   ..  ..  ..  ..   ..  ..  ..  ..   ..  ..  ..  ..
Mirror Port        ..  ..  ..  ..   ..  ..  ..  ..   ..  ..  ..  ..   ..  ..  ..  ..
Rate Limit         ..  ..  ..  ..   ..  ..  ..  ..   ..  ..  ..  ..   ..  ..  ..  ..
Credit Recovery    ON  ON  ON  ON   ON  ON  ON  ON   ON  ON  ON  ON   ON  ON  ON  ON
Fport Buffers      ..  ..  ..  ..   ..  ..  ..  ..   ..  ..  ..  ..   ..  ..  ..  ..
Port Auto Disable  ..  ..  ..  ..   ..  ..  ..  ..   ..  ..  ..  ..   ..  ..  ..  ..
CSCTL mode         ..  ..  ..  ..   ..  ..  ..  ..   ..  ..  ..  ..   ..  ..  ..  ..
TDZ mode           ..  ..  ..  ..   ..  ..  ..  ..   ..  ..  ..  ..   ..  ..  ..  ..
D-Port mode        ..  ..  ..  ..   ..  ..  ..  ..   ..  ..  ..  ..   ..  ..  ..  ..
D-Port over DWDM   ..  ..  ..  ..   ..  ..  ..  ..   ..  ..  ..  ..   ..  ..  ..  ..
Compression        ..  ..  ..  ..   ..  ..  ..  ..   ..  ..  ..  ..   ..  ..  ..  ..
Encryption         ..  ..  ..  ..   ..  ..  ..  ..   ..  ..  ..  ..   ..  ..  ..  ..
10G/16G FEC        ON  ON  ON  ON   ON  ON  ON  ON   ON  ON  ON  ON   ON  ON  ON  ON
16G FEC via TTS    ..  ..  ..  ..   ..  ..  ..  ..   ..  ..  ..  ..   ..  ..  ..  ..
Fault Delay        0   0   0   0    0   0   0   0    0   0   0   0    0   0   0   0
SIM Port           ..  ..  ..  ..   ..  ..  ..  ..   ..  ..  ..  ..   ..  ..  ..  ..
8G Non-DFE         ..  ..  ..  ..   ..  ..  ..  ..   ..  ..  ..  ..   ..  ..  ..  ..
TDZ mode           ..  ..  ..  ..   ..  ..  ..  ..   ..  ..  ..  ..   ..  ..  ..  ..
Clean Address Bit  ON  ..  ..  ..   ..  ..  ..  ..   ..  ..  ..  ..   ..  ..  ..  ..
```

See Also

portCfgShow

portCfgCompress

Configures a port for compression.

Synopsis

```
portcfgcompress --enable [slot]/port
portcfgcompress --disable [slot]/port
portcfgcompress --help
```

Description

Use this command to configure a port for compression. This command enables or disables the compression configuration on the specified port, and saves the configuration persistently.

Configuring a port for compression is disruptive. You must disable the port before you can enable compression on the port. This command fails on an enabled port.

The number of configurable ports is limited per ASIC. A message will be displayed once the maximum number is exceeded. Use the **portEncCompShow** for a listing of configurable ports per ASIC.

Notes

This command is supported only on E_Ports. An E_Port can be enabled for compression and for encryption at the same time.

When you move a configured port to another logical switch, you are informed that the operation requires the port configuration to be disabled. You are given the choice to cancel the move or to continue. If you want to go ahead with the move and the port is configured for encryption or compression, you must disable the configuration prior to moving the port. You must reconfigure the port on the target switch if you want to use compression or encryption on that port.

This command is supported on 16Gb/s-capable platforms (running Fabric OS v7.0.0 or later with the exception of the Brocade 6505 switch and the Brocade FC8-32E and Brocade FC8-48E port blades) and on 32Gb/s-capable platforms (running Fabric OS v8.0.1 or later with the exception of the Brocade G610 switch).

Compression feature is not supported on Inter Chassis Link (ICL) ports.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

slot

On bladed systems only, specifies the slot number of the ports to be configured, followed by a slash (/).

port

>   Specifies the port to be configured.

--enable

>   Enables the compression configuration on the specified port.

--disable

>   Disables the compression configuration on the specified port.

--help

>   Displays the command usage.

Examples

>   To enable the compression configuration:

```
switch:admin> portcfgcompress --enable 2
switch:admin> lscfg --config 15 -port 2
This operation requires that the affected ports be disabled.
Would you like to continue [y/n]?: y
Checking for cap port 2
After Checking for cap port 2
val 1  port 2
lscfg: The port cannot be moved to the requested switch because
port or ports have Encryption/Compression enabled. Please disable
the Encryption/Compression configuration.
    FID:     15
    Slot:     0
    Port:     2
```

>   To disable the compression configuration:

```
switch:admin> portcfgcompress --disable 2
```

>   To enable compression configuration when maximum number is reached:

```
switch:admin> portcfgcompress --enable 2
Configuration is not allowed. Maximum number of ports is
already configured for Encryption/Compression.
```

See Also

>   portCfgEncrypt, portEncCompShow

portCfgCreditRecovery

Enables or disables credit recovery on a port.

Synopsis

```
portcfgcreditrecovery --enable [slot/]port
portcfgcreditrecovery --disable [slot/]port
portcfgcreditrecovery --help [slot/]port
```

Description

Use this command to enable or disable credit recovery on a port.

The credit recovery feature enables credits or frames to be recovered. The default credit recovery configuration is enabled.

Notes

This command is supported in Access Gateway mode.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

The Fabric OS port configuration commands are not supported on FCoE ports.

Operands

This command has the following operands:

--disable

Disables credit recovery configuration on the specified port.

--enable

Enables credit recovery configuration on the specified port.

--help

Displays the command usage.

Examples

To enable credit recovery on a port:

```
switch:admin> portcfgcreditrecovery --enable 3/15
```

To disable credit recovery on a port:

```
portcfgcreditrecovery --disable 3/15
```

See Also

portCfgShow

portCfgDefault

Resets the port configuration to factory default value.

Synopsis

```
portcfgdefault [slot/][ge]port
portcfgdefault --help
```

Description

Use this command to reset all configuration values on a specified port to their factory defaults. This command persistently disables ports capable of routing, which is the factory default value. Use the **portCfgShow** command to display the port configuration.

This command does not change the state of a port. To change the state of an E_Port, use either **switchDisable**/**switchEnable** or **portDisable**/**portEnable**.

When this command is used to reset an F_Port in an Access Gateway, that F_Port is unmapped from its mapping to an N_Port.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

This command is blocked if encryption is enabled on a 32Gb/s-capable port.

This command should be used with caution on Embedded switches, as it can alter the factory default settings. In addition, not all Embedded switches provide the same support for this command.

Operands

This command has the following operands:

slot

For bladed systems only, specifies the slot number of the port to be reset, followed by a slash (/).

port

Specifies the number of the port to be reset, relative to its slot for bladed systems. Use **switchShow** to list of valid ports.

--help

Displays the command usage.

Examples

To reset a port to factory defaults:

```
switch:admin> portcfgdefault 1/3
```

To reset a GbE port to factory defaults:

```
switch:admin> portcfgdefault 8/ge1
```

See Also

portCfgPersistentDisable, portCfgPersistentEnable, portCfgShow, portCfgSpeed, portCfgTrunkPort

portCfgDPort

Configures a port as a D_Port.

Synopsis

```
portcfgdport --enable [-dwdm] [slot/port_list]
portcfgdport --disable [-dwdm] [slot/]port_list]
portcfgdport --provision [-add] [-dwdm] [slot/]port_list]
portcfgdport --provision [-delete] [-dwdm] [slot/]port_list]
portcfgdport --provision [-show] [slot/]port_list
portcfgdport --help
```

Description

Use this command to configure a diagnostic port (D_Port). The D_Port is not part of the fabric. It does not carry any interswitch traffic or data traffic. The D_Port is used solely for the purpose of running link-level diagnostics between two switches, switch-HBA, AG-AG, or AG-HBA and to isolate link level fault on the port, in the small form factor pluggable (SFP), or in the cable.

You must configure both ends of the link between a given pair of switches, and you must disable the port before you can configure a D_Port. Re-enabling the D_Ports will automatically start the diagnostics when the ports come online.

The D_Port test performs the following diagnostics:

*   An electrical loopback test (supported only on 16 Gb and 32 Gb SFPs capable of electrical loopback)

*   An optical loopback test (supported only on 16 Gb and 32 Gb SFPs capable of optical loopback)

*   A link traffic test

*   A link distance measurement

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

This command is supported only on Fibre Channel ports. SFPs must be 10 Gb or 16 Gb Brocade-branded SFPs and run Fabric OS v7.0.0 or later on 16 Gb-capable platforms.

Beginning with Fabric OS v7.2.1 or later, the command is also supported on 8 Gb LWL/ELWL Brocade-branded SFPs, QSFPs or QSFP+ on 16 Gb-capable platforms.

D_Port configuration is not supported on EX_Ports, SIM-Ports, and ports configured in encryption mode or compression mode.

Links with mismatched D_Port configuration will be segmented or disabled.

Do not run D_Port tests on more than eight links at a time for normal (not long distance) links on FC16-64 blade. On a FC 16-64 blade, do not enable the On-Demand D_Port with **bladeInsert** or **slotPowerOn**.

Run D_Port test on one link at a time for 100 Km long distance ports on FC 16-64 blade. D_Port tests on other long distance links must be started only after the D_Port test completes on the previous long distance link.

Operands

This command has the following operands:

slot

On bladed systems only, specifies the slot number of the ports to be configured, followed by a slash (/).

port_list

Specifies one or more ports, relative to the slot on bladed systems. Use **switchShow** for a listing of valid ports. A port list should be enclosed in double quotation marks and can consist of the following:

- A single port, for example, "8" or "5/8" on blades systems.

- A port range where beginning and end port are separated by a dash, for example, "8-13" or "5/8-13" on blades systems. A port range cannot span multiple slots.

- A set of ports separated by commas, for example "3,5,7,8" or "5/3,5,7,8" on bladed systems.

- A wildcard * indicates all ports. The wildcard can be represented as '*' or "*".

--enable

Configures the specified port(s) as D_Port. You cannot configure the port as a D_Port while Dynamic D_Port tests are in progress on the port. The operation fails with an error message.

-dwdm

Skips the optical loopback test when you run the D_Port diagnostics over a Dense Wavelength Division Multiplexing (DWDM) link or any third party equipment that connects two switches. This operand is mandatory when you want to enable **-dwdm**. Executing **portcfgdport --enable -dwdm** will enable both D-Port mode and D-Port over DWDM.

--disable

Clears the D_Port configuration on the specified ports.

-dwdm

Disables DWDM mode on the D_Port. Use of this operand will only disable DWDM mode, leaving D_Port mode enabled.

--provision

> List of ports that are marked to be set as D_Ports. Use the **--enable** command to configure one or more ports from the list as D_Ports.

-add

> Adds the ports on the provision list to be configured as D_Ports.

-dwdm

> Provisions the specified ports for DWDM. This operand is optional.

-delete

> Removes the ports from the provision list.

-dwdm

> Disables DWDM provisioning on the specified ports. This operand is optional.

-show

> Lists all the ports in the provision list.

> If the port range is specified, the status of each port on the provision list displays. Displays ON if the port is in the provision list or OFF if the port is not in the provision list.

--help

> Displays the command usage.

Examples

> To configure a single port as a D_Port:

```
switch:admin> portdisable 42
switch:admin> portcfgdport --enable 42
Caution: D_Port functionality is only available on 16Gb-capable
platforms \
   with 16Gb FC SFPs, 10Gb FC SFPs, or 8Gb LWL/ELWL FC SFPs, QSFPs or
QSFP+.
switch:admin> portenable 42
```

> To clear the D_Port configuration:

```
switch:admin> portdisable 42
switch:admin> portcfgdport --disable 42
switch:admin> portenable 42
```

> To add a port to the D_Port provision list:

```
switch:admin> portcfgdport --provision -add -dwdm 7/16
Caution: D_Port functionality is only available on 16Gb-capable
platforms \
```

```
                    with 16Gb FC SFPs, 10Gb FC SFPs, 8Gb LWL/ELWL FC SFPs, QSFPs or QSFP+.
```

To remove a port from the provision list:

```
switch:admin> portcfgdport --provision -delete 4/12
```

To list all the ports in the provision list:

```
switch:admin> portcfgdport --provision -show
Port D-Port provision DWDM
============================
  16      ON          OFF
switch:admin> portcfgdport --provision -show
 Port D-Port provision DWDM
============================
  16      ON          ON
```

See Also

fabricLog, portCfg, portDPortTest, portShow, switchShow

portCfgEncrypt

Configures a port for encryption.

Synopsis

portcfgencrypt --enable [*slot*]/*port*
portcfgencrypt --disable [*slot*]/*port*
portcfgencrypt --help

Description

Use this command to configure a port for encryption. This command enables or disables the encryption configuration on the specified port and saves the configuration persistently.

Before you can configure a port for encryption, you must configure the port for authentication. When disabling encryption, you must disable the encryption configuration before you can disable authentication.

Configuring a port for encryption is disruptive. You must disable the port before you can enable encryption on the port. This command fails on an enabled port.

The number of configurable ports is limited per ASIC. Use the **portEncCompShow** for a listing of configurable ports per ASIC.

Notes

This command is supported on E_Ports. An E_Port and Ex_port can be enabled for compression and for encryption at the same time.

When you move a configured port to another logical switch, you are informed that the operation requires that the port configuration be disabled. You are given the choice to cancel the move or to continue. If you want to go ahead with the move and the port is configured for encryption or compression, you must disable the configuration prior to moving the port. You must reconfigure the port on the target switch if you want to use compression or encryption on that port.

This command is supported on 16Gb/s-capable platforms (running Fabric OS v7.0.0 or later), FC32-48 port blades in 32Gb/s-capable platforms (running Fabric OS v8.1.0 or later), Brocade G620 (running Fabric OS v8.2.0 or later), and Brocade G630 device (running Fabric OS v8.2.0a or later).

This command is not supported on Brocade 6505, Brocade G610, Brocade FC8-32E, Brocade FC8-48E, Brocade 7810, and Brocade SX6 port blades.

In-Flight Encryption feature is not supported on Inter Chassis Link (ICL) ports.

Each encryption port on the Brocade G620 requires an extra 105 buffers, which requires disabling and reserving ports 44 through 47 for support. If enough buffers are not available, the port cannot be configured for encryption. Use the **portBufferShow** command to map the buffer allocation and deallocation for the ports.

On the Brocade G620, ports 44 through 47 must be disabled for Encryption to be enabled on any other port. When enabling encryption, ports 44 through 47 will be reset to default values and then reserved, after confirmation from the user. The **-force** option bypasses the user

confirmation to reserve these ports. If ports 40 through 47 are in Octet combination mode 2, they must first be changed back to Octet combination 1 using the **portCfgOctetSpeedCombo** command in order to enable encryption.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

slot

On bladed systems only, specifies the slot number of the ports to be configured, followed by a slash (/).

port

Specifies the port to be configured.

--enable

Enables the encryption configuration on the specified port.

--disable

Disables the encryption configuration on the specified port.

-force|-f

Overrides the default behavior. This option is supported only on the Brocade G620 device.

--help

Displays the command usage.

Examples

To enable the encryption configuration:

```
switch:admin> portcfgencrypt --enable 2
```

To attempt to move a configured port to another logical switch:

```
switch:admin> lscfg --config 15 -port 2
This operation requires that the affected ports be disabled.
Would you like to continue [y/n]?: y
Checking for cap port 2
After Checking for cap port 2
val 1  port 2
lscfg: The port cannot be moved to the requested switch because
port or ports have Encryption/Compression enabled. Please disable
the Encryption/Compression configuration.
```

```
FID:      15
Slot:      0
Port:      2
```

To disable the encryption configuration:

```
switch:admin> portcfgencrypt --disable 2
```

See Also

authUtil, portCfgCompress, portEncCompShow, secAuthSecret

portCfgEport

Enables or disables E_Port capability on a port or locks down a port as an E_Port.

Synopsis

```
portcfgeport [slot/]port [-p] mode
portcfgeport -i [index1[-index2] [...] [-f] [-p] mode
portcfgeport -slot [slot1[-slot2] [...] [-p] mode
portcfgeport -h
```

Description

Use this command to enable or disable E_Port capability on a port or to lock down a port as an E_Port. E_Port capability is enabled by default. When an interswitch link (ISL) is connected to a port and the port's E_Port capability is disabled, the ISL is segmented, and all traffic between the switches stops. Fabric management data, such as zoning information, can no longer be exchanged through this port.

You can identify a single port to be configured by its port number or by its port index number. Port ranges are supported with index numbers or by specifying a slot or a slot range. Use **switchShow** for a listing of valid ports, slots, and port index numbers. When used without operands, this command displays all persistently disabled ports on the switch.

Specifying multiple ports with the index (**-i**) or slot (**-s**) option is supported only if **portSwap** is disabled. They are not supported on GbE ports and configured F_Port trunks. Use the **-i** option without a port index argument to display the **portSwap** status or alternately use **portSwapShow**.

By default, this command disables and re-enables the port and the port comes online with the new configuration setting. When used with the **-p** option, any configuration changes are updated immediately but only take effect on the next port toggle. The **portcfgshow** displays the changed configuration and uses auditlog to determine whether the configuration has taken effect or not.

Changes made by this command are persistent across switch reboots or power cycles.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Regardless of how many E_Ports are connected between two switches, the maximum routing paths are limited to 16 E_Ports.

The Fabric OS port configuration commands are not supported on FCoE ports.

This command is not supported on the Brocade Analytics Monitoring Platform.

Operands

This command has the following operands:

slot

    For bladed systems only, specifies the slot number of the port to be configured, followed by a slash (/).

port

    Specifies the number of the port to be configured, relative to its slot for bladed systems. Use **switchShow** to display a listing of valid ports.

-p

    Enables the passive option. Updates the configuration changes immediately but takes effect only on the next port toggle. This operand is optional.

-i *index1*[*-index2*]

    Specifies a range of ports identified by port index numbers. You may specify multiple index ranges separated by a space, for example, **-i** 33-38 40-60.

-f

    Ignores nonexisting ports. This operand is valid only with the **-i** option.

-slot [*slot1*[*-slot2*]

    Specifies all ports on a slot or on a range of slots, for example, **-s** 3-5. You may specify multiple slot ranges separated by a space, for example, **-s** 3-5 8-10.

mode

    Specifies the E_Port configuration as one of the following:

0

    Disables E_Port capability for the specified ports.

1

    Enables the ports as E_Ports. This is the default port state.

2

    Locks down the ports as E_Ports. This command effectively disables the port's F_Port capability.

-h

    Displays the command usage.

Examples

To disable E_Port capability on a port:

```
switch:admin> portcfgeport 1/3 0
```

To enable E_Port capability on a port:

```
switch:admin> portcfgeport 1/3 1
```

To lock down the port as an E_Port.

```
switch:admin> portcfgeport 1/3 2
```

To lock down the port as an E_Port using the passive option.

```
switch:admin> portcfgeport 1/3 -p 2
```

To disable E_Port capability on a range of ports specified by their index number:

```
switch:admin> portcfgeport -i 12-18 0
```

To enable E_Port capability on all ports of slot 3-5:

```
switch:admin> portcfgeport -s 3-5 1
```

See Also

portCfgEportCredits, portShow, portSwapDisable, portSwapShow, switchShow

portCfgEportCredits

Configures normal distance E_Port buffer allocation.

Synopsis

```
portcfgeportcredits --enable [slot/]port credits
portcfgeportcredits --disable [slot/]port
portcfgeportcredits --show [slot/]port
portcfgeportcredits --help
```

Description

Use this command to change the default credit allocation for a normal distance E_Port or EX_Port by allocating the specified number of credits to the port. When port credit allocation is enabled, the number of credits specified overrides the default E_Port credit allocation; that is, a new credit model is constructed based on the user-configured credits value. When the configuration is disabled, the default credit allocation (default credit model) is restored. Only a normal distance E_Port and EX_Port can utilize the new credit model constructed by this command, and the allocated credits are reserved only for that port.

ICL ports are supported and are used in conjunction with 2 km ICL QSFPs.

The E_Port credit configuration is persistent across system reboots and High Availability (HA) failover.

Use the **portcfgeportcredits --show** command to display the configured credits.

Use the **portBufferShow** command to determine current port buffer allocations.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

The E_Port credits feature does not support ports configured as F_Ports, Mirror Ports, L_Ports, and Trunk Areas. If E_Port credits are configured on ports, moving the ports from one logical switch to another logical switch is not permitted.

The Fabric OS port configuration commands are not supported on FCoE ports.

The E_Port credits are mutually exclusive with F_Port buffers, longdistance, ISL R_RDY, and Buffer Optimized mode.

This command is not supported on the Brocade Analytics Monitoring Platform.

Operands

This command has the following operands:

--enable

Enables the E_Port credit configuration on a specified port. A port and credits allocation must be specified with this option.

--disable

> Disables the E_Port credit configuration on a specified port.

--show

> Displays the credits configured on a specified port.

slot

> Specifies the slot number on bladed systems, followed by a slash (/).

port

> Specifies the port number.

credits

> Specifies the number of credits to be allocated to the specified port. The specified credit allocation takes effect when the E_Port comes online. This operand is required with the **--enable** option.

> The minimum credit allocation is 5 and the maximum is 40 for Gen 5 platform (16Gb/s-capable blades). For ICL ports on Gen 5 platform, the valid range is from 5 through 16. For Gen 6 platform, the credit allocation is allowed in the range between 5 to 160 for both ICL ports and normal ISL and EX Port links. On a Gen 6 platform, if the specified credit allocation is less than the default allocation, the default allocation scheme is enforced (in Gen 6 platform, 32Gb/s links are reserved 20 credits per VC). For Non-ICL, 32G 2km QSFP links are reserved with 100 credits per VC in QoS mode and 16 credits in Non QoS mode.

> The configured credits will be allocated for each of the medium virtual channels (VCs) for the non-QoS ports. For QoS ports, after sharing, both the medium and high VCs will have the configured credits allocated.

--help

> Displays the command usage.

Examples

To allocate 10 credits to an E_Port:

```
switch:admin> portcfgeportcredits --enable 12/6 10
Success.
```

To display the configured credits for an E_Port:

```
switch:admin> portcfgeportcredits --show 12/6
E-Port Credit Configured : 10
Success.
```

To disable the credit configuration and return to the default credit allocation:

```
switch:admin> portcfgeportcredits --disable 12/6
```

```
Success.
```

See Also

portBufferShow

portCfgEXPort

Sets a port to be an EX_Port, and sets and displays EX_Port configuration parameters.

Synopsis

```
portcfgexport [slot/]port [-port]
portcfgexport [-a admin]
portcfgexport [-f fabricid]
portcfgexport [-r ratov]
portcfgexport [-e edtov]
portcfgexport [-d domainid]
portcfgexport [-p pidformat]
portcfgexport [-t fabric_parameter]
portcfgexport --help
```

Description

Use this command to allow a port to be configured as an EX_Port, to display the port's EX_Port configuration, or to change the configuration. If no optional parameter is specified, the command displays the currently configured values; otherwise, it sets the specified attribute to its new value. The port must be disabled prior to setting EX_Port attributes. The port must be enabled before the port can become active following EX_Port parameter changes. Use **portDisable** and **portEnable** to disable or enable the port.

IPFC over FCR allows the routing of IPFC traffic between different EX_Ports where EX_Ports are connected to an edge fabric that has IPFC-capable devices. IPFC traffic is routed between EX and VEX Ports. IPFC traffic can be related to the same edge fabric or to different edge fabrics.

When the port is not active, the preferred domain ID is configurable. The preferred domain ID is used by the EX_Port's front phantom domain to request a domain ID from the principal switch. The domain ID received becomes the subsequent preferred domain ID, which is persistent and is displayed.

This command is also used to configure the Inter-Chassis Link (ICL) ports to be EX_Ports. The ICL EX_Port is supported only on the VF-enabled 16Gb/s and 32Gb/s-capable chassis. Setting ICL EX_Port configuration in a non-VF switch or non-base switch will display an error.

All EX_Ports within a quad small form-factor pluggable (QSFP) must be present in the base switch and in disabled state for configuring ICL EX_Ports. If an EX_Port within the same QSFP is moved from the base switch to a logical switch, EX_Port configuration cannot be applied to any of the ports in the QSFP. When specifying an ICL port, all four ports of the QSFP will be configured with the same EX_Port parameters.

Encryption and compression are not supported on an ICL EX_Ports. When this command is executed on ICL EX_Port without optional parameters, encryption and compression states are not displayed.

Notes

The fabric ID must be the same for every router port connected to the same edge fabric, and different for every edge fabric. If two ports are connected to the same fabric but have been

assigned different fabric IDs, one of them will be disabled due to a fabric ID oversubscription. If two fabrics have been assigned the same fabric ID, one of them will be disabled due to a fabric ID conflict.

When a port is changed from FL_Port to EX_Port, the topology is implicitly changed to point-to-point.

The front domain WWN field displays the WWN of the front domain. If the port is enabled and the state is "OK", the edge fabric principal switch domain ID and WWN also are displayed.

If the Fabric Parameter value is "Auto Negotiate", the port ID format, R_A_TOV, and E_D_TOV values display the negotiated values indicated by "(N)" next to them. The negotiated values are what the edge switch specifies in the ELP request. If the state is "Not OK", the R_A_TOV and E_D_TOV display "Not Applicable". By default, all EX_Ports are auto-ELP enabled.

If the Fabric Parameter attribute value is "User configured", the port ID format R_A_TOV and E_D_TOV values display the configured values.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

When invoked without operands, this command displays the usage. The following operands are supported:

slot

On bladed systems only, specifies the slot number followed by a slash (/).

port[-*port*]

Specifies a port or a port range, relative to the slot number on bladed systems, for example, 5/17-29. Use **switchShow** for a list of valid ports. When executed with [*slot/*]*port* [-*port*] only, the command displays the current port configuration.

-a *admin*

Enables or disables the specified port as an EX_Port. Valid values are 1 (enable as EX_Port), 2 (disable as EX_Port and enable as non-EX_Port). **portCfgDefault** may also be used to disable EX_Ports.

-f *fabricid*

Specifies the fabric ID. The valid values for FID are from 1 through 128 or the alias name of the fabric. The alias name is displayed, only if alias name exists for the corresponding Edge Fabric ID. Execute **fcrconfigure --show** to view the alias name configuration. If Fabric ID is not specified, FCR switch generates a valid Fabric ID from 1 through 128 and applies the value to the port's EX_Port configuration.

-r *ratov*

Specifies the R_A_TOV used for port negotiation. Valid values are 2000 to 120000. This operand is only applicable if the "Fabric Parameter" attribute value is not "Auto Negotiate".

-e *edtov*

>   Specifies the E_D_TOV used for port negotiation. Valid values are 1000 to 60000. This operand is only applicable if the "Fabric Parameter" attribute value is not "Auto Negotiate".

-d *domainid*

>   Specifies the preferred domain ID. For Brocade native mode, valid values are 1 to 239.

-p *pidformat*

>   Specifies the Port ID format. Valid values are 0-native, 1-core, 2-extended edge. This operand is applicable only when port mode is set to 0 (native mode). If port mode is not "Brocade Native", the Port ID format displays as "Not applicable".

-t *fabric_parameter*

>   Enables or disables negotiation of the fabric parameters. Valid values are 1 for enable and 2 for disable.

-- help

>   Displays the command usage.

Examples

>   To set the fabric ID of port 2/1 to 5 and the port ID format to core:
>
>   ```
>   switch:admin> portcfgexport 2/1 -f 5 -p 1
>   ```
>
>   To configure port 2/0 to be an EX_Port and set the fabric ID to 4:
>
>   ```
>   switch:admin> portcfgexport 2/0 -a 1 -f 4
>   ```
>
>   To disable fabric parameter negotiation on port 2/0 of an EX_Port:
>
>   ```
>   switch:admin> portcfgexport 2/0 -t 2
>   ```
>
>   To enable and EX_Port using alias name:
>
>   ```
>   switch:admin> portcfgexport 1/5 -a 1 -f Red_fabric
>   ```
>
>   To view the configuration of an EX_Port:
>
>   ```
>   switch:admin> portcfgexport 1/5
>   Port          1/5   info
>   Admin:              enabled
>   State:              OK
>   Pid format:         core(N)
>   Operate mode:       Brocade Native
>   Edge Fabric ID:     128
>   Alias name:         Red_fabric
>   Preferred Domain ID:     160
>   Front WWN:          50:00:51:e4:44:40:0e:80
>   Fabric Parameters:  Auto Negotiate
>   R_A_TOV:            10000(N)
>   ```

```
E_D_TOV:                2000(N)
Authentication Type: DHCHAP
DH Group: 4
Hash Algorithm: SHA-1
Encryption: ON
Compression: ON
Forward Error Correction: ON
Edge fabric's primary wwn: N/A
Edge fabric's version stamp: N/A
```

To view the configuration of an ICL EX_Port:

```
switch:admin> portcfgexport 5/12
Port          5/12   info
Admin:              enabled
State:              OK
Pid format:         core(N)
Operate mode:       Brocade Native
Edge Fabric ID:     11
Alias name:         orange_fabric
Front Domain ID:    160
Front WWN:          50:00:51:e4:8f:80:2e:0b
Principal Switch:   1
Principal WWN:      10:00:00:05:1e:48:f8:03
Fabric Parameters:  Auto Negotiate
R_A_TOV:            10000(N)
E_D_TOV:            2000(N)
Authentication Type: None
DH Group: N/A
Hash Algorithm: N/A
Forward Error Correction: ON
Edge fabric's primary wwn: N/A
Edge fabric's version stamp: N/A
```

See Also

portCfgVEXPort, portDisable, portEnable, portShow, portCfgDefault, fcrBcastConfig, fcrConfigure

portCfgFaultDelay

Configures the fault delay for a single FC port.

Synopsis

```
portcfgfaultdelay [slot/]port delay
portcfgfaultdelay --help
```

Description

Use this command to configure the fault delay of an FC port.

In the event that the link is noisy after a host power cycle, the switch may go into a soft fault state, which means a delay of R_A_TOV. Setting the mode value to 1 reduces the fault delay value to 1.2 seconds. The configuration is stored in nonvolatile memory and is persistent across switch reboots and power cycles.

Use the **portCfgShow** command to display the user-configured fault delay settings.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

This command is applicable only to Fibre Channel ports.

Operands

This command has the following operands:

slot

> For bladed systems only, specifies the slot number of the port to be configured, followed by a slash (/).

port

> Specifies the number of the port to be configured, relative to its slot for bladed systems. Use **switchShow** for a listing of valid ports.

delay

> Specifies the fault delay value for the port number. This operand is required. Valid values are one of the following:

0

> Sets the fault delay to R_A_TOV (default).

1

Sets the fault delay to 1.2 seconds.

---help

Displays the command usage.

Examples

To set the fault delay of a port to 1.2 seconds:

switch:admin> **portcfgfaultdelay 2/3 1**

To display the configuration

switch:admin> **portcfgshow 2/3**

```
Area Number:           21
Octet Speed Combo:     1(16G|8G|4G|2G)
Speed Level:           AUTO(SW)
AL_PA Offset 13:       OFF
Trunk Port             ON
Long Distance          OFF
VC Link Init           OFF
Locked L_Port          OFF
Locked G_Port          OFF
Disabled E_Port        OFF
Locked E_Port          OFF
ISL R_RDY Mode         OFF
RSCN Suppressed        OFF
Persistent Disable     OFF
LOS TOV enable         OFF
NPIV capability        ON
QOS E_Port             AE
Port Auto Disable:     OFF
Rate Limit             OFF
EX Port                OFF
Mirror Port            OFF
Credit Recovery        ON
F_Port Buffers         OFF
Fault Delay:           1(1.2sec)
NPIV PP Limit:         126
CSCTL mode:            OFF
D-Port mode:           OFF
Compression:           OFF
Encryption:            OFF
FEC:                   Active

switch:admin> portcfgshow

Ports of Slot 2  0  1  2  3   4  5  6  7   8  9 10 11  12 13 14 15
---------------+--+--+--+--+---+--+--+--+---+--+--+--+---+--+--+--
Speed            AN AN AN AN  AN AN AN AN  AN AN AN AN  AN AN AN AN
```

```
Fill Word(On Active)0 0 0 0    0  0  0  0    0  0  0  0    0  0  0  0
Fill Word(Current)0 0   0  0    0  0  0  0    0  0  0  0    0  0  0  0
AL_PA Offset 13 .. .. .. ..    .. .. .. ..    .. .. .. ..    .. .. .. ..
Trunk Port      ON ON ON ON    ON ON ON ON    ON ON ON ON    ON ON ON ON
Long Distance   .. .. .. ..    .. .. .. ..    .. .. .. ..    .. .. .. ..
VC Link Init    .. .. .. ..    .. .. .. ..    .. .. .. ..    .. .. .. ..
Locked L_Port   .. .. .. ..    .. .. .. ..    .. .. .. ..    .. .. .. ..
Locked G_Port   .. .. .. ..    .. .. .. ..    .. .. .. ..    .. .. .. ..
Disabled E_Port .. .. .. ..    .. .. .. ..    .. .. .. ..    .. .. .. ..
ISL R_RDY Mode  .. .. .. ..    .. .. .. ..    .. .. .. ..    .. .. .. ..
RSCN Suppressed .. .. .. ..    .. .. .. ..    .. .. .. ..    .. .. .. ..
Persistent Disable .. .. ..    .. .. .. ..    .. .. .. ..    .. .. .. ..
LOS TOV enable  .. .. .. ..    .. .. .. ..    .. .. .. ..    .. .. .. ..
NPIV capability ON ON ON ON    ON ON ON ON    ON ON ON ON    ON ON ON ON
QOS E_Port      AE AE AE AE    AE AE AE AE    AE AE AE AE    .. .. .. ..
EX Port         .. .. .. ..    .. .. .. ..    .. .. .. ..    .. .. .. ..
Mirror Port     .. .. .. ..    .. .. .. ..    .. .. .. ..    .. .. .. ..
Rate Limit      .. .. .. ..    .. .. .. ..    .. .. .. ..    .. .. .. ..
Credit Recovery ON ON ON ON    ON ON ON ON    ON ON ON ON    ON ON ON ON
Fport Buffers   .. .. .. ..    .. .. .. ..    .. .. .. ..    .. .. .. ..
Port Auto Disable. .. .. ..    .. .. .. ..    .. .. .. ..    .. .. .. ..
CSCTL mode      .. .. .. ..    .. .. .. ..    .. .. .. ..    .. .. .. ..
D-Port mode     .. .. .. ..    .. .. .. ..    .. .. .. ..    .. .. .. ..
Compression     .. .. .. ..    .. .. .. ..    .. .. .. ..    .. .. .. ..
Encryption      .. .. .. ..    .. .. .. ..    .. .. .. ..    .. .. .. ..
FEC             .. .. .. ..    .. .. .. ..    .. .. .. ..    .. .. .. ..
Fault Delay      0  0  0  1    0  0  0  0    0  0  0  0    0  0  0  0
        where AE:QoSAutoEnable, AN:AutoNegotiate, ..:OFF,
        -:NotApplicable, ??:INVALID
(output truncated)
```

See Also

portCfgShow

portCfgFec

Enables or disables Forward Error Correction (FEC) or FEC through Transmitter Training Signal (TTS) on 16Gb/s and 10Gb/s Fibre Channel links. FEC is utilized by default on 32Gb/s FC links, which are not affected by these port configurations.

Synopsis

portcfgfec --enable [-FEC] [-TTS] [**-force** | **-f**] [*slot/*]*port* [*-port*]
portcfgfec --disable [-FEC] [-TTS] [**-force** | **-f**] [*slot/*]*port* [*-port*]
portcfgfec --show   [*slot/*]*port* [*-port*]
portcfgfec --help

Description

Use this command to enable or disable Forward Error Correction (FEC) or Transmitter Training Signal (TTS) on a specified port or on a range of ports, or to display the configuration.

FEC provides a mechanism for reducing error rates during data transmissions over 16Gb/s Fibre Channel links. When FEC is enabled on a port, the sender adds systematically generated error-correcting code (ECC) to its data transmission. This mechanism allows the receiver to detect and correct errors without needing to get additional information from the sender.

If the TTS mode is enabled, the port negotiates FEC through TTS. TTS and 64B/66B are mutually exclusive. At fixed speed, TTS is not compatible with 64B/66B at the peer port and the final port state will be "No_Sync". In auto negotiation, the local port will try the TTS encoding; if the other end is not compatible, then the local port will try the 8B/10B encoding and the port will settle in "N8" port speed if the peer port also supports 8B/10B encoding. Thus, the TTS mode should only be enabled if a similarly TTS-capable and enabled device is connected to the port.

The Brocade implementation of FEC is supported on 16Gb/s platforms and enables the switch to recover bit errors in 16Gb/s and 10Gb/s data streams. The FEC encoding can correct one burst of up to 11 error bits in every 2,112-bit transmission. The error correction covers both frames and primitives. There is no loss of bandwidth or added transmission data rate overhead to the 16Gb/s FC link.

By default, FEC without TTS is enabled switch-wide on all 16Gb/s platforms but FEC via TTS is not enabled. If FEC is already enabled on the ports, enabling FEC has no effect. If a range of ports is specified, some of which are already in the requested configuration, a notification is generated, and no action is taken for those ports only. All other ports in the specified range are updated. Enabling or disabling FEC is disruptive to traffic. The command prompts for confirmation to continue with enabling or disabling TTS or FEC via TTS for the online ports. You can override the prompt for confirmation with the **-force** option.

When used with the **--show** option, the command displays the following information for the specified ports:

Port

The port index number

FEC Capable

Displays YES if the port supports FEC. Displays NO if the port does not support FEC.

FEC Configured

> Displays ON if FEC is enabled on the port (default). Displays OFF if the feature is disabled.

FEC via TTS Configured

> Displays OFF if TTS is disabled on the port (default). Displays ON if the FEC negotiation via TTS feature is enabled.

FEC State

> The FEC state can be active or inactive. An active FEC state indicates that FEC is enabled and actually running. An inactive state can indicate two conditions: FEC is enabled, but not running due to some error condition (for example, FEC may not be enabled on both ends of the link). Or FEC is disabled and therefore inactive.

Use the **portCfgShow** command to display the FEC configuration along with other port parameters. Use the **islShow** command to view interswitch link-level FEC configurations. Use the **portErrshow** and **portStatShowhow** commands to monitor data transmission errors. You should see a significant reduction in CRC errors on FEC-enabled links.

Note that FEC is negotiated at ELP while FEC TTS is negotiated during speed negotiation.

Except for transparent DWDM, FEC is not supported over Dense Wavelength Division Multiplexing (DWDM) because non-transparent DWDM recognizes FC protocol and only transmits the frames. FEC is in unused signaling bits which are not replicated by non-transparent DWDM. ISL links that are extended across DWDM therefore should have FEC disabled.

Notes

> FEC is supported on the following links:
>
> • Between E_Ports on all 16Gb/s platforms running Fabric OS v7.0.0 or later. Both sides of the link must be configured with port speeds of 10Gb/s and 16Gb/s.
>
> • Between F_Ports and N_Ports in Access Gateway mode (requires Fabric OS v7.1.0 and later on the AG and the switch.
>
> • Between Brocade 16Gb/s capable HBAs (Catapult2) Host Bus Adapters and an F_Port. The HBA must be running v3.2 or later and the switch must be running Fabric OS v7.1.0.
>
> FEC is compatible with QoS, Credit Recovery, and Fabric-Assigned Port WWM (FA-PWWN).
>
> FEC is not supported on D_Ports configured with Dense Wavelength Division Multiplexing (DWDM).
>
> In Fabric OS v7.3.0 and later, the TTS mode is supported only for F_Ports. If a port initializes as an E_Port, it is disabled with a warning message and its peer port will be in "No_Light". status.
>
> The TTS mode is not supported for ICL ports, EX_Ports, D_Ports, SIM ports, Mirror ports, Software ASN, fixed 1Gb/s, fixed 2Gb/s, fixed 4Gb/s, or fixed 8Gb/s ports.
>
> The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

slot

On bladed systems only, specifies the slot number of the ports to be configured, followed by a slash (/).

port[*-port*]

Specifies a port or a port range, relative to the slot number on bladed systems, for example, 5/17-29. Multiple port ranges are not supported with this command.

--enable [-FEC] [-TTS]

Enables FEC, FEC through TTS or both on the specified ports. Use the **-FEC** option to enable FEC only, use the **-TTS** option to enable TTS only, or use both **-FEC** and **-TTS** options together to enable FEC through TTS.

--disable [-FEC] [-TTS]

Disables FEC, FEC through TTS on the specified ports.Use the **-FEC** option to disable FEC only, use the **-TTS** option to disable TTS only, or use both **-FEC** and **-TTS** options together to disable FEC through TTS.

-force | -f

Enables or disables FEC or FEC through TTS without prompting for a confirmation.

--show

Displays the FEC and TTS configurations on the specified ports.

--help

Displays the command usage.

Examples

To enable FEC on a single port and to display the configuration:

```
switch:admin> portcfgfec --enable -FEC 5/28
FEC has been enabled.
switch:admin> portcfgfec --show 5/28
Port: 412
FEC Capable: YES
10G/16G FEC Configured: ON
16G FEC via TTS Configured: OFF
FEC State: Active
```

To enable FEC on a port:

```
switch:admin> portcfgfec --enable -FEC 18
FEC has been enabled.
```

To enable FEC on a port range:

```
switch:admin> portcfgfec --enable -FEC 0-8
FEC has been enabled.
FEC has been enabled.
FEC has been enabled.
FEC has been enabled.

FEC has been enabled.
FEC has been enabled.
FEC has been enabled.
FEC has been enabled.
FEC has been enabled.
```

To enable the FEC feature on a range of ports, some of which were previously enabled (the following example enables port 4):

```
switch:admin> portcfgfec --enable -FEC 2-4
Same configuration for port 2
Same configuration for port 3
Same configuration for port 4
```

To disable the FEC feature on a port range:

```
switch:admin> portcfgfec --disable -FEC 0-8
FEC has been disabled for the port at 16G/N16 speeds. FEC is required
and will always be active for speeds greater than 16G.
FEC has been disabled for the port at 16G/N16 speeds. FEC is required
and will always be active for speeds greater than 16G.
FEC has been disabled for the port at 16G/N16 speeds. FEC is required
and will always be active for speeds greater than 16G.
FEC has been disabled for the port at 16G/N16 speeds. FEC is required
and will always be active for speeds greater than 16G.
FEC has been disabled for the port at 16G/N16 speeds. FEC is required
and will always be active for speeds greater than 16G.
FEC has been disabled for the port at 16G/N16 speeds. FEC is required
and will always be active for speeds greater than 16G.
FEC has been disabled for the port at 16G/N16 speeds. FEC is required
and will always be active for speeds greater than 16G.
FEC has been disabled for the port at 16G/N16 speeds. FEC is required
and will always be active for speeds greater than 16G.
FEC has been disabled for the port at 16G/N16 speeds. FEC is required
and will always be active for speeds greater than 16G.
```

To enable TTS on a port:

```
switch:admin> portcfgfec --enable -TTS 7
WARNING: 16G FEC with TTS is only supported on F-Ports. \
        Other port types will be disabled.
FEC changes are disruptive. Are you sure you want to continue?
(yes, y, no, n): [no]: y
TTS has been enabled.
```

To display the TTS on a port:

```
switch:admin> portcfgfec  --show 7
Port: 7
FEC Capable: YES
10G/16G FEC Configured: ON
16G FEC via TTS Configured: ON
FEC State: Active
```

To disable TTS on a port:

```
switch:admin> portcfgfec --disable -TTS 1
FEC changes are disruptive. Are you sure you want to continue?
(yes, y, no, n): [no]: y
TTS has been disabled.
```

To enable both FEC and TTS on a port:

```
switch:admin>  portcfgfec --enable -FEC -TTS 2
WARNING: 16G FEC with TTS is only supported on F-Ports. \
        Other port types will be disabled.
FEC changes are disruptive. Are you sure you want to continue?
(yes, y, no, n): [no]: y
FEC & TTS have been enabled for port 2.
```

To disable both FEC and TTS on a port:

```
switch:admin> portcfgfec --disable -FEC -TTS 2
FEC changes are disruptive. Are you sure you want to continue?
(yes, y, no, n): [no]: y
FEC & TTS have been disabled for port 2.
```

To enable TTS on a port range using the force option:

```
switch:admin> portcfgfec --enable -TTS 1-5 -f
WARNING: 16G FEC with TTS is only supported on F-Ports. Other port types
will be disabled.
Same configuration for port 1
Same configuration for port 2
Same configuration for port 3
Same configuration for port 4
Same configuration for port 5
```

To enable TTS feature on a range of ports, which were previously enabled using the force option:

```
switch:admin> portcfgfec --enable -TTS 16-17 -f
WARNING: 16G FEC with TTS is only supported on F-Ports. Other port types
will be disabled.
FEC changes are disruptive. Are you sure you want to continue?
(yes, y, no, n): [no]: y
Same configuration for port 16
FEC changes are disruptive. Are you sure you want to continue?
(yes, y, no, n): [no]: y
Same configuration for port 17
```

To enable FEC and TTS feature when FEC is previously enabled:

```
switch:admin> portcfgfec --enable -FEC -TTS 1
```

```
WARNING: 16G FEC with TTS is only supported on F-Ports. \
        Other port types will be disabled.
FEC changes are disruptive. Are you sure you want to continue?
(yes, y, no, n): [no]: y
Same FEC configuration; and TTS has been enabled for port 1.
```

To enable FEC and TTS feature when TTS is previously enabled:

```
switch:admin> portcfgfec --enable -FEC -TTS 1
WARNING: 16G FEC with TTS is only supported on F-Ports. \
        Other port types will be disabled.
FEC changes are disruptive. Are you sure you want to continue?
(yes, y, no, n): [no]: y
Same TTS configuration; and FEC has been enabled for port 1.
```

To disable FEC and TTS feature when FEC is previously disabled and TTS is enabled:

```
switch:admin> portcfgfec --disable -FEC -TTS 1
FEC changes are disruptive. Are you sure you want to continue?
(yes, y, no, n): [no]: y
Same FEC configuration; and TTS has been disabled for port 1.
```

To disable FEC and TTS feature when TTS is previously disabled and FEC is enabled:

```
switch:admin> portcfgfec --disable -FEC -TTS 1
FEC changes are disruptive. Are you sure you want to continue?
(yes, y, no, n): [no]: y
Same TTS configuration; and FEC has been disabled for port 1.
```

To display the FEC and TTS configuration on range of ports:

```
switch:admin> portcfgfec --show 7-10
Port: 7
FEC Capable: YES
10G/16G FEC Configured: ON
16G FEC via TTS Configured: ON
FEC State: Active

Port: 8
FEC Capable: YES
10G/16G FEC Configured: OFF
16G FEC via TTS Configured: OFF
FEC State: Inactive

Port: 9
FEC Capable: YES
10G/16G FEC Configured: ON
16G FEC via TTS Configured: OFF
FEC State: Inactive

Port: 10
FEC Capable: YES
10G/16G FEC Configured: ON
16G FEC via TTS Configured: OFF
FEC State: Inactive
```

See Also

islShow, portCfgShow, portErrShow, portStatsShow

portCfgFillword

Configures the fill word for a single 8G FC port.

Synopsis

portcfgfillword [*slot/*]*port, mode* [*passive*]
portcfgfillword --help

Description

Use this command to configure the fill word of an 8G FC port. By default, this command disables and re-enables the port and the port comes online with the new fill word setting. When passive option **1** is used after the mode, the new settings are not applied until the next time the port goes offline and comes back online. When passive option **0** is used after the mode, the new settings are applied immediately. The configuration is stored in nonvolatile memory and is persistent across switch reboots or power cycles.

Notes

This command is applicable only to 8Gb/s FC ports on FX8-24 blades in DCX8510 directors.

This configuration cannot be set on VE_Ports or VEX_Ports.

Use the **portCfgShow** command to display user-configured fill word settings.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

slot

> For bladed systems only, specifies the slot number of the port to be configured, followed by a slash (/).

port

> Specifies the number of the port to be configured, relative to its slot for bladed systems. Use **switchShow** for a listing of valid ports.

mode

> Specifies the fill word for the port number. This operand is required. Valid values are one of the following:

0 | -idle-idle

> Sets IDLE mode in the Link Init and IDLE as the fill word (default).

1 | -arbff-arbff

>   Sets ARB(ff) in the Link Init and ARB(ff) as the fill word.

2 | -idlef-arbff

>   Sets IDLE mode in the Link Init and ARB(ff) as the fill word.

3 | -aa-then-ia

>   Attempts hardware arbff-arbff (mode 1) first. If the attempt fails to go into active state, this
>   command executes software idle-arb (mode 2). Mode 3 is the preferable to modes 1 and
>   2 as it captures more cases.

passive

>   Specifies the fill word configuration changes to take effect immediately or next port
>   toggle. This operand is optional. Valid values are one of the following:

0

>   Specify 0 for the new settings to take effect immediately.

1

>   Specify 1 to postpone the new settings to take effect only after the next time the port goes
>   offline and comes back up. It prevents immediate application of the new settings through
>   a disruptive **portDisable** and **portEnable** operation.

Examples

>   To set the fill word of a port to ARBFF-ARBFF using the numeric mode notation:

```
switch:admin> portcfgfillword 2/3, 1
```

>   To set the fill word of a port to ARBFF-ARBFF using the -arbff-arbff option:

```
switch:admin> portcfgfillword 2/3, -arbff-arbff
```

>   To set the fill word of a port to IDLE-ARBFF using the **-idle-arbff** option:

```
switch:admin> portcfgfillword 27, -idle-arbff
switch:admin> portcfgshow 27
Area Number:            27
Speed Level:            AUTO(HW)
Fill Word(On Active)    2(SW Idle-Arbff)
Fill Word(Current)      2(SW Idle-Arbff)
(output truncated)
```

>   To set the fill word of a port using the passive option:

```
switch:admin> portcfgfillword 10/2 2 1

switch:admin> portcfgshow 10/2
Area Number:            82
Speed Level:            AUTO(HW)
```

```
Fill Word(On Active)      2(SW Idle-Arbff)
Fill Word(Current)        1(Arbff-Arbff)
(output truncated)

switch:admin> portdisable 10/2; portenable 10/2
switch:admin> portcfgshow 10/2
Area Number:              82
Speed Level:              AUTO(HW)
Fill Word(On Active)      2(SW Idle-Arbff)
Fill Word(Current)        2(SW Idle-Arbff)
AL_PA Offset 13:          OFF

switch:admin> portcfgfillword 10/2 3 0
switch:admin> portcfgshow 10/2
Area Number:              82
Speed Level:              AUTO(HW)
Fill Word(On Active)      3(A-A then SW I-A)
Fill Word(Current)        3(A-A then SW I-A)
AL_PA Offset 13:          OFF
Trunk Port                OFF
Long Distance             OFF
```

See Also

portCfgShow

portCfgFlexport

Modifies port type to either Ethernet or Fiber Channel or vice-versa. All ports from same quad must be disabled before executing this command and it will change the port type of all the ports in the quad.

Synopsis

portcfgflexport --proto [**fc** | **eth**] [*slot/*]*port*
portcfgflexport --quadshow [*slot/*]*port*

Description

Use this command to modify the port type either to Ethernet or Fiber Channel.

This command is supported on all platforms, but FC to ETH configuration is allowed only for flexport capable ports which are supported only in Brocade FC32-64 Port Blade.

By default, Brocade FC32-64 Port Blade will be in FC mode. User can use the **portcfgflexport** command to convert the port into Ethernet port.

User must disable all the ports in the quad to convert the MAC type. Use **--quadshow** option to display the four ports that belong to the quad.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--proto

Defines the MAC type for the port and the valid operators include the following:

fc

Converts port into Fiber Channel.

eth

Converts port into Ethernet.

port

Specifies the port number.

[*slot/*]

        Specify the slot number on chassis based switches.

--quadshow

        Displays the four ports belong to the quad.

Examples

        To define the MAC type:

```
switch:admin> portcfgflexport --proto eth 10/52
Error: Ports 10/52,10/53,10/54,10/55 in the QUAD are not yet disabled
switch:admin> portdisable 10/52-55
switch:admin> portcfgflexport --proto eth 10/52
Success: Ports 10/52,10/53,10/54,10/55 are configured as port type ETH
switch:admin> portcfgflexport --proto fc 10/52
Success: Ports 10/52,10/53,10/54,10/55 are configured as port type FC
```

        To display the ports belong to the quad:

```
switch:admin> portcfgflexport --quadshow 10/40
10/40(Primary)
10/41
10/42
10/43
```

See Also

        portEnable, portDisable, switchShow

portCfgFlogiLogout

Enables the Base Device Logout functionality on the port.

Synopsis

```
portcfgflogilogout --enable [slot/]port | -all
portcfgflogilogout --disable [slot/]port | -all
portcfgflogilogout --help
```

Description

Use this command to enable or disable Base Device Logout functionality on a specified port or port range. By default, the functionality is disabled on all the ports.

This functionality allows NPIV devices to remain logged in even after the base device logs out.

A base device is a device on a F_Port which has the base PID. The base device logs in with a FLOGI.

The execution of this command is disruptive. The online ports will toggle with this command but prompts for user confirmation if any port is online.

You cannot configure the Base Device Logout functionality if the standby device is running on a lower version of the firmware.

The feature is not supported on ICL ports. You cannot enable this feature on the ports that do not support NPIV capability or if NPIV is disabled by configuration.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

[*slot/*]*port* | -all

Specifies a port number. You can specify a port or range of ports. You can use **-all** to include all ports on the logical switch.

--enable

Enables Base Device Logout functionality on the specified port.

--disable

Disables Base Device Logout functionality on the specified port.

--help

        Displays the command usage.

Examples

        To enable Base Device Logout functionality on a port:

        `switch:admin>` **`portcfgflogilogout --enable 2/1`**

        To disable Base Device Logout functionality on a port:

        `switch:admin>` **`portcfgflogilogout --disable 2/1`**

See Also

        portCfgNPIVPort

portCfgFportBuffers

Configures F_Port buffer allocation.

Synopsis

portcfgfportbuffers --enable [*slot/*]*port buffers*
portcfgfportbuffers --disable [*slot/*]*port*

Description

Use this command to change the default buffer allocation for an F_Port and to allocate a specified number of buffers to the port. When port buffer allocation is enabled, the number of buffers specified override the default F_Port buffer allocation. When the configuration is disabled, the default buffer allocation is restored. Only an F_Port can utilize the buffers allocated by this command, and the allocated buffers are reserved only for this port.

The F_Port buffer configuration is persistent across system reboots.

Use the **portBufferShow** command to determine current port buffer allocations.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

The F_Port buffer feature does not support ports configured as EX_Ports, Mirror Ports, Long Distance Ports, L_Ports, QoS Ports, Fast Write, and Trunk Areas.

The Fabric OS port configuration commands are not supported on FCoE ports.

This command is not supported on the Brocade Analytics Monitoring Platform.

Operands

This command has the following operands:

--enable

Enables the F_Port buffer configuration on a specified port. A port and buffer allocation must be specified with this option.

--disable

Disables the F_Port buffer configuration on a specified port.

slot

Specifies the slot number on bladed systems, followed by a slash (/).

buffers

Specifies the number of buffers to be allocated to the specified port. The specified buffer allocation takes effect when the F_Port comes online. This operand is required with the **--enable** option. The minimum buffer allocation is the default number of buffers plus 1. The maximum is determined by the remaining buffer allocations in the port's port group. Use **portBufferShow** to determine the number of remaining free buffers.

Examples

To allocate 12 buffers to an F_Port:

```
switch:admin> portcfgfportbuffers --enable 2/44 12
```

To disable the port buffer configuration and return to the default buffer allocation:

```
switch:admin> portcfgfportbuffers --disable 2/44 12
```

See Also

portBufferShow

portCfgGE

Manages the port configuration of the GbE/10GbE ports.

Synopsis

```
portcfgge  [slot/] port --set -speed speed
portcfgge  [slot/] port --set -channel channel_num
portcfgge  [slot/] port --set -lan
portcfgge  [slot/] port --set -wan
portcfgge  [slot/] port --enable -autoneg
portcfgge  [slot/] port --disable -autoneg
portcfgge  [slot/][ port] --show [-lmac]
portcfgge --help
```

Description

Use this command to manage the port configuration of the GbE/10GbE ports. This command switches the port speed between 1G and 10G or switch the auto-negotiate mode. The auto-negotiate option allows to control auto-negotiate on the PHY for 1G mode.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

slot

For bladed systems only, specifies the slot number of the port to be configured, followed by a slash (/).

port

Specifies the number of the GbE port to be configured. On the Brocade FX8-24 blade, the GbE ports are numbered ge0 - ge9 and 10 GbE ports are numbered xge0 - xge1. On the Brocade 7840 switch and the Brocade SX6 extension blade, 40 GbE ports are numbered ge0 - ge1 and 1G/10GbE ports are numbered ge2 - ge17. On the Brocade 7810, the 1GbE RJ-45 ports are numbered ge0 and ge1, and 1GbE/10GbE SFP ports are numbered ge2 - ge7. Use the **switchShow** command for a list of valid ports.

--set

Configures the GE ports.

-speed *speed*

> Configures the port speed for the GE ports. The valid speeds are 1G or 10G.

-channel *channel_num*

> Configures the tunable small form-factor pluggable (TSFP) channel ID for the 10 GE
> ports. The valid channel ID range is 1 through 102. This option is supported only on the
> Brocade 7840 switch, Brocade 7810 switch, and the Brocade SX6 extension blade.

-lan

> Configures a GE port as a LAN port. This option is supported on the Brocade 7840
> switch, Brocade 7810 switch, and the Brocade SX6 extension blade only.

-wan

> Configures a GE port as a WAN port. This option is supported on the Brocade 7840
> switch, Brocade 7810 switch, and the Brocade SX6 extension blade only.

--enable -autoneg

> Enables the auto negotiation mode for the GE port.

--disable -autoneg

> Disables the auto negotiation mode for the GE port.

--show

> Displays the current GE port configurations.

-lmac

> Displays the local MAC address. This operand is optional.

--help

> Displays the command usage.

Examples

> To display the current GE port configurations:

```
switch:admin> portcfgge --show
 Port           Speed      Flags       LAG-ID
----------------------------------------------
 ge0            40G        A----       -
 ge1            40G        A----       -
 ge2            10G        A-LG-       lag0
 ge3            10G        A-LG-       lag0
 ge4            10G        A----       -
 ge5            10G        A----       -
```

```
 ge6              10G          A----       -
 ge7              1G           --LG-       edgeSw1
 ge8              10G          A----       -
 ge9              10G          A----       -
 ge10             10G          A----       -
 ge11             10G          A----       -
 ge12             10G          A----       -
 ge13             10G          A----       -
 ge14             10G          A----       -
 ge15             10G          A----       -
 ge16             10G          A----       -
 ge17             10G          A----       -
 ------------------------------------------
```

To configure the port speed to 1G for ge8 and verify the configuration:

```
switch:admin> portcfgge ge8 --set -speed 1G
switch:admin> portcfgge --show
 Port             Speed        Flags       LAG-ID
 ------------------------------------------
 ge0              40G          A----       -
 ge1              40G          A----       -
 ge2              10G          A-LG-       lag0
 ge3              10G          A-LG-       lag0
 ge4              10G          A----       -
 ge5              10G          A----       -
 ge6              10G          A----       -
 ge7              1G           --LG-       edgeSw1
 ge8              1G           A----       -
 ge9              10G          A----       -
 ge10             10G          A----       -
 ge11             10G          A----       -
 ge12             10G          A----       -
 ge13             10G          A----       -
 ge14             10G          A----       -
 ge15             10G          A----       -
 ge16             10G          A----       -
 ge17             10G          A----       -
 ------------------------------------------
```

To configure a GE port for LAN operation and verify the configuration:

```
switch:admin> portcfgge ge10 --set -lan
Operation Succeeded.
SB118:FID128:root> portcfgge --show

 Port             Speed        Flags       LAG-ID
 ------------------------------------------
 ge0              40G          A----       -
 ge1              40G          A----       -
 ge2              10G          A-LG-       lag0
 ge3              10G          A-LG-       lag0
 ge4              10G          A----       -
 ge5              10G          A----       -
 ge6              10G          A----       -
```

```
ge7              1G            --LG-      edgeSw1
ge8              10G           A----      -
ge9              10G           A----      -
ge10             10G           A-L--      -
ge11             10G           A----      -
ge12             10G           A----      -
ge13             10G           A----      -
ge14             10G           A----      -
ge15             10G           A----      -
ge16             10G           A----      -
ge17             10G           A----      -
--------------------------------------------
Flags: A:Auto-Negotiation Enabled  C:Copper Media Type
       L:LAN Port  G=LAG Member
--------------------------------------------
```

See Also

portCfg, portCfgDefault, portShow

portCfgGport

Designates a port as a G_Port; removes G_Port designation.

Synopsis

portcfggport [*slot/*]*port,mode*

Description

Use this command to designate a port as a G_Port. After successful execution of this command, the switch attempts to initialize the specified port as an F_Port only, and does not attempt loop initialization (FL_Port) on the port. A port designated as a G_Port can become an E_Port. This configuration can be cleared but not set on VE/VEX_Ports. Changes made by this command are persistent across switch reboots or power cycles.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

slot

For bladed systems only, specify the slot number of the port to be configured, followed by a slash (/).

port

Specify the port to be configured, relative to its slot for bladed systems. Use **switchShow** to display a list of valid ports.

mode

Specify a value of 1 to designate the port as a G_Port or specify a value of 0 to remove the G_Port designation from the port. A value of 0 is the default port state. Mode must be preceded by a comma. This operand is required.

Examples

To configure port as a locked G_Port:

```
switch:admin> portcfggport 1/3, 1
```

See Also

configure, portCfgLport, portShow, switchShow

portCfgISLMode

Enables or disables ISL R_RDY mode on a port.

Synopsis

portcfgislmode [*slot/*]*port,mode*

Description

Use this command to enable or disable interswitch link read-ready (ISL R_RDY) mode on a port. Use the **portCfgShow** command to determine whether ISL R_RDY mode is enabled on a port.

In ISL R_RDY mode, the port sends a primitive signal that the port is ready to receive frames. The port sends an exchange link parameter (ELP) with flow control mode 02. If a port is ISL R_RDY enabled, it can only receive an ELP with flow control mode 02. A received ELP with flow control mode 01 will segment the fabric.

This mode cannot detect any inconsistencies in fabric operating mode parameters, such as the PID format of connected ports. Before enabling ISL R_RDY mode, ensure that all fabric-wide parameters are consistent for every switch in the fabric.

Use **configShow fabric.ops** to view a complete listing of fabric operating mode parameters on the switch.

The following E_Port configurations are not applicable to a port configured for ISL R_RDY mode. If configured, these port configuration parameters are ignored during E_Port initialization:

•   Trunk port

•   VC link init

The **portCfgISLMode** level LE, LD, or LS only can be enabled at the same time. Such an ISL uses R_RDY mode of flow control over the long distance link. This feature is not backward compatible with firmware versions that do not support it.

Notes

Changes made by **portCfgISLMode** are persistent across switch reboots and power cycles.

This configuration can be cleared but not set on VE/VEX_Ports.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

The Fabric OS port configuration commands are not supported on FCoE ports.

This command is not supported on the Brocade Analytics Monitoring Platform.

Operands

This command has the following operands:

slot

> For bladed systems only, specify the slot number of the port to display, followed by a slash (/).

port

> Specify the port to display, relative to its slot for bladed systems. Use **switchShow** to list valid ports.

mode

> Specify 1 to enable ISL R_RDY mode. Specify 0 to disable ISL R_RDY mode.

Examples

To enable ISL R_RDY mode on a port:

```
switch:admin> portcfgislmode 1/3, 1
ISL R_RDY Mode is enabled for port 3. Please make sure
the PID formats are consistent across the entire fabric.
```

To disable ISL R_RDY mode on a port:

```
switch:admin> portcfgislmode 1/3, 0
```

See Also

configure, portCfgShow

portCfgLongDistance

Configures a port to support long distance links.

Synopsis

```
portcfglongdistance [slot/]port
     [distance_level]
     [vc_translation_link_init]
     [-distance distance] | [-buffer buffers]
     [-framesize frame_size]
     [-fecenable | -fecdisable]
```

Description

Use this command to allocate frame buffer credits to a port or to configure a specified long distance link. The port can only be used as an E_Port. Changes made by this command are persistent across switch reboots and power cycles. This configuration can be cleared but not set on VE/VEX_Ports.

The long distance configuration allows native FC ports to run WAN/LAN connections. It ensures that the full bandwidth of a link or trunk can be utilized for a particular long distance configuration. The receiving port must have sufficient buffers available, so that the transmitting port can saturate the link with enough frames to fill the entire length of the link. As the distance between switches and the link speed increases, additional buffer-to-buffer credits are required to maintain maximum performance. If a port is configured as a long distance port, the remaining ports of that port group could be disabled, fail to initialize, or move to "buffer limited" mode due to a lack of frame buffer credits.

The number of credits reserved for a port depends on the switch model and on the extended fabric mode for which it is configured. Not all distance modes are supported by all platforms. Refer to the *Brocade Fabric OS Administration Guide* for details on platform-specific buffer credit models, long distance mode support, and maximum distance supported for specific hardware configurations.

When the **portcfglongdistance** command is used to configure long distance ports with optimal buffers, use the **portbuffercalc** command to calculate the required buffers for the specified speed and distance. Use this calculated value for the **-buffers** value.

Notes

This command requires an Extended Fabrics license.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

A long-distance link can also be configured to be part of a trunk group. Refer to **portCfgTrunkPort** help for details.

When a port is configured as a long-distance port, the output of **portShow** and **switchShow** displays the long-distance level. Refer to **portShow** help and **switchShow** help for details.

The **portCfgISLMode** and **portCfgLongDistance** LE, LD, or LS levels can be enabled at the same time. Such an ISL uses the R_RDY mode of flow control over the long distance link. While using

R_RDY mode flow control, an E_Port cannot form trunk groups of long-distance links even if the trunking is enabled. This feature is not backward compatible with firmware versions that do not support it.

Ctrl-D cancels the configuration update.

The Fabric OS port configuration commands are not supported on FCoE ports.

Operands

This command has the following operands:

slot

Specifies the slot number (for bladed systems only), followed by a slash (/).

port

Specifies the number of the port to be configured relative to its slot for bladed systems. Use **switchShow** to display a list of valid ports. This operand is required.

distance_level

Specifies the long distance level as one of the following (the numerical value representing each *distance_level* is shown in parentheses):

L0 (0)

Specifies L0 to configure the port as a regular port. A total of 20 full-size frame buffers are reserved for data traffic, regardless of the port's operating speed; therefore, the maximum supported link distance is up to 5 km at 2Gb/s, up to 2 km at 4Gb/s and up to 1 km at 8, 10, and 16Gb/s.

LE (3)

Specifies LE mode to configure an E_Port distance greater than 5 km and up to 10 km. A total of 5, 10, 20, 40, 50, 80, and 160 full-size frame buffers are reserved for data traffic at port speeds of 1, 2, 4, 8, 10, 16, and 32Gb/s. LE does not require an Extended Fabrics license. If a port in LE mode is set to autonegotiation, it will reserve the buffers for the highest support speed on that port. If this is not the desired buffer allocation, you should set the port to a fixed speed.

LD (5)

Specifies LD for automatic long-distance configuration. The buffer credits for the given E_Port are automatically configured based on the actual link distance. Up to a total of 1452 full-size frame buffers are reserved depending on the distance measured during E_Port initialization. The *desired_distance* is used as the upper limit to the measured distance. When the *desired_distance* is less than the measured distance, the port will come up in "Buffer Limited" mode and the port takes the buffers calculated from the desired distance. If a port in LD mode is set to autonegotiation, it will reserve the buffers for the highest support speed on that port. If this is not the desired buffer allocation, you should set the port to a fixed speed.

LS (6)

Specifies LS mode to configure a static long distance link with a fixed buffer allocation greater than 10 km. Up to a total of 1452 full-size frame buffers are reserved for data traffic, depending on the specified *desired_distance* value. If a port in LS mode is set to autonegotiation, it will reserve the buffers for the highest support speed on that port. If this is not the desired buffer allocation, you should set the port to a fixed speed.

vc_translation_link_init

Specifies the fill words used on long distance links. When set to 1, the link uses ARB fill words (default). When set to 0, the link uses IDLE fill words. The IDLE fill word option is not compatible with QoS configured links and Credit Recovery enabled links. You must disable these features before configuring long distance IDLE fill words.

-distance *distance*

This parameter is required when a port is configured as an LD or an LS mode link. In LD mode, the value of desired_distance is the upper limit of the link distance and is used to calculate buffer availability for other ports in the same port group. When the measured distance exceeds the value of *distance*, this value is used to allocate the buffers. In this case, the port operates in degraded mode instead of being disabled due to insufficient buffers. In LS mode, the actual link distance is not measured, instead the *distance* is used to allocate the buffers required for the port.

-framesize *frame_size*

Specifies the average frame size for LD and LS Mode.

-buffer *buffers*

Specifies the desired buffer for LD and LS mode.

-fcenable

Enables Forward Error Correction on 10Gb/s and 16Gb/s speed ports.

-fecdisable

Disables Forward Error Correction on 10Gb/s and 16Gb/s speed ports.

FEC via TTS is always enabled on 32Gb/s speed ports.

Examples

To configure a switch port 118 to support a 100 km link and be initialized using the long distance link initialization protocol:

```
switch:admin> portcfglongdistance 12/6 LS 1 -distance 100
switch:admin> portshow 12/6
portIndex: 118
portName: slot12 port6
portHealth: No Fabric Watch License
```

```
Authentication: None
portDisableReason: None
portCFlags: 0x1
portFlags: 0x103   PRESENT ACTIVE E_PORT G_PORT U_PORT \
   SEGMENTED LOGIN
LocalSwcFlags: 0x0
portType:  24.0
portState: 1  Online
Protocol: FC
portPhys: 6  In_Sync   portScn: 64 Segmented Flow control \
   mode 0
port generation number: 14
state transition count: 12

portId:   017600
portIfId: 43c2001e
portWwn:  20:76:00:05:1e:e5:cb:00
portWwn of device(s) connected:

Distance:  static (desired distance = 100 Km)
portSpeed: N8Gbps

FEC: Inactive
Credit Recovery: Inactive
LE domain: 0
FC Fastwrite: OFF
Interrupts:    0      Link_failure: 0     Frjt: 0
Unknown:       0      Loss_of_sync: 0     Fbsy: 0
Lli:          70      Loss_of_sig:  0
Proc_rqrd:   205      Protocol_err: 0
Timed_out:     0      Invalid_word: 0
Tx_unavail:    0      Invalid_crc:  0
Delim_err:     0      Address_err:  0
Lr_in:         0      Ols_in:       0
Lr_out:        0      Ols_out:      0
```

To configure desired buffers:

Use **portbuffercalc** command to calculate buffers required for specified speed and distance.

```
switch:admin> portbuffercalc 3/2 -speed 8 -distance 10
```

This displays 46 buffers required for 10km at 8G and framesize of 2048 bytes.

```
switch:admin> portbuffercalc 3/2 -speed 16 -distance 10
```

This displays 86 buffers required for 10km at 16G and framesize of 2048 bytes.

Use this buffer calculation to configure the desired buffers by executing **portcfglongdistance** command as shown below:

```
switch:admin> portcfglongdistance 2/35 LS 1 -buffers 400
Reserved Buffers = 420
```

To configure average frame size:

```
switch:admin> portcfglongdistance 2/35 LS 1 -distance 100 -framesize 1024
```

See Also

configure, portBufferCalc, portCfgISLMode, portCfgShow, portCfgTrunkPort, portShow, switchShow

portCfgLossTov

Enables or disables debouncing of signal loss for front-end ports.

Synopsis

```
portcfglosstov [slot/]port [-disable | 0]
portcfglosstov [slot/]port [-enable_fixed | 1]
portcfglosstov [slot/]port [-enable_all | 2]
portcfglosstov port [-dwdmlosyncon | -dwdmlosyncoff]
portcfglosstov -help
```

Description

Use this command to enable or disable the debouncing of loss of signal for 100 ms for front-end ports. Use **portCfgShow** to display the current setting.

If executed without operands, the command prints the usage.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

On a chassis, this command must be executed on the active CP.

Operands

This command has the following operands:

slot

> For bladed systems only, specifies the slot number of the port to be configured, followed by a slash (/).

port

> Specifies the port to be configured, relative to its slot for bladed systems. Use **switchShow** to list valid ports.

-disable | 0

> Disables the configuration.

-enable_fixed | 1

> Enables the configuration on fixed-speed ports.

-enable_all | 2

> Enables the configuration on autonegotiated and fixed-speed ports.

-dwdmlosyncon | -dwdmlosyncoff

Enables or disables the configuration for a DWDM lossSync fixed-speed port.

-help

Displays the command usage.

Examples

To enable the configuration on fixed-speed port 1/5 and to display the configuration:

```
switch:admin> portcfglosstov 1/5 1

switch:admin> portcfgshow 1/5
Area Number:            5
Speed Level:            AUTO(HW)
Fill Word(On Active):   0(Idle-Idle)
Fill Word(Current):     0(Idle-Idle)
AL_PA Offset 13:        OFF
Trunk Port              ON
Long Distance           OFF
VC Link Init            OFF
Locked L_Port           OFF
Locked G_Port           OFF
Disabled E_Port         OFF
Locked E_Port           OFF
ISL R_RDY Mode          OFF
RSCN Suppressed         OFF
Persistent Disable      OFF
LOS TOV mode            1(ON:FixSpd)
(Output truncated)
```

To disable the configuration on port 1/5:

```
switch:admin> portcfglosstov 1/5 0
```

To enable the configuration for a DWDM lossSync fixed-speed port:

```
switch:admin> portcfglosstov 4/2 -dwdmlosyncon

switch:admin> portcfgshow 4/2
Area Number:            18
Octet Speed Combo:      1(32G|16G|8G|4G)
FC Speed Level:         AUTO(HW)
Trunk Port              ON
Long Distance           OFF
VC Link Init            OFF
Disabled E_Port         OFF
Locked E_Port           OFF
ISL R_RDY Mode          OFF
RSCN Suppressed         OFF
Persistent Disable      OFF
LOS TOV mode            0(OFF)
DWDM losync mode        ON
```

```
NPIV capability          ON
QOS Port                 AE
Port Auto Disable:       OFF
EX Port                  OFF
Mirror Port              OFF
SIM Port                 OFF
Credit Recovery          ON
(Output truncated)
```

See Also

portCfgShow

portCfgLport

Configures a port as an L_Port.

Synopsis

```
portcfglport
    [[slot/]port] locked_mode
    [private_mode] [duplex_mode]]
```

Description

Use this command to designate a port as an L_Port, and to configure its behavior. When a port is designated as an L_Port, the switch attempts to initialize that port as a fabric L_Port (FL_Port). The switch will never attempt a point-to-point (F_Port) initialization on the port. By default the L_Port will be a public L_Port. It can be configured as a private L_Port, in which case it will reject fabric login (FLOGI).

Notes

This configuration can be cleared but not set on VE/VEX_Ports.

VE_Ports on the Brocade FX8-24 platforms do not support Arbitrated Loops. If one of the virtual FC ports (16-31) is preconfigured as an L_Port, and a Brocade FX8-24 Extension blade is inserted into the slot, the configuration is not honored. The system logs a RASLOG error and the port defaults back to a G_Port. Attempts to configure a VE_Port as an L_Port are rejected with a corresponding system message.

The Fabric OS port configuration commands are not supported on FCoE ports.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

When invoked without operands, this command reports the L_Port conditions for all ports present. The following operands are supported:

slot

For bladed systems only, specify the slot number of the port to be configured, followed by a slash (/).

port

Specify a port number to be configured, relative to its slot for bladed systems. Use **switch-Show** to display a list of valid ports. This operand is optional; if omitted, this command displays the L_Port conditions for all ports.

locked_mode

Specify 1 to configure the specified port as a locked L_Port. Specify 0 to remove the locked L_Port configuration from the port (default). This operand is required, if a port is specified.

private_mode

Specify 1 to configure the L_Port as a private L_Port. Specify 0 to configure the L_Port as a public L_Port. This operand is optional; if omitted; the default value of 0 is used. On unsupported platforms, this command is blocked and returns an appropriate message.

duplex_mode

Specify 2 to configure the specified port as a full-duplex L_Port with fairness. Specify 0 to configure the L_Port as a full-duplex L_Port. This operand is optional; if omitted, the default value of 0 is used.

Examples

To configure ports 8, 14, and 15 as locked L_Ports:

```
switch:admin> portcfglport 4/8 4/14-15, 1
```

To display the L_Port conditions:

```
switch:admin> portcfglport
[...]
Ports of Slot 4  0  1  2  3   4  5  6  7   8 9 10 11  12 13 14 15
--------------+--+--+--+--+---+--+--+--+--+--+--+--+---+--+--+--
[...]

Locked L_Port   .. .. .. ..  .. .. .. ..  ON .. .. ..  .. .. ON ON
Private L_Port  .. .. .. ..  .. .. .. ..  .... .. ..  .. .. .. ..
Locked Loop HD  .. .. .. ..  .. .. .. ..  .. .. .. ..  .. .. .. ..
Loop Fairness   .. .. .. ..  .. .. .. ..  .. .. .. ..  .. .. .. ..
(output truncated)
```

See Also

configure, portCfgShow, portShow, switchShow

portCfgNonDfe

Enables or disables or force disables the non-Decision Feedback Equalization (DFE) mode on 8Gb/s Fibre Channel links.

Synopsis

```
portcfgnondfe --enable [slot/]port[-port]
portcfgnondfe --disable [slot/]port[-port]
portcfgnondfe --force_disable [slot/]port[-port]
portcfgnondfe --show [slot/]port[-port]
portcfgnondfe --help
```

Description

Use this command to enable or disable or force disable the non-DFE mode on a specified port or on a range of ports, or to display the configuration and state.

Active receiver DFE uses sophisticated algorithms to automatically adjust the receiver to compensate for signal distortions.

If enabled, this command disables the active receiver DFE and instead uses a fixed receiver equalization. The enabled mode is further indicated by the suffix of "Static" in the **--show** option.

If the non-DFE enabled port is connected to a port that does not require fixed receiver equalization, CRC errors may be detected on the port and the link may toggle.

The **--force_disable** option is used to force disable non-DFE for the specified port (or range of ports) irrespective of the content of the Rx fillword.

By default, non-DFE mode is disabled, which means that automatic receiver adjustment through DFE is activated. Even if disabled, non-DFE is still automatically activated if both of the following conditions are met:

•   Port speed is 8G or N8; and

•   The received fillword is IDLE.

The disabled mode is further indicated by the suffix of "Auto" in the **--show** option.

If non-DFE is already enabled on the ports, enabling non-DFE has no effect. If a range of ports is specified, some of which are already in the requested configuration, a notification is generated, and no action is taken for those ports only. All other ports in the specified range are updated. Enabling or disabling or force disabling non-DFE is disruptive to traffic. Auto non-DFE mode works in both AN and fixed 8Gb/s speeds.

When used with the **--show** option, the command displays the following information for the specified ports:

Port

The port index number.

8G Non-DFE Configured

Displays ON (Static) if non-DFE is enabled on the port.

Displays OFF (Auto) if the feature is disabled (default).

Displays OFF (Force Disabled) if the feature is force disabled (using option **--force_dis-able**).

8G Non-DFE State

Displays Active if non-DFE is activated on the port.

Displays Inactive if non-DFE is not activated.

Use the **portCfgShow** command to display the non-DFE configuration along with other port parameters.

Notes

This command is applicable only on an 8Gb/s FC port on Brocade Gen 5 platforms.

The execution of this command is subject to Virtual Fabric restriction that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

slot/

Specifies the slot number to be configured on bladed systems.

port[-port]

Specifies a port or a port range, relative to the slot number on bladed systems. This command does not support multiple port ranges.

--enable

Enables non-DFE statically on the specified ports.

--disable

Disables non-DFE which allows automatic activation on the specified ports.

--force_disable

Force disables the non-DFE regardless of RX fillword.

--show

Displays the non-DFE configuration and state on the specified ports.

--help

Displays the command usage.

Examples

To enable non-DFE on a single port:

```
switch:admin> portcfgnondfe --enable 4/28
```

To enable non-DFE on a port range:

```
switch:admin> portcfgnondfe --enable 0-8
```

To enable the non-DFE feature on a range of ports (in this example, non-DFE is already enabled on ports 2 and 3):

```
switch:admin> portcfgnondfe --enable 2-4
Same configuration for port 2
Same configuration for port 3
```

To disable the non-DFE feature on a port range:

```
switch:admin> portcfgnondfe --disable 0-8
```

To force disable the non-DFE feature on a port range:

```
switch:admin> portcfgnondfe --force_disable 0-8
```

To display non-DFE configuration on a single port:

```
switch:admin> portcfgnondfe --show 7
Port: 7
8G Non-DFE Configured: OFF (Auto)
8G Non-DFE State: Active

switch:admin> portcfgnondfe --show 8
Port: 8
8G Non-DFE Configured: OFF (Auto)
8G Non-DFE State: Inactive

switch:admin> portcfgnondfe --show 9
Port: 9
8G Non-DFE Configured: ON (Static)
8G Non-DFE State: Active
```

See Also

portCfgShow

portCfgNPIVPort

Enables or disables N_Port ID virtualization (NPIV) functionality on a port and sets the per-port login limit.

Synopsis

```
portcfgnpivport [slot/]port mode
portcfgnpivport --enable [slot/]port
portcfgnpivport --disable [slot/]port
portcfgnpivport --setloginlimit -all [[slot/]port | port_range]
      login_limit
portcfgnpivport --help
```

Description

Use this command to disable NPIV functionality on a port. Changes made by this command are persistent across switch reboots and power cycles.

N_Port ID Virtualization (NPIV) enables a single Fibre Channel protocol port to appear as multiple and distinct ports. It provides unique port identification for each device logging into the fabric via the NPIV port as if each device assigns its own physical port. The virtual port has the same properties as N_Port and is therefore capable of registering with all fabric services.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

When using **portCfgNPIVPort --disable** on trunked ports, you must disable all trunk member ports before changing the NPIV capability on a trunk member and then re-enable the trunked ports to ensure that the configuration changes take effect.

Use the **portCfgShow** command to determine whether NPIV is enabled on a port and to display the maximum logins configured for that port. Use the **portCfgDefault** command to reset all port configurations, including the NPIV configuration of a port.

This command can be executed in both native and AG switch mode.

Operands

This command has the following operands:

slot

For bladed systems only, specifies the slot number of the port to be configured, followed by a slash (/).

port

Specifies the number of the port to be configured, relative to its slot for bladed systems. Use **switchShow** for a listing of valid ports.

mode

> Enables or disables NPIV on the specified port. Specify 1 to enable or 0 to disable the feature. The mode operand is a legacy command; it will be deprecated in a future Fabric OS release.

--enable

> Enables NPIV on the specified port.

--disable

> Disables NPIV on the specified port.

--setloginlimit

> Sets the NPIV limit value for all the ports.

--help

> Displays the command usage.

Examples

To display the current NPIV port configuration:

```
switch:admin> portcfgshow
Ports of Slot 0    0  1  2  3    4  5  6  7    8  9 10 11   12 13 14 15
------------------+--+--+--+--+----+--+--+--+----+--+--+--+----+--+--+--+
Speed             AN AN AN AN   AN AN AN AN   AN AN AN AN   AN AN AN AN
Fill Word(On Active)0 0  0  0    0  0  0  0    0  0  0  0    0  0  0  0
Fill Word(Current) 0  0  0  0    0  0  0  0    0  0  0  0    0  0  0  0
Fil 0  0    0  0   0  0    0  0  0  0    0  0  0  0
AL_PA Offset 13   .. .. .. ..   .. .. .. ..   .. .. .. ..   .. .. .. ..
Trunk Port        ON ON ON ON   ON ON ON ON   ON ON ON ON   ON ON ON ON
Long Distance     .. .. .. ..   .. .. .. ..   .. .. .. ..   .. .. .. ..
VC Link Init      .. .. .. ..   .. .. .. ..   .. .. .. ..   .. .. .. ..
Locked L_Port     .. .. .. ..   .. .. .. ..   .. .. .. ..   .. .. .. ..
Locked G_Port     .. .. .. ..   .. .. .. ..   .. .. .. ..   .. .. .. ..
Disabled E_Port   .. .. .. ..   .. .. .. ..   .. .. .. ..   .. .. .. ..
Locked E_Port     .. .. .. ..   .. .. .. ..   .. .. .. ..   .. .. .. ..
ISL R_RDY Mode    .. .. .. ..   .. .. .. ..   .. .. .. ..   .. .. .. ..
RSCN Suppressed   .. .. .. ..   .. .. .. ..   .. .. .. ..   .. .. .. ..
Persistent Disable.. .. ON ON   .. .. .. ..   .. .. .. ..   .. .. .. ..
LOS TOV enable    .. .. .. ..   .. .. .. ..   .. .. .. ..   .. .. .. ..
NPIV capability   ON ON ON ON   ON ON ON ON   ON ON ON ON   ON ON ON ON
NPIV PP Limit     80 80 80 80   80 80 80 80   95 95 95 95   95 95 95 95
(output truncated)
```

To disable NPIV functionality on port 7 and to display the change:

```
switch:admin> portcfgnpivport --disable 7
switch:admin> portcfgshow 0/7
Area Number:            7
```

```
                    Speed Level:              AUTO(HW)
                    Fill Word(On Active):     0(Idle-Idle)
                    Fill Word(Current):       0(Idle-Idle)
                    AL_PA Offset 13:          OFF
                    Trunk Port                ON
                    Long Distance             OFF
                    VC Link Init              OFF
                    Locked L_Port             OFF
                    Locked G_Port             OFF
                    Disabled E_Port           OFF
                    Locked E_Port             OFF
                    ISL R_RDY Mode            OFF
                    RSCN Suppressed           OFF
                    Persistent Disable        OFF
                    LOS TOV enable            OFF
                    NPIV capability           OFF
                    QOS E_Port                AE
                    Port Auto Disable:        OFF
                    Rate Limit                OFF
                    EX Port                   OFF
                    Mirror Port               OFF
                    Credit Recovery           ON
                    F_Port Buffers            12
                    Fault Delay:              0(R_A_TOV)
                    NPIV PP Limit:            126
                    CSCTL mode:               OFF
                    Frame Shooter Port        OFF
                    D-Port mode:              OFF
```

See Also

configure, portCfgDefault, portCfgShow

portCfgNPort

Enables or disables N_Port functionality for an Access Gateway port.

Synopsis

portcfgnport [*slot/*]*port1*[*-port2*] [*mode*]

Description

Use this command to enable or disable N_Port functionality for an Access Gateway port or for a range of ports. The enabled N_Ports automatically come online if they are connected to an enterprise fabric switch that supports NPIV. When used without operands, this command displays the port configuration.

Notes

NPIV capability must be enabled on the ports connected to the Access Gateway. By default, NPIV is enabled. Use **portcfgnpivport --enable** to enable NPIV capability on a port, if it was previously disabled.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following optional operands:

slot

> Specifies the slot number, followed by a slash (/) on bladed systems.

port1[*-port2*]

> Specifies a single port or a range of ports to be configured as N_Ports, for example, 3-9, or 2/10-15.

mode

> Enables (1) or disables (0) N_Port functionality on the specified ports. The default mode is 0 (disabled).

Examples

To enable N_Port functionality for a port:

switch:admin> **portcfgnport 8 1**

To enable N_Port functionality for a set of ports in a specific range:

switch:admin> **portcfgnport 2-3 1**

To display the N_Port configuration for all ports:

```
switch:admin> portcfgnport
Ports                   0  1  2  3  4  5  6  7  8  9 10    [...]
--------------------+--+--+--+--+--+--+--+--+--+--+--+- [...]
Locked N_Port          .. .. ON ON .. .. .. .. ON .. ..    [...]


switch:admin> portcfgshow
Ports of Slot 0     0  1  2  3   4  5  6  7   8  9 10 11  12 13 14 15
----------------+--+--+--+--+---+--+--+--+---+--+--+--+---+--+--+---
Speed              AN AN AN AN  AN AN AN AN  AN AN AN AN  AN AN AN AN
Fill Word(On Active)0  0  0  0   0  0  0  0   0  0  0  0   0  0  0  0
Fill Word(Current )0  0  0  0   0  0  0  0   0  0  0  0   0  0  0  0
Trunk Port         ON ON ON ON  ON ON ON ON  ON ON ON ON  ON ON ON ON
Locked N_Port       .. .. ON ON .. .. .. ..  .. .. .. ..  .. .. .. ..
Persistent Disable.. .. .. ..   .. .. .. ..  .. .. .. ..  .. .. .. ..
(output truncated)
```

See Also

portCfgShow

portCfgOctetSpeedCombo

Sets port speed combination for a port octet.

Synopsis

```
portcfgoctetspeedcombo [slot]port combo
portcfgoctetspeedcombo [slot]port -default
```

Description

Use this command to configure the port speed octet. When you configure a given port, the combination applies to all ports in the octet. You can specify the octet by any port within the octet. To change the first octet, for example, you can specify any port from 0 through 7 as a port argument value. Refer to **combo** option for the speed combinations.

The ports in the octet can run on any speed supported by its octet combination. This applies to both auto-negotiated and fixed speeds.

Before you change the octet speed combination, make sure that the following conditions are met:

- All fixed speed ports are configured at a speed supported by the new combination.

- All online ports in auto-negotiation mode have a negotiated speed supported by the new combination.

- If a port is running at a speed not supported in the new combo, you must disable the port or change the speed to a supported fixed speed before you can set the combo.

If any of the ports does not meet the conditions, the operation fails with an appropriate error message. You can change the port speed or disable the ports and retry the command.

The octet combination default is 1. Use the **portCfgOctetSpeedCombo** *port* **-default** command to reset the octet combination to its default value.

Notes

This command is supported only on 16Gb/s-capable and 32Gb/s-capable platforms. This command is not supported on Brocade 6505, Brocade 7840, Brocade 7810, and Brocade G610 switches.

This command is supported on Ethernet ports.

The operation of the **portCfgOctetSpeedCombo** can be disruptive.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

slot

> On bladed systems only, specifies the slot number of the port to be configured, followed by a slash (/).

port

> Sets the speed combination for the specified port and all other ports in the octet port group.

combo

> Specifies the speed combination for the ports in the octet. The following speed combinations are supported:

1

> Supports auto-negotiated or fixed port speeds of 16, 8, 4, and 2Gb/s in Brocade Gen 5 and supports auto-negotiated or fixed port speeds of 32, 16, 8, and 4Gb/s in Brocade Gen 6 platform.

2

> Supports auto-negotiated or fixed port speeds of 10, 8, 4, and 2Gb/s in Brocade Gen 5 and supports auto-negotiated or fixed port speeds of 10, 8, and 4Gb/s in Brocade Gen 6 platform.

3

> Supports auto-negotiated or fixed port speeds of 16 and 10Gb/s in Brocade Gen 5 platform.

-default

> Sets all octet combination values back to the default value of 1.

Examples

To configure the ports in the first octet for combination 3 on a Brocade 6510:

```
switch:admin> portcfgoctetspeedcombo 3 3
```

To reset the combination to default:

```
switch:admin> portcfgoctetspeedcombo 3 -default
```

To switch from combo 3 to combo 2 and there are online ports running at 16G speed.:

```
switch:admin> portcfgoctetspeedcombo 2 2
The following ports must be disabled or \
   speed configuration needs to be change.
Please retry the operation after taking appropriate action.

Speeds supported for octet combo 2 -   [10G,8G,4G,2G,AN]
```

```
         Port Index   Speed
         ===================
          0              16*
          1             N16+
          2             N16+
          3             N16+
          4             N10+
          5             N16+
          6             N16+
          7             N16+

         * Port speed configuration must be changed
         + Port must be disabled

         Setting octet speed combo failed
```

See Also

portCfgSpeed, switchCfgSpeed

portCfgPersistence

Sets or removes the persistent disable flag on a port or a range of ports.

Synopsis

portcfgpersistence --set [**-persistentenable | -pe**] [**-persistentdisable | -pd**]
[*slot/*]*port1*[*-port2*] [...]
portcfgpersistence --set [**-persistentenable | -pe**] [**-persistentdisable | -pd**]
-i [*index1*[*-index2*] [...] [**-f**]]
portcfgpersistence --set [**-persistentenable | -pe**] [**-persistentdisable | -pd**]
-x [*index1*[*-index2*] [...] [**-f**]]
portcfgpersistence --set [**-persistentenable | -pe**] [**-persistentdisable | -pd**]
-slot [*slot1*[*-slot2*] [...]
portcfgpersistence -h

Description

Use this command to set or remove the persistent disable flag on a port or a range of ports.

You can identify a single port to be configured by its port number or by its port index number.
Port ranges are supported with index numbers or by specifying a slot or a slot range. Use
switchShow for a listing of valid ports, slots, and port index numbers.

Specifying multiple ports with the index (**-i**), (**-x**), or slot (**-s**) option is supported only if **portSwap**
is disabled. They are not supported on GbE ports and configured F_Port trunks. Use the **-
i**option without a port index argument to display the **portSwap** status, or alternately use
portSwapShow.

This command only sets or removes the flag for persistent disabling of the port. The switch still
runs power-on diagnostics and initializes a persistently disabled port. The **portEnable**,
switchEnable, and**bladeEnable** commands do not enable a specific port or ports alone, but these
commands succeed on a switch with one or more persistently disabled ports.

The persistent switch disable or enable configuration does not alter the persistent disable or
enable configurations of the ports within the switch.

Because ports are by default persistently enabled, the persistently disabled state of a port is
cleared by the **portCfgDefault** command.

Notes

This command is blocked if the persistent disable flag is set when the port is currently enabled.

This command is blocked if the switch is operating in the FICON Management Server mode
(fmsmode); instead, use **portDisable** with Active=Saved mode enabled.

This command is not supported on FCoE ports.

The execution of this command is subject to Virtual Fabric restrictions that may be in place.
Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

slot

On bladed systems only, specifies the slot number of the ports to set the flag, followed by a slash (/).

*port1***[-***port2***]**

Sets the flag for a single port or a range of ports identified by port numbers. The port range cannot span slots, but you can specify multiple port range pairs separated by a space, for example 3/1-4 4/7-9.

-f

Ignores nonexisting ports.

-i *index1***[-***index2***]**

Sets the flag for a port or a range of ports identified by port index numbers. You can specify multiple index ranges separated by a space, for example, **-i** 33-38 40-60.

-x *index1***[-***index2***]**

Sets the flag for a port or a range of ports identified by index number in hexadecimal format. You can specify multiple port ranges separated by a space, for example, -x 21-26 28-3c.

-slot [*slot1***[-***slot2***]**

Sets the flag on all ports on a slot or on a range of slots, for example, **-s** 3-5. You can specify multiple slot ranges separated by a space, for example, **-s** 3-5 8-10.

-h

Displays the command usage.

Examples

To set the persistentenable flag on a port:

```
switch:admin> portcfgpersistence --set -pe 2
```

To set the persistentdisable flag on a port:

```
switch:admin> portcfgpersistence --set -pd 0
```

See Also

portCfgDefault, portDisable, portEnable, portCfgPersistentDisable, portCfgPersistentEnable, portShow, portSwapDisable, portSwapShow, switchShow

portCfgPersistentDisable

Persistently disables a port or a range of ports.

Synopsis

```
portcfgpersistentdisable
portcfgpersistentdisable [slot/]port1[-port2] [...]
portcfgpersistentdisable -i [index1[-index2] [...] [-f]]
portcfgpersistentdisable -x [hex1[-hex2] [...] [-f]]
portcfgpersistentdisable -slot [slot1[-slot2] [...]
portcfgpersistentdisable [slot/]port -r disable_reason_string
portcfgpersistentdisable -h
```

Description

Use this command to persistently disable a port or a range of ports. Persistently disabled ports remain disabled across power cycles, switch reboots, and switch enables. By default, a port is enabled persistently, unless the port is capable of routing. The change in configuration is effective immediately.

You can identify a single port to be configured by its port number or by its port index number in decimal or hexadecimal format. Port ranges are supported with port numbers, index numbers (decimal or hexadecimal) or by specifying a slot or a slot range. Use **switchShow** for a listing of valid ports, slots, and port index numbers. When used without operands, this command displays all persistently disabled ports on the switch.

Specifying multiple ports with the index number (**-i** or **-x**) or slot (**-s**) option is supported only if **PortSwap** is disabled. They are not supported on GbE ports and configured F_Port trunks. Use the **-i**option without a port index argument to display the **portSwap** status, or alternately use **portSwapShow**.

The persistent disable configuration overrides existing port configurations, but it does not change these configurations. Use the **portCfgPersistentEnable** command to enable a port persistently and to restore all previously set port configurations for that port. The switch still runs power-on diagnostics and initializes a persistently disabled port. The **portEnable**, **switchEnable**, and**bladeEnable** commands do not enable a specific port or ports alone, but these commands succeed on a switch with one or more persistently disabled ports. The **portEnable** command fails when issued on persistently disabled ports.

The persistent switch disable or enable configuration does not alter the persistent disable or enable configurations of the ports within the switch.

Because ports are by default persistently enabled, the persistently disabled state of a port is cleared by the **portCfgDefault** command.

Notes

This command is blocked if the switch is operating in the FICON Management Server mode (fmsmode); instead, use **portDisable** with Active=Saved mode enabled.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

This command is not supported on FCoE ports.

This command is supported on Ethernet ports.

Operands

This command has the following operands:

slot

> On bladed systems only, specifies the slot number of the ports to be disabled persistently, followed by a slash (/).

port1[*-port2*]

> Persistently disables a single port or a range of ports identified by port numbers. The port range cannot span slots, but you can specify multiple port ranges pairs separated by a space, for example 3/1-4 4/7-9.

-i *index1*[*-index2*]

> Persistently disables a port or a range of ports identified by port index numbers. You may specify multiple index ranges separated by a space, for example, **-i** 33-38 40-60.

-x [*hex1* [*-hex2*]]

> Persistently disables a port or a range of ports identified by port index numbers in hexadecimal format. You may specify multiple port ranges separated by a space, for example, -x 21-26 28-3c.

-f

> Ignores nonexisting ports. This operand is valid only with the **-i** and **-x** options.

-slot [*slot1*[*-slot2*]

> Persistently disables all ports on a slot or on a range of slots, for example, **-s** 3-5. You may specify multiple slot ranges separated by a space, for example, **-s** 3-5 8-10.

-r *disable_reason_string*

> Specifies the reason for disabling the port persistently. The string can be up to 16 characters long and must be enclosed in double quotation marks.

-h

> Displays the command usage.

Examples

To disable a single port persistently:

```
switch:admin> portcfgpersistentdisable 2/4
```

To disable a range of ports persistently:

```
switch:admin> portcfgpersistentdisable 2/4-8
```

To disable multiple port ranges persistently:

```
switch:admin> portcfgpersistentdisable 2/12  \
    -15 3/10-12 4/3-4
```

To display the **portSwap** status:

```
switch:admin> portcfgpersistentdisable -i
portcfgpersistentdisable: portSwap feature enabled.
'-i' option not supported.
```

To disable a port persistently by specifying its index number:

```
switch:admin> portcfgpersistentdisable -i 176
```

To disable a range of ports persistently by specifying the corresponding port index range:

```
switch:admin> portcfgpersistentdisable -i 17-18
```

To disable multiple ports persistently by specifying multiple port index ranges:

```
switch:admin> portcfgpersistentdisable -i 17-18 30-39
```

To disable all ports on slots 3-5 persistently:

```
switch:admin> portcfgpersistentdisable -s 3-5
```

To disable all ports on slots 3-5 and 8-10 persistently:

```
switch:admin> portcfgpersistentdisable -s 3-5 8-10
```

To display the persistently disabled ports on the switch:

```
switch:admin> portcfgpersistentdisable
---------+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---
+
Disabled -   -   -   -   -   -   -   -   -   -   -   -   -   -   -   -

Slot 0  16  17  18  19  20  21  22  23  24  25  26  27  28  29  30  31
------+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+--
-
Disabled - YES YES  -   -   -   -   -   -   -   -   -   -   - YES YES

Slot 0   32  33  34  35  36  37  38  39
---------+---+---+---+---+---+---+---+--
Disabled YES YES YES YES YES YES YES YES
```

To disable a port persistently with a disable reason:

```
switch:admin> portcfgpersistentdisable 3/3 -r "bad SFP"
```

See Also

portCfgDefault, portDisable, portEnable, portCfgPersistentEnable, portShow, portSwapDisable, portSwapShow, switchShow

portCfgPersistentEnable

Persistently enables a port or a range of ports.

Synopsis

```
portcfgpersistentenable
portcfgpersistentenable [slot/]port1[-port2] [...]
portcfgpersistentenable -i [index1[-index2] [...] [-f]]
portcfgpersistentenable -x [hex1[-hex2] [...] [-f]]
portcfgpersistentenable -s[lot] [slot1[-slot2]
portcfgpersistentenable -h
```

Description

Use this command to persistently enable a port or a range of ports. If the port is connected to another switch when this command is issued, the fabric may reconfigure. After the port is persistently enabled, devices connected to the port can again communicate with the fabric.

You can identify a single port to be configured by its port number or by its port index number in decimal or hexadecimal format. Port ranges are supported with port numbers, index numbers (decimal or hexadecimal) or by specifying a slot or a slot range. Use **switchShow** for a listing of valid ports, slots, and port index numbers. When used without operands, this command displays all persistently enabled ports on the switch.

Specifying multiple ports with the index number (**-i** or **-x**) or slot (**-s**) option is supported only if **PortSwap** is disabled. They are not supported on GbE ports and configured F_Port trunks. Use the **-i** option without a port index argument to display the **portSwap** status, or alternately use **portSwapShow**.

For ports that come online after being persistently enabled, the following indications may be sent to indicate a state transition: RSCN, SNMP trap, Web pop-up window.

Persistently enabled ports remain enabled across power cycles, switch reboots, and switch enables. By default, a port is enabled persistently, unless the port is capable of routing. The change in configuration is effective immediately.

This command re-enables all previously set port configurations of a specified port. You can temporarily disable a persistently enabled port with the **portDisable** or **switchDisable** commands. The persistent switch disable or enable configuration does not alter the persistent disable or enable configurations of the ports within the switch. The configuration commands **configDefault** and **portCfgDefault** do not modify the persistent enable attribute of a port.

Notes

This command is blocked if the switch is operating in the FICON Management Server mode (fmsmode). Instead use **portEnable** with Active=Saved Mode enabled.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

This command is not supported on FCoE ports.

Operands

This command has the following operands:

slot

On bladed systems only, specifies the slot number of the ports to be enabled persistently, followed by a slash (/).

port1[*port2*]

Persistently enables a single port or a range of ports identified by port numbers. The port range cannot span slots, but you can specify multiple port ranges pairs separated by a space, for example 3/1-4 4/7-9.

-i *index1*[*-index2*]

Persistently enables a port or a range of ports identified by port index numbers. You may specify multiple index ranges separated by a space, for example, 33-38 40-60.

-x [*hex1* [*-hex2*]]

Persistently enables a port or a range of ports identified by port index numbers in hexa-decimal format. You may specify multiple port ranges separated by a space, for example, -x 21-26 28-3c.

-f

Ignores nonexisting ports. This operand is valid only with the **-i** and **-x** options.

-slot [*slot1*[*-slot2*]

Persistently enables all ports on a slot or on a range of slots, for example, **-s** 3-5. Multiple slot ranges are not supported with this command.

-h

Displays the command usage.

Examples

To enable a single port persistently:

```
switch:admin> portcfgpersistentenable 2/4
```

To enable a range of ports persistently:

```
switch:admin> portcfgpersistentenable 2/4-8
```

To enable multiple port ranges persistently:

```
switch:admin> portcfgpersistentenable 2/24-26 3/10-12 4/3-4
```

To enable a port persistently by specifying its index number:

```
switch:admin> portcfgpersistentenable -i 176
```

To enable a range of ports persistently by specifying the corresponding port index range:

```
switch:admin> portcfgpersistentenable -i 17-18
```

To enable multiple ports persistently by specifying multiple port index ranges:

```
switch:admin> portcfgpersistentenable -i 17-18 30-39
```

To enable all ports on slots 3-5 persistently:

```
switch:admin> portcfgpersistentenable -s 3-5
```

To display the persistently enabled ports on the switch:

```
switch:admin> portcfgpersistentenable

Slot 9   0   1   2   3   4   5   6   7   8   9  10  11  12  13  14  15
-------+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+-
--
Enabled YES YES YES YES YES YES YES YES YES YES YES YES YES YES YES YES
(output truncated)
```

See Also

portDisable, portEnable, portCfgPersistentDisable, portCfgShow, portShow, portSwapDisable, portSwapShow, switchShow

portCfgQoS

Enables or disables QoS, sets the default configuration, and sets and resets the ingress rate limit.

Synopsis

```
portcfgqos --disable | --enable [slot/]port
portcfgqos --setratelimit [slot/]port ratelimit
portcfgqos --resetratelimit [slot/]port
portcfgqos --enable | --disable  [slot/]port[-port] csctl_mode
portcfgqos --default [slot/]port
portcfgqos --help
```

Description

Use this command to configure traffic prioritization on a port. Two alternate modes of traffic prioritization are supported by this command: Adaptive Networking/Quality of Service (AN/QoS) or Class-Specific Control (CS_CTL):

• The Adaptive Networking with QoS feature allows latency-sensitive applications to share storage resources alongside throughput-intensive applications. You can enable or disable Adaptive Networking/Quality of Service (AN/QoS) on a port, set or reset the ingress rate limit for the specified port, and set the default behavior. Ingress Rate Limiting delays the return of BB credits to the external device. By limiting the throughput on the ingress side of a port, existing congestion can be removed or avoided.

• In Fabric OS v7.0.0 and later, an alternate method of traffic flow prioritization based on the CS_CTL bits of a Fibre Channel frame is provided through this command. This feature uses the value of the CS_CTL bit of the frame to determine the virtual channel (VC), so each frame can be prioritized based on the value of the CS_CTL bit.

CS_CTL flow prioritization is independent of traffic prioritization based on QoS zones; and both methods are mutually exclusive. If CS_CTL VC mode is enabled on an F/FL_Port, QoS-based traffic flow prioritization cannot be used between any two devices connected to these F/FL_Ports in that fabric and vice versa.

If both QoS-based and CS_CTL-based traffic prioritization are enabled on the same F/FL_Port, the CS_CTL-based method takes priority over the QoS zones. When QoS is enabled on an F/FL_Port and you enable CS_CTL VC mode on the same port, the command displays a message stating that QoS zones will lose priority to CS_CTL-based traffic prioritization. When you disable CS_CTL mode on a given F/FL port, the QoS zones, if already enabled, become the effective frame classification method for all devices connected to that F/FL_Port.

On 16Gb/s-capable Inter Chassis Link (ICL) ports, QoS is not configurable and it is always enabled internally.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Enabling and disabling QOS is potentially disruptive to the I/O on the affected port.

This command is not supported on all platforms. Refer to the *Brocade Fabric OS Administration Guide* for more information.

The configuration changes effected by this command are persistent across system reboots.

The Fabric OS port configuration commands are not supported on FCoE ports.

This command is not supported on the Brocade Analytics Monitoring Platform.

Operands

This command has the following operands:

slot

> For bladed systems only, specifies the slot number of the port to configure, followed by a slash (/).

port[-*port*]

> Specifies the port or port range to be configured, relative to the slot for bladed systems. Use **switchShow** for a listing of valid ports.

--disable

> Disables the current configuration on the specified ports. When issued with the **csctl_-mode** operand, this command disables traffic prioritization based on CS_CTL. If QoS was enabled before you enabled **csctl_mode**, this command restores QoS-based traffic prioritization.

--enable

> Enables QoS or CS_CTL mode. When issued with the **csctl_mode** operand, this command enables traffic prioritization based on CS_CTL. When you enable **csctl_mode**, the command displays a message stating that QoS zones will lose priority to CS_CTL-based traffic prioritization.

--resetratelimit

> Turns off the ingress rate limiting feature on the specified ports.

--setratelimit *ratelimit*

> Sets an ingress rate limit to reduce traffic from the specified port. This configuration is applicable only to F/FL_Ports. For E/EX_Ports, this configuration would not be effective. The ingress rate limit is enforced only when a given port can run at a speed higher than the speed specified in the configuration. For example if the rate limit is set at 4Gb/s and the port comes online only at 2Gb/s, no enforcement is needed. Specify an ingress rate in Mb/s. Supported values for ratelimit are: 200, 400, 600, 800, 1000, 1500, 2000, 2500, 3000, 3500, 4000, 5000, 6000, 7000, and 8000, 9000, 10000, 11000, 12000, 13000, 14000, 15000, 16000. This operand is not supported on Brocade G610 switch, Brocade G620 switch, Brocade X6-4 Director, and Brocade X6-8 Director.

--default

> Applies the default configuration to the specified port. This command attempts to re-enable QoS; success depends on availability of buffers. If CS_CTL was enabled on the port, this command disables the configuration.

--help

> Displays the command usage.

Examples

> To enable QoS on a range of ports:
>
> ```
> switch:admin> portcfgqos --enable 1/15-18
> ```
>
> To disable QoS on a port:
>
> ```
> switch:admin> portcfgqos --disable 1/15
> ```
>
> To set the default QoS configuration on a port:
>
> ```
> switch:admin> portcfgqos --default 12/41
> ```
>
> To set the ingress rate limit on a port to 2Gb/s:
>
> ```
> switch:admin> portcfgqos --setratelimit 12/41 2000
> ```
>
> To reset the ingress rate limit on a port:
>
> ```
> switch:admin> portcfgqos --resetratelimit 12/41
> ```
>
> To enable CS_CTL VC mode on a port when QoS is enabled:
>
> ```
> switch:admin> portcfgqos --enable 1/10-16 csctl_mode
> Enabling CSCTL mode flows causes QoS zone flows to lose priority on
> such ports.
> Enabling CSCTL mode takes precedence over quarantine of traffic
> destined to zoned slow drain device.
> Enabling CSCTL mode will deactivate sys_analytics_vtap on this logical
> switch.
>
> Do you want to proceed?(y/n)
> ```
>
> To disable CS_CTL VC mode on a port range:
>
> ```
> switch:admin> portcfgqos --disable 1/10-16 csctl_mode
> ```

See Also

> portCfg, portCmd, portShow, switchShow, configure

portCfgShow

Displays port configuration settings.

Synopsis

```
portcfgshow
portcfgshow [slot/]port
portcfgshow -i [-index1[-index2] [...] [-f]]
portcfgshow -slot [slot1[-slot2] [...]]
portcfgshow [option] [slot/]ge_port
portcfgshow [fciptunnel | fcipcircuit]
     [all | [slot/]veport] [optional_argument]
portcfgshow ipsec-policy
portcfgshow lag
portcfgshow tcl
portcfgshow sla
```

Description

Use this command to display the current configuration of a port. The behavior of this command is platform-specific; output varies depending on port type and platform, and not all options are supported on all platforms.

Non-GbE port displays

When used without operands, this command displays port configuration settings for all ports on a switch, except Gigabit Ethernet (GbE) ports.

Displays supported only on the Brocade 7840 switch, Brocade 7810 switch, and Brocade FX8-24 and Brocade SX6 blades

Use this command with optional arguments to display the following parameters configured for a GbE port on the Brocade 7840 switch, Brocade 7810, and on the Brocade FX8-24 and Brocade SX6 blades.

This command is supported on Ethernet ports.

- IP interfaces on the GbE port

- Static routes on the IP interfaces

- Address resolution protocol (ARP) entries

- VLAN tag configuration

- Fibre Channel over IP (FCIP) tunnel configuration settings

- IPSec configuration

- Inband Management IP addresses and routes.

- Display IPsec policy. Currently supported on the Brocade 7840, Brocade 7810, and Brocade SX6 blade only.

Non-GbE port displays

The following information is displayed when the command is issued for all ports, for a single port, or for one or more port ranges specified by their port index numbers or slot numbers:

Area Number

> Displays the port area number. This field is displayed only when **portCfgShow** is executed for a single port.

Octet Speed Combo

> Displays the speed configuration for a port octet. This value is set by the **portCfgOctet-SpeedCombo** command. Port octet speed configuration is supported only on 16Gb/s-capable platforms. On unsupported platforms the Octet Speed Combo field is suppressed. Valid Octet Combo values include the following:

1

> Autonegotiated or fixed port speeds of 16, 8, 4, and 2Gb/s.

2

> Autonegotiated or fixed port speeds of 10, 8, 4, and 2Gb/s.

3

> Autonegotiated or fixed port speeds of 16 and 10Gb/s.

Speed

> Displays Auto for auto speed negotiation mode, or a specific speed of 1Gb/s, 2Gb/s, 4Gb/s, 8Gb/s, or 16Gb/s, and soft, 10, or AX on 8Gb/s. This value is set by the **portCfgSpeed** command.

Fill Word (On Active)

> Displays the fill word setting that will take effect after the next time the port goes offline and comes back. Possible values are 0 (Idle-Idle), 1 (arbff-arbff), 2 (Idle-arbff), or 3 (A-A then SW I-A).This parameter is set by the **portcfgFillword** command.

Fill Word (Current)

> Displays the currently effective fill word setting. Possible values are 0 (Idle-Idle), 1 (arbff-arbff), 2 (Idle-arbff), or 3 (A-A then SW I-A). This parameter is set by the **portcfgFillword** command.

AL_PA Offset 13

> Displays (..) or OFF when the arbitrated loop physical address (AL_PA) on the port is configured to use a 0x0 AL_PA address (default). Displays ON when the address configuration is 0x13 AL_PA. This value is set by the **portCfgAlpa** command.

Trunk Port

Displays ON when port is set for trunking. Displays (..) or OFF when trunking is disabled on the port. This value is set by the **portCfgTrunkPort** command.

Long Distance

Displays (..) or OFF when long distance mode is off; otherwise, displays long distance levels. This value is set by the **portCfgLongDistance** command. Values are as follows:

LE

The link is up to 10 km.

LD

The distance is determined dynamically.

LS

The distance is determined statically by user input.

VC Link Init

Displays (..) or OFF when the long distance link initialization option is turned off. Displays ON when it is turned on for long distance mode. This value is set by the **portCfgLongDistance** command.

Desired Distance

Displays the desired distance of the port. This field is displayed only when portCfgShow is executed for a single port and would only display for LS and LD long distance mode.

Reserved Buffers

Displays the reserved buffers for the port. This field is displayed only when portCfgShow is executed for a single port and would only display for LS and LD long distance mode.

Locked L_Port

Displays ON when the port is locked to L_Port only. Displays (..) or OFF when L_Port lock mode is disabled and the port behaves as a U_Port). This value is set by the **portCfgLport** command.

Locked G_Port

Displays ON when the port is locked to G_Port only. Displays (..) or OFF when G_Port lock mode is disabled and the port behaves as a U_Port. This value is set by the **portCfgGport** command.

Disabled E_Port

Displays ON when the port is not allowed to be an E_Port. Displays (..) or OFF when the port is allowed to function as an E_Port. This value is set by the **portCfgEport** command.

ISL R_RDY Mode

Displays ON when ISL R_RDY mode is enabled on the port. Displays (..) or OFF when ISL R_RDY mode is disabled. This value is set by the **portCfgISLMode** command.

RSCN Suppressed

Displays ON when RSCN suppression is enabled on the port. Displays (..) or OFF when RSCN suppression is disabled. This value is set by the **portCfg rscnsupr** command.

Persistent Disable

Displays ON when the port is persistently disabled; otherwise displays (..) or OFF. This value is set by the **portCfgPersistentDisable** command.

LOS TOV mode

Displays 1 (ON:FixSpd) or 2 (ON:AN&FixSpd) when LOS TOV is enabled on the port; otherwise displays (..) or 0 (OFF). This value is set by the **portCfgLossTov** command.

NPIV capability

Displays ON when N_Port ID Virtualization (NPIV) is enabled on the port (default). Displays (..) or OFF when NPIV capability is disabled. This value is set by the **portCfgN-PIVPort** command.

NPIV PP Limit

Displays the maximum number of allowed logins for the port. Displays the default of 126 or the configured maximum. This parameter is set with the **portCfgNPIVPort --setloginlim-it**command.

NPIV FLOGI Logout

Displays ON when the Base Device Logout feature is enabled and the base device can logout without disrupting the NPIV devices on the same port. Displays (..) when the base device log out causes the NPIV devices on the same port to log out.

QOS E_Port

Displays ON when Quality of Service (QoS) is enabled on the E_Port (or EX_Port) when QoS is enabled in an FCR deployment scenario. Displays (..) or OFF when QoS is disabled. By default, QoS is enabled if sufficient buffers are available. Displays AE when QoS is configured as Auto Enabled. In the AE state, QoS is enabled based on the availability of buffers.

Use **islShow** to determine the current status of QoS (on or off) in the AE state. This value is set by the **portCfgQos** command.

EX_Port

Displays ON when the port is configured as an EX_Port. Otherwise displays (..) or OFF. This value is set by the **portCfgExPort** command.

Mirror Port

Displays ON when Mirror Port is enabled on the port. Displays (..) or OFF when Mirror Port is disabled. This value is set by the **portCfg mirrorport** command.

SIM Port

Displays ON when SIM Port is enabled on the port. Displays (..) or OFF when SIM Port is disabled. This value is set by the **flow --control** *flow_name* **-simport** command.

SIM Port

Displays ON when SIM Port is enabled on the port. Displays (..) or OFF when SIM Port is disabled. This value is set by the **flow --control** *flow_name* **-simport** command.

8G Non-DFE Configured

Displays ON (Static) if non-DFE is enabled on the port.

Displays OFF (Auto) if the feature is disabled (default).

Displays OFF (Force Disabled) if the feature is force disabled (using option **--force_disable**).

8G Non-DFE State

Displays Active if non-DFE is activated on the port.

Displays Inactive if non-DFE is not activated.

FC Fastwrite

Displays ON when FC FastWrite is enabled on the port or (..) or OFF when disabled. FastWrite is disabled by default. This value is set by the **portCfg fastwrite** FC Fastwrite is no longer supported as of Fabric OS v7.0.0.

Rate Limit

Displays ON when ingress rate limit is set on the port or (..) or OFF when the ingress rate limiting feature is disabled. This value is set by the **portCfgQos --setratelimit** command. The default value is OFF.

Credit Recovery

Displays ON when Credit Recovery is enabled on the port. Displays (..) or OFF when the feature is disabled. This value is set by the **portCfgCreditRecovery** command. The credit recovery feature is enabled by default.

Port Auto Disable

Displays On when the Auto Disable feature is enabled on a port. Displays (..) or OFF when the feature is disabled. This feature causes ports to become disabled when they encounter an event that would cause them to reinitialize. This feature is enabled by the **portCfgAutoDisable** command. The feature is disabled by default. In the single port view, the configured trigger conditions are displayed when the feature is disabled. Refer to the example section for an illustration.

F_Port Buffers

Displays the number of configured F_Port buffers. Displays (..) or OFF if no buffers are configured. The buffer value is set by the **portCfgfPortbuffers** command.

E_Port Credits

Displays the number of configured E_Port credits. Displays (..) or OFF if no credits are configured. The credit value is set by the **portCfgEportCredits** command.

CSCTL mode

Displays ON if CSCTL mode is enabled on the port. Displays (..) or OFF if the feature is disabled. This parameter is set with the **portCfgQos** command.

TDZ mode

Displays ON when Target Driven Zoning (TDZ) is enabled on a port and the port is online or offline. Displays (..) or OFF when the configuration is disabled. TDZ is enabled by the **portCfgTdz** command; it is disabled by default.

D_Port mode

Displays ON when the port is configured as a D_Port; otherwise displays (..) or OFF. Refer to the **portCfgDPort** command for more information. This parameter is displayed only on on 16Gb/s-capable blades that support D_Port capability.

D_Port over DWDM

Displays ON when dwdm is enabled on that port using the **portcfgdport** command. This option is used to set if the link connecting two switches is a DWDM (Dense Wavelength Division Multiplexing) link. However, it can be set on normal links also.

Fault Delay

Displays the Fault delay value. Displays 0 if the value is R_A_TOV. This is the default. Displays 1 if the value is 1.2 seconds. This value is set by the **portCfgFaultDelay**command. valid for FC ports only.

Compression

Displays ON when compression is enabled on a port. Displays (..) or OFF when the configuration is disabled. Compression is enabled by the **portCfgCompress** command; it is disabled by default.

Encryption

Displays ON when encryption is enabled on a port. Displays (..) or OFF when the config-uration is disabled. Encryption is enabled by the **portCfgEncrypt** command; it is disabled by default.

10G/16G FEC

Displays ON when Forward Error Correction (FEC) is enabled on a port and the port is online. Displays (..) or OFF when the configuration is disabled. FEC is enabled by the **portCfgFec** command; it is enabled by default.

16G FEC via TTS

Displays ON when control of the Forward Error Correction (FEC) state is permitted via TTS by an externally attached host or device. Displays (..) or OFF when the external control of FEC is disabled. Refer to the **portCfgFec** command for additional information.

Clean Address Bit

Displays ON when the port is configured with Clean Address Bit. Displays (..) or OFF when the port configuration is disabled. Refer to the **portCfgCleanAddress** command for additional information.

When **portCfgShow** is issued for a single FCoE port, only the following fields are displayed: **Area Number**, **Speed Level**, **AL_PA Offset**, **RSCN Suppressed**, and **NPIV PP Limit**. Refer to the example section for an illustration.

You can identify a single port to be displayed by its port number or by its port index number. Port ranges are supported with index numbers or by specifying a slot or a slot range. Use **switchShow** for a listing of valid ports, slots, and port index numbers. When used without operands, this command displays all persistently disabled ports on the switch.

Specifying multiple ports with the index (**-i**) or slot (**-s**) option is supported only if **PortSwap** is disabled. They are not supported on GbE ports and configured F_Port trunks. Use the **-i**option without a port index argument to display the **portSwap** status, or alternately use **portSwapShow**.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

The Fabric OS port configuration commands are not supported on FCoE ports.

Operands

This command has the following operands:

slot

For bladed systems only, specifies the slot number of the port to be configured, followed by a slash (/).

port

    Specifies the number of the port to be displayed, relative to its slot for bladed systems. Use **switchShow** for a listing of valid port numbers.

-i *index1***[**-*index2***]**

    Specifies a port or a range of ports identified by port index numbers. You can specify multiple index ranges separated by a space, for example, **-i** 33-38 40-60.

-f

    Ignores nonexisting ports. This operand is valid only with the **-i** option.

-slot *slot1***[**-*slot2***]**

    Specifies a slot or a range of slots. You can specify multiple slot ranges separated by a space, for example,**-s** 1-3 5-7.

ge_port

    Specifies the number of the GbE Port to be displayed. The GbE ports are numbered ge0 - ge9 on the Brocade FX8-24 blade. The 10GbE ports on the Brocade FX8-24 blade are numbered xge0 and xge1. Use the **switchShow** command for a list of valid ports.

Use **portCfgShow** with a GbE port or with one of the optional arguments to display specific FCIP-related parameters.

Displays supported on the Brocade 7840 switch, Brocade 7810 switch, and Brocade FX8-24 and Brocade SX6 blades

When issued on the Brocade 7840 switch, Brocade 7810, and Brocade FX8-24 and Brocade SX6 blades, tunnels and parameters not applicable to these platforms are not displayed. Use the **portShow** command to display FCIP tunnel and circuit parameters on the Brocade FX8-24 blade.

ipif

    Displays the IP interface configurations. IPv6 addresses are supported.

arp

    Displays the address resolution protocol (ARP) table. This option is supported on Brocade FX8-24 and Brocade SX6 extension blades.

iproute

    Displays the IP route on the specified GbE port. IPv6 addresses are supported.

vlantag

    Displays the VLAN tagging configuration. For each entry, the output displays the IP inter-face address, the destination IP address, the VLAN ID, and the L2 CoS priority. This display includes permanent entries only. Permanent entries are configured at the IP inter-

face level with the **portCfg vlantag** command. To view VLAN tagged tunnels and circuits along with permanent entries, use the **portShow vlantag** command. This option is supported on Brocade FX8-24 platforms

mgmtif ge_*port*

Displays the inband management interfaces configured for a specified GbE Port. The display includes the interface status (enabled or disabled), the interface IPv4 Address, the netmask, effective MTU, and annotated port flags. This option is supported on Brocade FX8-24 and Brocade SX6 extension blades.

mgmtroute ge_*port*

Displays the management routes configured for a specified GbE Port. The display includes the destination IPv4 Address, the netmask, the gateway address, and annotated port flags. This option is supported on Brocade FX8-24 and Brocade SX6 extension blades

fcipcircuit

Displays FCIP circuits and related parameters.

fciptunnel

Displays FCIP tunnels and related parameters.

The following options are supported with **fcipcircuit** and **fciptunnel**:

all

Displays information for all FCIP tunnels.

ve_port

Displays information for the specified FCIP tunnel. To display the tunnel, specify the VE_Port number associated with the tunnel configured on one of the GbE ports. VE_Ports are numbered 16-23.

optional_argument

The following optional argument is supported with **fciptunnel**:

-ipsec

Displays whether IPSec is enabled or disabled. If enabled, the key is displayed. If IPSec is enabled and configured in legacy mode, the mode is displayed as "legacy". The mode information is displayed whether or not you issue the **-ipsec** option.

ipsec-policy

Displays the IPsec policy. This option is supported on the Brocade 7840 switch and Brocade 7810 switch only.

lag

Displays the static link aggregation group (LAG) information.

tcl

Displays the Traffic Control List (TCL) information.

sla

Displays the Service Level Agreement (SLA) information.

Examples

To display the port configuration settings for a single port:

```
switch:admin> portcfgshow 10/38
Area Number:            11
Octet Speed Combo:      2(10G|8G|4G)
Eth Speed Level:        10G
FC Speed Level:         AUTO(HW)
AL_PA Offset 13:        OFF
Trunk Port              ON
Long Distance           OFF
VC Link Init            OFF
Locked L_Port           OFF
Locked G_Port           OFF
Disabled E_Port         OFF
Locked E_Port           OFF
ISL R_RDY Mode          OFF
RSCN Suppressed         OFF
Persistent Disable      OFF
LOS TOV mode            0(OFF)
NPIV capability         ON
QOS Port                AE
Port Auto Disable:      OFF
EX Port                 OFF
Mirror Port             OFF
SIM Port                OFF
Credit Recovery         ON
F_Port Buffers          OFF
E_Port Credits          OFF
Fault Delay:            0(R_A_TOV)
NPIV PP Limit:          126
NPIV FLOGI Logout:      OFF
CSCTL mode:             OFF
TDZ mode:               OFF
D-Port mode:            OFF
D-Port over DWDM:       OFF
Compression:            OFF
Encryption:             OFF
10G/16G FEC:            ON
16G FEC via TTS:        OFF
```

```
Flex Port:                    ETH
Breakout mode                 ON
Clean Address Bit             OFF
```

To display the port configuration settings on a Brocade 7840 for a range of ports specified by their index numbers:

```
switch:admin> portcfgshow -i 0-15
Index:              0   1   2   3     4   5   6   7     8   9   10  11
12  13  14  15
-------------------+---+---+---+-----+---+---+---+-----+---+---+---
+-----+---+---+---
Octet Speed Combo 1   1   1   1     1   1   1   1     2   2   2   2
2   2   2   2
Speed             AN  AN  AN  AN    AN  AN  AN  AN    AN  AN  AN  AN
AN  AN  AN  AN
Eth Speed Level:  AN  AN  AN  AN    AN  AN  AN  AN    AN  AN  AN  AN
AN  AN  AN  AN
AL_PA Offset 13   ..  ..  ..  ..    ..  ..  ..  ..    ..  ..  ..  ..
..  ..  ..  ..
Trunk Port        ON  ON  ON  ON    ON  ON  ON  ON    ON  ON  ON  ON
ON  ON  ON  ON
Long Distance     ..  ..  ..  ..    ..  ..  ..  ..    ..  ..  ..  ..
..  ..  ..  ..
VC Link Init      ..  ..  ..  ..    ..  ..  ..  ..    ..  ..  ..  ..
..  ..  ..  ..
Locked L_Port     ..  ..  ..  ..    ..  ..  ..  ..    ..  ..  ..  ..
..  ..  ..  ..
Locked G_Port     ..  ..  ..  ..    ..  ..  ..  ..    ..  ..  ..  ..
..  ..  ..  ..
Disabled E_Port   ..  ..  ..  ..    ..  ..  ..  ..    ..  ..  ..  ..
..  ..  ..  ..
Locked E_Port     ..  ..  ..  ..    ..  ..  ..  ..    ..  ..  ..  ..
..  ..  ..  ..
ISL R_RDY Mode    ..  ..  ..  ..    ..  ..  ..  ..    ..  ..  ..  ..
..  ..  ..  ..
RSCN Suppressed   ..  ..  ..  ..    ..  ..  ..  ..    ..  ..  ..  ..
..  ..  ..  ..
Persistent Disable..  ..  ..  ..    ..  ..  ..  ..    ..  ..  ..  ..
..  ..  ..  ..
LOS TOV mode      0   0   0   0     0   0   0   0     0   0   0   0
0   0   0   0
NPIV capability   ON  ON  ON  ON    ON  ON  ON  ON    ON  ON  ON  ON
ON  ON  ON  ON
NPIV PP Limit     126 126 126 126   126 126 126 126   126 126 126 126
126 126 126 126
NPIV FLOGI Logout ..  ..  ..  ..    ..  ..  ..  ..    ..  ..  ..  ..
..  ..  ..  ..
QOS Port          AE  AE  AE  AE    AE  AE  AE  AE    AE  AE  AE  AE
AE  AE  AE  AE
EX Port           ..  ..  ..  ..    ..  ..  ..  ..    ..  ..  ..  ..
..  ..  ..  ..
```

```
Mirror Port         ..  ..  ..  ..    ..  ..  ..  ..    ..  ..  ..  ..
..  ..  ..  ..
Credit Recovery    ON  ON  ON  ON    ON  ON  ON  ON    ON  ON  ON  ON
ON  ON  ON  ON
Fport Buffers       ..  ..  ..  ..    ..  ..  ..  ..    ..  ..  ..  ..
..  ..  ..  ..
Eport Credits       ..  ..  ..  ..    ..  ..  ..  ..    ..  ..  ..  ..
..  ..  ..  ..
Port Auto Disable ..  ..  ..  ..    ..  ..  ..  ..    ..  ..  ..  ..
..  ..  ..  ..
CSCTL mode          ..  ..  ..  ..    ..  ..  ..  ..    ..  ..  ..  ..
..  ..  ..  ..
D-Port mode         ..  ..  ..  ..    ..  ..  ..  ..    ..  ..  ..  ..
..  ..  ..  ..
D-Port over DWDM  ..  ..  ..  ..    ..  ..  ..  ..    ..  ..  ..  ..
..  ..  ..  ..
Compression         ..  ..  ..  ..    ..  ..  ..  ..    ..  ..  ..  ..
..  ..  ..  ..
Encryption          ..  ..  ..  ..    ..  ..  ..  ..    ..  ..  ..  ..
..  ..  ..  ..
10G/16G FEC        ON  ON  ON  ON    ON  ON  ON  ON    ON  ON  ON  ON
ON  ON  ON  ON
16G FEC via TTS     ..  ..  ..  ..    ..  ..  ..  ..    ..  ..  ..  ..
..  ..  ..  ..
Fault Delay         0   0   0   0     0   0   0   0     0   0   0   0
0   0   0   0
SIM Port            ..  ..  ..  ..    ..  ..  ..  ..    ..  ..  ..  ..
..  ..  ..  ..
8G Non-DFE          ..  ..  ..  ..    ..  ..  ..  ..    ..  ..  ..  ..
..  ..  ..  ..
TDZ mode            ..  ..  ..  ..    ..  ..  ..  ..    ..  ..  ..  ..
..  ..  ..  ..
Flex Port           ET  ET  FC  FC    ET  ET  FC  FC    FC  FC  ET  ET
FC  FC  ET  ET
Breakout mode       0   0   0   0     0   0   0   0     0   0   0   0
0   0   0   0


  where AE:QoSAutoEnable, AN:AutoNegotiate, ..:OFF,
  -:NotApplicable, ??:INVALID,
```

To display the configuration for DWDM lossSync fixed speed port:

```
switch:admin> portcfgshow -i 3-5
Index:              3   4   5
---------------- +---+---+---
Speed              AN  AN  AN
Fill Word          0   0   0
AL_PA Offset 13    ..  ..  ..
Trunk Port         ON  ON  ON
Long Distance      ..  ..  ..
VC Link Init       ..  ..  ..
Locked L_Port      ..  ..  ..
Locked G_Port      ..  ..  ..
```

```
Disabled E_Port        ..   ..   ..
Locked E_Port          ..   ..   ..
ISL R_RDY Mode         ..   ..   ..
RSCN Suppressed        ..   ..   ..
Persistent Disable ..   ..   ..
LOS TOV enable         ..   ..   ..
DWDM losync mode     ON  OFF  OFF
NPIV capability      ON   ON   ON
NPIV PP Limit       255  255  255
QOS E_Port            AE   AE   AE
EX Port                ..   ..   ..
Mirror Port            ..   ..   ..
Rate Limit             ..   ..   ..
Credit Recovery      ON   ON   ON
Fport Buffers          ..   ..   ..
Port Auto Disable  ..   ..   ..
CSCTL mode             ..   ..   ..
```

To display the port configuration settings for all ports on slot 1 on a Brocade DCX 8510-4:

```
switch:admin> portcfgshow -slot 1
Index:                0  1  2  3   4  5  6  7   8  9 10 11  12 13 14 15
------------------+--+--+--+--+--+---+--+--+--+---+--+--+--+--+--+--+--+--
Octet Speed Combo  1  1  1  1   1  1  1  1   1  1  1  1   1  1  1  1
Speed             AN AN AN AN  AN AN AN AN  AN AN AN AN  AN AN AN AN
AL_PA Offset 13    .. .. .. ..  .. .. .. ..  .. .. .. ..  .. .. .. ..
Trunk Port        ON ON ON ON  ON ON ON ON  ON ON ON ON  ON ON ON ON
Long Distance      .. .. .. ..  .. .. .. ..  .. .. .. ..  .. .. .. ..
VC Link Init       .. .. .. ..  .. .. .. ..  .. .. .. ..  .. .. .. ..
Locked L_Port      .. .. .. ..  .. .. .. ..  .. .. .. ..  .. .. .. ..
Locked G_Port      .. .. .. ..  .. .. .. ..  .. .. .. ..  .. .. .. ..
Disabled E_Port    .. .. .. ..  .. .. .. ..  .. .. .. ..  .. .. .. ..
Locked E_Port      .. .. .. ..  .. .. .. ..  .. .. .. ..  .. .. .. ..
ISL R_RDY Mode     .. .. .. ..  .. .. .. ..  .. .. .. ..  .. .. .. ..
RSCN Suppressed    .. .. .. ..  .. .. .. ..  .. .. .. ..  .. .. .. ..
Persistent Disable.. .. .. ..  .. .. .. ..  .. .. .. ..  .. .. .. ..
LOS TOV mode       0  2  2  1   2  1  1  0   0  0  0  0   0  0  0  0
NPIV capability   ON ON ON ON  ON ON ON ON  ON ON ON ON  ON ON ON ON
NPIV PP Limit     90 90 90 90  90 90 90 90  90 90 90 90  90 90 90 90
NPIV FLOGI Logout ON ON ON ON  ON ON ON ON  ON ON ON ON  ON ON ON ON
QOS E_Port        AE AE AE AE  AE AE AE AE  AE AE AE AE   .. .. .. ..
EX Port            .. .. .. ..  .. .. .. ..  .. .. .. ..  .. .. .. ..
Mirror Port        .. .. .. ..  .. .. .. ..  .. .. .. ..  .. .. .. ..
Rate Limit         .. .. .. ..  .. .. .. ..  .. .. .. ..  .. .. .. ..
Credit Recovery   ON ON ON ON  ON ON ON ON  ON ON ON ON  ON ON ON ON
Fport Buffers      .. .. .. ..  .. .. .. ..  .. .. .. ..  .. .. .. ..
Port Auto Disable .. .. .. ..  .. .. .. ..  .. .. .. ..  .. .. .. ..
CSCTL mode         .. .. .. ..  .. .. .. ..  .. .. .. ..  .. .. .. ..
TDZ mode           .. .. .. ..  .. .. .. ..  .. .. .. ..  .. .. .. ..
D-Port mode        .. .. .. ..  .. .. .. ..  .. .. .. ..  .. .. .. ..
D-Port over DWDM   .. .. .. ..  .. .. .. ..  .. .. .. ..  .. .. .. ..
Compression        .. .. .. ..  .. .. .. ..  .. .. .. ..  .. .. .. ..
Encryption         .. .. .. ..  .. .. .. ..  .. .. .. ..  .. .. .. ..
```

```
10G/16G FEC        ON ON ON ON   ON ON ON ON   ON ON ON ON   ON ON ON ON
16G FEC via TTS    .. .. .. ..   .. .. .. ..   .. .. .. ..   .. .. .. ..
Fault Delay        0  0  0  0    0  0  0  0    0  0  0  0    0  0  0  0
SIM Port           .. .. .. ..   .. .. .. ..   .. .. .. ..   .. .. .. ..
8G Non-DFE         .. .. .. ..   .. .. .. ..   .. .. .. ..   .. .. .. ..
Flex Port          ET ET FC FC   ET ET FC FC   FC FC ET ET   FC FC ET ET
Breakout mode      0  0  0  0    0  0  0  0    0  0  0  0    0  0  0  0
Clean Address Bit ON .. .. ..    .. .. .. ..   .. .. .. ..   .. .. .. ..

Index:             16 17 18 19   20 21 22 23   24 25 26 27   28 29 30 31
----------------+--+--+--+--+---+--+--+--+---+--+--+--+---+--+--+--+--+
Octet Speed Combo 1  1  1  1     1  1  1  1     1  1  1  1     1  1  1  1
Speed              AN AN AN AN   AN AN AN AN   AN AN AN AN   AN AN AN AN
AL_PA Offset 13    .. .. .. ..   .. .. .. ..   .. .. .. ..   .. .. .. ..
Trunk Port         ON ON ON ON   ON ON ON ON   ON ON ON ON   ON ON ON ON
Long Distance      .. .. .. ..   .. .. .. ..   .. .. .. ..   .. .. .. ..
VC Link Init       .. .. .. ..   .. .. .. ..   .. .. .. ..   .. .. .. ..
Locked L_Port      .. .. .. ..   .. .. .. ..   .. .. .. ..   .. .. .. ..
Locked G_Port      .. .. .. ..   .. .. .. ..   .. .. .. ..   .. .. .. ..
Disabled E_Port    .. .. .. ..   .. .. .. ..   .. .. .. ..   .. .. .. ..
Locked E_Port      .. .. .. ..   .. .. .. ..   .. .. .. ..   .. .. .. ..
ISL R_RDY Mode     .. .. .. ..   .. .. .. ..   .. .. .. ..   .. .. .. ..
RSCN Suppressed    .. .. .. ..   .. .. .. ..   .. .. .. ..   .. .. .. ..
Persistent Disable.. .. .. ..    .. .. .. ..   .. .. .. ..   .. .. .. ..
LOS TOV mode       0  2  2  1    2  1  1  0    0  0  0  0    0  0  0  0
NPIV capability    ON ON ON ON   ON ON ON ON   ON ON ON ON   ON ON ON ON
NPIV PP Limit      90 90 90 90   90 90 90 90   90 90 90 90   90 90 90 90
NPIV FLOGI Logout  ON ON ON ON   ON ON ON ON   ON ON ON ON   ON ON ON ON
QOS E_Port         AE AE AE AE   AE AE AE AE   AE AE AE AE   .. .. .. ..
EX Port            .. .. .. ..   .. .. .. ..   .. .. .. ..   .. .. .. ..
Mirror Port        .. .. .. ..   .. .. .. ..   .. .. .. ..   .. .. .. ..
Rate Limit         .. .. .. ..   .. .. .. ..   .. .. .. ..   .. .. .. ..
Credit Recovery    ON ON ON ON   ON ON ON ON   ON ON ON ON   ON ON ON ON
Fport Buffers      .. .. .. ..   .. .. .. ..   .. .. .. ..   .. .. .. ..
Port Auto Disable  .. .. .. ..   .. .. .. ..   .. .. .. ..   .. .. .. ..
CSCTL mode         .. .. .. ..   .. .. .. ..   .. .. .. ..   .. .. .. ..
TDZ mode           .. .. .. ..   .. .. .. ..   .. .. .. ..   .. .. .. ..
D-Port mode        .. .. .. ..   .. .. .. ..   .. .. .. ..   .. .. .. ..
D-Port over DWDM   .. .. .. ..   .. .. .. ..   .. .. .. ..   .. .. .. ..
Compression        .. .. .. ..   .. .. .. ..   .. .. .. ..   .. .. .. ..
Encryption         .. .. .. ..   .. .. .. ..   .. .. .. ..   .. .. .. ..
10G/16G FEC        ON ON ON ON   ON ON ON ON   ON ON ON ON   ON ON ON ON
16G FEC via TTS    .. .. .. ..   .. .. .. ..   .. .. .. ..   .. .. .. ..
Fault Delay        0  0  0  0    0  0  0  0    0  0  0  0    0  0  0  0
SIM Port           .. .. .. ..   .. .. .. ..   .. .. .. ..   .. .. .. ..
8G Non-DFE         .. .. .. ..   .. .. .. ..   .. .. .. ..   .. .. .. ..
Flex Port          ET ET FC FC   ET ET FC FC   FC FC ET ET   FC FC ET ET
Breakout mode      0  0  0  0    0  0  0  0    0  0  0  0    0  0  0  0
Clean Address Bit  .. .. .. ..   .. .. .. ..   .. .. .. ..   .. .. .. ..

  where AE:QoSAutoEnable, AN:AutoNegotiate, ..:OFF, NA:NotApplicable,
??:INVALID,
```

To display the configuration settings for a single port on a switch with Access Gateway enabled:

```
switch:admin> portcfgshow 8
Area Number:            8
Speed Level:            AUTO(HW)
Fill Word(On Active)    0(Idle-Idle)
Fill Word(Current)      0(Idle-Idle)
Trunk Port              ON
Locked N_Port           OFF
Persistent Disable      OFF
NPIV capability         ON
NPIV FLOGI Logout       ON
QOS Port                AE
Port Auto Disable:      OFF
Rate Limit              OFF
F_Port Buffers          OFF
NPIV PP Limit:          126
Fault Delay:            0(R_A_TOV)
NPIV PP Limit:          126
D-Port mode:            OFF
D-Port over DWDM:       OFF
Compression:            OFF
Encryption:             OFF
10G/16G FEC:            ON
16G FEC via TTS:        ON
Flex Port:              ETH
Breakout mode           ON
```

To display port configuration settings on a Gen6 switch with a Brocade SX6 blade in Slot 4:

```
switch:admin> portcfgshow -slot 12
Index:             64  65  66  67    68  69  70  71 [truncated]
------------------+---+---+---+-----+---+---+---+-----+---+---+-
Octet Speed Combo  1   1   1   1     1   1   1   1
Speed              AN  AN  AN  AN    AN  AN  AN  AN
AL_PA Offset 13    ..  ..  ..  ..    ..  ..  ..  ..
Trunk Port         ON  ON  ON  ON    ON  ON  ON  ON
Long Distance      ..  ..  ..  ..    ..  ..  ..  ..
VC Link Init       ..  ..  ..  ..    ..  ..  ..  ..
Locked L_Port      ..  ..  ..  ..    ..  ..  ..  ..
Locked G_Port      ..  ..  ..  ..    ..  ..  ..  ..
Disabled E_Port    ..  ..  ..  ..    ..  ..  ..  ..
Locked E_Port      ..  ..  ..  ..    ..  ..  ..  ..
ISL R_RDY Mode     ..  ..  ..  ..    ..  ..  ..  ..
RSCN Suppressed    ..  ..  ..  ..    ..  ..  ..  ..
Persistent Disable ..  ..  ..  ..    ..  ..  ..  ..
LOS TOV mode       0   0   0   0     0   0   0   0
NPIV capability    ON  ON  ON  ON    ON  ON  ON  ON
NPIV PP Limit      126 126 126 126   126 126 126 126
NPIV FLOGI Logout  ..  ..  ..  ..    ..  ..  ..  ..
QOS Port           AE  AE  AE  AE    AE  AE  AE  AE
EX Port            ..  ..  ..  ..    ..  ..  ..  ..
Mirror Port        ..  ..  ..  ..    ..  ..  ..  ..
```

```
Credit Recovery      ON   ON   ON   ON      ON   ON   ON   ON
Fport Buffers        ..   ..   ..   ..      ..   ..   ..   ..
Eport Credits        ..   ..   ..   ..      ..   ..   ..   ..
Port Auto Disable    ..   ..   ..   ..      ..   ..   ..   ..
CSCTL mode           ..   ..   ..   ..      ..   ..   ..   ..
D-Port mode          ..   ..   ..   ..      ..   ..   ..   ..
D-Port over DWDM     ..   ..   ..   ..      ..   ..   ..   ..
Compression          ..   ..   ..   ..      ..   ..   ..   ..
10G/16G FEC          ON   ON   ON   ON      ON   ON   ON   ON
16G FEC via TTS      ..   ..   ..   ..      ..   ..   ..   ..
Fault Delay          0    0    0    0       0    0    0    0
8G Non-DFE           ..   ..   ..   ..      ..   ..   ..   ..
SIM Port             ..   ..   ..   ..      ..   ..   ..   ..
TDZ mode             ..   ..   ..   ..      ..   ..   ..   ..
Clean Address Bit    ON   ..   ..   ..      ..   ..   ..   ..
[output truncated]
```

To display port configuration settings for a single port on a Gen6 switch with a Brocade SX6 blade:

```
switch:admin> portcfgshow 4/4
Area Number:             68
Octet Speed Combo:       1(32G|16G|8G|4G)
Speed Level:             AUTO(HW)
AL_PA Offset 13:         OFF
Trunk Port               ON
Long Distance            OFF
VC Link Init             OFF
Locked L_Port            OFF
Locked G_Port            OFF
Disabled E_Port          OFF
Locked E_Port            OFF
ISL R_RDY Mode           OFF
RSCN Suppressed          OFF
Persistent Disable       OFF
LOS TOV mode             0(OFF)
NPIV capability          ON
QOS Port                 AE
Port Auto Disable:       OFF
EX Port                  OFF
Mirror Port              OFF
SIM Port                 OFF
Credit Recovery          ON
F_Port Buffers           OFF
E_Port Credits           OFF
Fault Delay:             0(R_A_TOV)
NPIV PP Limit:           126
NPIV FLOGI Logout:       OFF
CSCTL mode:              OFF
TDZ mode:                OFF
D-Port mode:             OFF
D-Port over DWDM:        OFF
Compression:             OFF
10G/16G FEC:             ON
```

```
16G FEC via TTS:          OFF
Clean Address Bit         OFF
```

To display the QoS configuration for an EX_Port (QoS over FCR deployment):

```
switch:admin> switchshow | grep EX-Port
 16  16  id   N4   Online      FC  EX-Port \
    10:00:00:05:1e:41:4a:45 "Tom_100"
(fabric id = 25 )(Trunk master)

switch:admin> portcfgshow 16
Area Number:              11
Octet Speed Combo:        1(16G|8G|4G|2G)
Speed Level:              AUTO(HW)
Fill Word(On Active)      0(Idle-Idle)
Fill Word(Current)        0(Idle-Idle)
AL_PA Offset 13:          OFF
Trunk Port                ON
Long Distance             LS
VC Link Init              OFF
Desired Distance          10 Km
Reserved Buffers          86
Locked L_Port             OFF
Locked G_Port             OFF
Disabled E_Port           OFF
ISL R_RDY Mode            OFF
RSCN Suppressed           OFF
Persistent Disable        OFF
LOS TOV mode              0(OFF)
NPIV capability           ON
NPIV FLOGI Logout         ON
QOS E_Port                AE
Port Auto Disable:        OFF
Rate Limit                OFF
EX Port                   ON
Mirror Port               OFF
Credit Recovery           ON
F_Port Buffers            OFF
NPIV PP Limit:            126
CSCTL mode:               OFF
TDZ mode:                 OFF
Fault Delay               1(1.2sec)
D-Port mode:              OFF
D-Port over DWDM:         OFF
10G/16G FEC:              ON
16G FEC via TTS:          ON
Clean Address Bit         OFF
```

To display an FCIP Tunnel on a Brocade FX8-24 with and without IPSec information (In the following examples, IPSec is in legacy mode):

```
switch:admin> portcfgshow fciptunnel 1/12 -ipsec
-------------------------------------------
Tunnel ID: 1/12
   Tunnel Description:
```

```
        Compression: Off
        Fastwrite: Off
        Tape Acceleration: Off
        TPerf Option: Off
        IPSec: Enabled (legacy)
        IPSec Key: '123456789012345678901234567890012'
        QoS Percentages: High 50%, Med 30%, Low 20%
        Remote WWN: Not Configured
        Local WWN: 10:00:00:05:1e:52:fe:00
        Flags: 0x00000000
        FICON: Off

switch:admin> portcfgshow fciptunnel 1/12
-------------------------------------------
Tunnel ID: 1/12
        Tunnel Description:
        Compression: Off
        Fastwrite: Off
        Tape Acceleration: Off
        TPerf Option: Off
        IPSec: Enabled (legacy)
        QoS Percentages: High 50%, Med 30%, Low 20%
        Remote WWN: Not Configured
        Local WWN: 10:00:00:05:1e:52:fe:00
        Flags: 0x00000000
        FICON: Off
```

See Also

portCfg, portCfgAutoDisable, portCfgCreditRecovery, portCfgEport, portCfgFec, portCfgGport, portCfgLongDistance, portCfgLport, portCfgNPIVPort, portCfgOctetSpeedCombo, portCfgSpeed, portCfgTrunkPort, portSwapDisable, portSwapShow, switchShow

portCfgSpeed

Configures the speed for a port or a range of ports.

Synopsis

```
portcfgspeed [slot/]port speed
portcfgspeed -i index1[-index2] [-f] speed [-m] max_auto_speed
portcfgspeed -x hex1[-hex2] [...] speed
portcfgspeed -slot slot1[-slot2] [...] speed [-m] max_auto_speed
portcfgspeed -h
```

Description

Use this command to set the speed on a specified port or port range. This command disables and then re-enables the ports, and the ports come online with the new speed setting. The configuration is saved in nonvolatile memory and is persistent across switch reboots or power cycles. Use the **portShow** command to display supported port speed levels. Use the **portCfgShow** command to display configured speed settings.

On Brocade Gen 5 and Brocade Gen 6 platforms, the **portCfgSpeed** command checks if the requested speed is allowed, based on the combination configured for the octet that contains the port. If the speed is not supported by the current octet speed combination, this command exits with a warning message that displays the combination compatible with desired speed . Use the **portCfgOctetSpeedCombo** command to the set the suggested combination before re-executing the **portCfgSpeed** command.

You can identify a single port to be configured by its port number or by its port index number in decimal or hexadecimal format. Port ranges are supported with port numbers, index numbers(decimal or hexadecimal) or by specifying a slot or a slot range. Use **switchShow** for a listing of valid ports, slots, and port index numbers.

Specifying multiple ports with the index (**-i**) or slot (**-s**) option is supported only if **PortSwap** is disabled. They are not supported on GbE ports and configured F_Port trunks. Use the **-i**option without a port index argument to display the **portSwap** status, or alternately use **portSwapShow**.

Notes

This configuration cannot be set on VE/VEX_Ports. For a virtual FC port, the speed is always 10 GbE and port speed autonegotiation is not possible.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

slot

> For bladed systems only, specifies the slot number of the ports to be configured, followed by a slash (/).

port

Configures a single port identified by the port number relative to the slot on bladed systems.

-i *index1*[**-***index2*]

Configures a port or a range of ports identified by port index numbers. Multiple port ranges are not supported with this command.

-f

Ignores nonexisting ports. This operand is valid only with the **-i** option.

-x *hex1* [**-***hex2*]

Configures a port or a range of ports identified by port numbers, index number in hexa-decimal format. You may specify multiple port ranges separated by a space, for example, -x 21-26 28-3c.

-slot *slot1*[**-***slot2*]

Configures all ports on a slot or on a range of slots, for example, **-s** 3-5. You may specify multiple slot ranges separated by a space, for example, **-s** 3-5 8-10.

speed

Sets speed for the specified ports. This operand is required. Valid values are one of the following.

0

Autosensing mode (hardware). The port automatically configures for maximum speed.

ax

Autosensing mode (hardware). The port automatically configures for maximum speed with enhanced retries (not supported on Brocade Gen 5 and Brocade Gen 6 platforms).

s

Auto-sensing mode (software). The port automatically configures for maximum speed with enhanced retries (not supported on Brocade Gen 6 platforms).

1

The port is set at a fixed speed of 1Gb/s (not supported on Brocade Gen 6 platforms).

2

The port is set at a fixed speed of 2Gb/s (not supported on Brocade Gen 6 platforms).

4

        The port is set at a fixed speed of 4Gb/s.

8

        The port is set at a fixed speed of 8Gb/s.

10

        The port is set at a fixed speed of 10Gb/s (not supported on 8G platforms).

16

        The port is set at a fixed speed of 16Gb/s (not supported on 8G platforms).

32

        The port is set at a fixed speed of 32Gb/s (not supported on 8G and 16G platforms).

40

        The port is set at a fixed speed of 40Gb/s for Ethernet port.

-m

        Sets auto-negotiation maximum speed. This operand is optional. Valid values are one of the following.

2

        Sets the maximum auto-negotiation speed to 2Gb/s (not supported on Brocade Gen 6 platforms).

4

        Sets the maximum auto-negotiation speed to 4Gb/s.

8

        Sets the maximum auto-negotiation speed to 8Gb/s.

16

        Sets the maximum auto-negotiation speed to 16Gb/s.

32

        Sets the maximum auto-negotiation speed to 32Gb/s.

-h

        Displays the command usage.

Examples

To set the speed of a port to 10Gb/s:

```
switch:admin> portcfgspeed 2/3 10
```

To set the speed of a port using the port index:

```
switch:admin> portcfgspeed -i 78 16
```

To set the speed of a port range using the port index:

```
switch:admin> portcfgspeed -i 24-38 8
```

To set all ports on slots 2 and 3 to 8Gb/s:

```
switch:admin> portcfgspeed -s 2-3 8
```

To set all ports on slots 2-3 and 9-12 to 10Gb/s:

```
switch:admin> portcfgspeed -s 2-3 9-12 10
```

To set the speed of all ports in a range:

```
switch:admin> portcfgspeed -x 1d-1e 8
```

To set the maximum auto-negotiation speed:

```
switch:admin> portcfgspeed 17 0 -m 4
```

See Also

portCfgOctetSpeedCombo, portCfgShow, portShow, switchCfgSpeed, portSwapDisable, switchCfgSpeed, portSwapShow, switchShow

portCfgTdz

Configures a port for Target Driven Zoning (TDZ).

Synopsis

```
portcfgtdz --enable [slot/]port_list
portcfgtdz --disable [slot/]port_list
portcfgtdz --show [slot/]port_list
portcfgtdz --help
```

Description

Use this command to configure a port to support Target Driven Zoning. This command enables or disables the Target Driven Zoning configuration on the specified port and saves the configuration persistently. Target Driven Zoning can be configured on E_Ports, F_Ports, and L_Ports that are online or offline and it does not toggle the port to apply the configuration. After Target Driven Zoning is configured on the specified port, it allows the connected target device to configure Target Driven Peer Zones to be enabled and committed to the switch fabric.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

When an FCS policy is enabled, this command can be issued only from the primary FCS switch.

Operands

This command has the following operands:

slot

For bladed systems only, specifies the slot number of the port on which the Target Driven Zoning configuration must be enabled or disabled, followed by a slash (/).

port_list

Specifies one or more ports, relative to the slot on bladed systems. Use **switchShow** for a listing of valid ports. A port list should be enclosed in double quotation marks and can consist of the following:

• A single port, for example, "8" or "5/8" on blades systems.

• A port range where beginning and end port are separated by a dash, for example, "8-13" or "5/8-13" on blades systems. A port range cannot span multiple slots.

• A set of ports separated by commas, for example "3,5,7,8" or "5/3,5,7,8" on bladed systems.

• A wildcard * indicates all ports. The wildcard can be represented as '*' or "*".

--enable

> Enables the Target Driven Zoning configuration on the specified port.

--disable

> Disables the Target Driven Zoning configuration on the specified port.

--show

> Displays the current Target Driven Zoning configuration status (ON or OFF) for the specified port.

--help

> Displays the command usage.

Examples

> To enable Target Driven Zoning configuration on a port:
>
> ```
> switch:admin> portcfgtdz --enable 8
> ```
>
> To display Target Driven Zoning configuration status for a specific port:
>
> ```
> switch:admin> portcfgtdz --show 8
> Port   Mode
> ============
> 8      ON
> ```
>
> To enable Target Driven Zoning configuration on a range of ports:
>
> ```
> switch:admin> portcfgtdz --enable 8-18
> ```
>
> To enable Target Driven Zoning configuration on all ports:
>
> ```
> switch:admin> portcfgtdz --enable "*"
> ```
>
> To disable Target Driven Zoning configuration on a port:
>
> ```
> switch:admin> portcfgtdz --disable 8
> ```

See Also

> portCfgShow, switchShow, zoneShow

portCfgTrunkPort

Enables or disables trunking on a port.

Synopsis

portcfgtrunkport [*slot/*]*port*[,] *mode*

Description

Use this command to enable or disable trunking on a port. Use **switchCfgTrunk** to enable or disable trunking on all ports of a switch.

When the command is executed to update the trunking configuration, the port to which the configuration applies is disabled and subsequently re-enabled with the new trunking configuration. Traffic through the ports may be temporarily disrupted.

Disabling trunking fails if a Trunk Area (TA) is enabled on the port.

Notes

Enabling trunking requires an ISL Trunking license. You may disable trunking without a license.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

The Fabric OS port configuration commands are not supported on FCoE ports.

Virtual FC Ports do not support frame-based trunking . If trunking is enabled for one of these ports in a slot, and a Brocade FX8-24 Extension blade is inserted into the slot, the configuration is not honored and the system logs a RASLOG error. An attempt to enable trunking for a Virtual FC port in a slot that contains a Brocade FX8-24 is rejected.

Operands

This command has the following operands:

slot

For bladed systems only, specifies the slot number of the port to be configured, followed by a slash (/).

port

Specifies the port to be configured, relative to its slot for bladed systems. Use **switchShow** to display a listing of valid ports.

mode

Specify 1 to enable trunking on the specified port. Specify 0 to disable trunking on the port. This operand is required. Trunking is enabled by default, when a trunking license is present on the switch.

Examples

To enable a port for trunking:

```
switch:admin> portcfgtrunkport 1/3, 1
```

See Also

portCfgShow, portShow, switchCfgTrunk, switchShow

portCfgVEXPort

Configures a port as a VEX_Port connected to an FC-IP and sets and displays VEX_Port configuration parameters.

Synopsis

portcfgvexport [*slot/*]*port* [*-port*]
portcfgvexport [**-a** *admin*]
portcfgvexport [**-f** *fabricid*]
portcfgvexport [**-r** *ratov*]
portcfgvexport [**-e** *edtov*]
portcfgvexport [**-d** *domainid*]
portcfgvexport [**-p** *pidformat*]
portcfgvexport [**-t** *fabric_parameter*]

Description

Use this command to configure a port as a VEX_Port, to display the port's VEX_Port configuration, or to change the configuration. If no optional parameter is specified, the command displays the currently configured values; otherwise, it sets the specified attribute to its new value. The port must be disabled prior to setting VEX_Port attributes. The port must be enabled before the port can become active following VEX_Port parameter changes. Use **portDisable** and **portEnable** to disable or enable the port.

When the port is not active, the preferred domain ID is configurable. The preferred domain ID is used by the VEX_Port's front phantom domain to request a domain ID from the principal switch. The domain ID received becomes the subsequent preferred domain ID, which is persistent and is displayed.

Notes

The fabric ID must be the same for every router port connected to the same edge fabric, and different for every edge fabric. If two ports are connected to the same fabric but have been assigned different fabric IDs, one of them will be disabled due to a fabric ID oversubscription. If two fabrics have been assigned the same fabric ID, one of them will be disabled due to a fabric ID conflict.

The front domain WWN field displays the WWN of the front domain. If the port is enabled and the state is "OK", the edge fabric principal switch domain ID and WWN also are displayed.

If the Fabric Parameter value is "Auto Negotiate", the port ID format, R_A_TOV, and E_D_TOV values display the negotiated values indicated by "(N)" next to them. The negotiated values are what the edge switch specifies in the ELP request. If the state is "Not OK", R_A_TOV and E_D_TOV display "Not Applicable". By default, all VEX_Ports are auto-ELP enabled.

If the Fabric Parameter attribute value is "User configured", port ID format, R_A_TOV, and E_D_TOV display the configured values.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

slot

On bladed systems only, specifies the slot number followed by a slash (/).

port[-*port*]

Specifies a port or a port range, relative to the slot number on bladed systems, for example, 5/17-29. Use **switchShow** for a list of valid ports. When executed with [*slot/*]*port* [-*port*] only, the command displays the current VEX_Port configuration.

-a *admin*

Enables or disables the specified port as a VEX_Port. Valid values are 1 (enable as VEX_Port), 2 (disable as VEX_Port and enable as non-VEX_Port). **portCfgDefault** may also be used to disable VEX_Ports.

-f *fabricid*

Specifies the fabric ID. Valid values are 1-128. If Fabric ID is not specified, FCR switch generates a valid Fabric ID from 1 through 128 and applies this value to the port's EX_Port configuration.

-r *ratov*

Specifies the R_A_TOV used for port negotiation. Valid values are 2000 to 120000. This operand is only applicable if the "Fabric Parameter" attribute value is not "Auto Negotiate".

-e *edtov*

Specifies the E_D_TOV used for port negotiation. Valid values are 1000 to 60000. This operand is only applicable if the "Fabric Parameter" attribute value is not "Auto Negotiate".

-d *domainid*

Specify the preferred domain ID. For Brocade native mode (**-m** 0). Valid values are 1 to 239.

-p *pidformat*

Specifies the Port ID format. Valid values are 0-native, 1-core, 2-extended edge. This operand is applicable only when *port mode* is set to 0 (native mode). If *port mode* is not "Brocade Native", the Port ID format displays as "Not applicable".

-t *fabric_parameter*

Enables or disables negotiation of the fabric parameters. Valid values are: 1-enable, 2-disable.

Examples

To display the VEX_Port configuration of port 2/16:

```
switch:admin> portcfgvexport 2/16

        Port    2/16   info
Admin:                  enabled
State:                  OK
Pid format:             core(N)
Edge Fabric ID:         16
Front Domain ID:        160
Front WWN:              50:06:06:9e:20:9f:ce:10
Principal Switch:       7
principal WWN:          10:00:00:60:69:c0:05:8a
Fabric Parameters:      Auto Negotiate
R_A_TOV:                9000(N)
E_D_TOV:                2000(N)
Authentication Type: DHCHAP
DH Group: 4
Hash Algorithm: SHA-1
Edge fabric's primary wwn: N/A
Edge fabric's version stamp: N/A
```

To set the fabric ID of port 2/21 to 5 and the port ID format to core:

```
switch:admin> portcfgvexport 2/21 -f 5 -p 1
```

To configure port 2/20 as a VEX_Port and set the fabric ID to 4:

```
switch:admin> portcfgvexport 2/20 -a 1 -f 4
```

To disable fabric parameter negotiation on port 2/20 of a VEX_Port:

```
switch:admin> portcfgvexport 2/20 -t 2
```

See Also

portCfgEXPort, portDisable, portEnable, portShow

portChannel

Configures or displays various parameters of port channel.

Synopsis

portchannel --create *port_channel_name* [**-key** *lagnum*]
    [**-type** [**static** | **dynamic**]]
portchannel --config [*portchannel_name* | *member_port*]
    [**-priority** *value*] [**-timeout l** | **s**]
    [**-autoneg on** | **off**]
    [**-rename** *new_po_name*]
    [**-type** [**static** | **dynamic**]]
portchannel --delete *port_channel_name*
portchannel [**--enable** | **--disable**] [*po_name*]
portchannel --add *po_name* [**-port** *slot/port*]
    [**-timeout l** | **s**]
portchannel --remove {*po_name*}
    [**-port** *slot/port*]
portchannel --show *option*
portchannel --help

Description

Use this command to configure or display various parameters of port channel. This command is supported only on the Brocade 7840, Brocade 7810, and Directors that support Brocade FC32-64 Port Blade or Brocade SX6 blades.

This command is supported on Ethernet ports.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--create

Creates a port channel.

-key *lagnum*

Specifies the preshared key to be used for authentication. The key value for dynamic port channel is optional. The valid key range is from 1 through 1000.

-type static | dynamic

Specifies the port channel type, static or dynamic.

port_channel_name

> The port channel name. Maximum of 31 characters allowed with alphanumeric characters hyphen and underscore.

--config

> Configures a port channel and member port specific parameters.

-priority *value*

> Sets the priority value. The option is intended only for dynamic port channel and an error occurs when user enters a static port channel. Valid range is from 0 through 65535.

-timeout l | s

> Defines a time limit. This is an optional parameter and the valid values are long(l) or short(s).

-autoneg on | off

> Enables or disables the auto negotiation mode for the LAG port members. This option is not applicable on an empty portchannel.

-rename *new_po_name*

> Renames the portchannel.

member_port

> Configures a particular member port.

-type static | dynamic

> Changes the portchannel type to static or dynamic.

--delete *port_channel_name*

> Deletes a port channel.

--enable | --disable

> Enables or disables a port channel.

--add

> Adds the member ports to the port channel.

--remove

> Removes the member ports from the port channel.

--show

> Displays the port channel information.

-all

> Displays details of all the static and dynamic port channels.

-static

> Displays details of all the static port channels.

-dynamic

> Displays details of all the dynamic port channels.

-detail

> Displays port channels details.

--help

> Displays the command usage.

Examples

> To create and add a port:

```
switch:admin> portchannel --create dyn123 -type dynamic
2017/09/25-08:48:51, [NSM-1004], 2001, FID 128, INFO, sw0,  Interface
dyn123 is created.
switch:admin> portchannel --show
Name                              Type        Oper-State   Port-Count
Member Ports
-------------------------------------------------------------------
------------
dyn123                            Dynamic     Offline      0

switch:admin> portchannel --add dyn123 -port ge2
Operation Succeeded.
2017/09/25-08:49:33, [NSM-1017], 2002, FID 128, INFO, sw0,  Interface
2 is added on interface dyn123.

switch:admin> portchannel --show
Name                              Type        Oper-State   Port-Count
Member Ports
-------------------------------------------------------------------
------------
dyn123                            Dynamic     Offline      1          ge2
```

> To configure a port:

```
switch:admin> portchannel --config dyn123 -autoneg on
```

```
Name :dyn123
Type :Dynamic
Key  :1
Autoneg  :On
Admin-state: Disable
Oper-state : Offline
  Admin Key: 0001 - Oper Key 0001
  LACP System ID: 0x8000,00-05-33-65-7f-c2
  PART System ID: 0x0000,00-00-00-00-00-00
  Portchannel Member count = 1
  Port          Oper state      Sync    Timeout
  -------------------------------------------
   ge2          Offline         0       Long
```

To add a particular port or port channel:

```
switch:admin> portchannel --add d1 -port 12
2017/08/18-11:47:56, [NSM-1017], 114, FID 128, INFO, sw0,  Interface
12 is added on interface d1.

switch:admin> portchannel --show d1
 Name :d1
 Type :Dynamic
 Key  :1
 Autoneg  :Off
 Admin-state: Disable
 Oper-state : Offline
  Admin Key: 0001 - Oper Key 0001
  LACP System ID: 0x8000,c4-f5-7c-00-99-c2
  PART System ID: 0x0000,00-00-00-00-00-00
  Portchannel Member count = 3
  PortOper state     SyncTimeout
  -------------------------------------------
   0/8    Offline   0 Long
   0/9    Offline   0 Long
   0/12   Offline   0 Long
```

To display details of dynamic port channel:

```
switch:admin> portchannel --show -dynamic -detail
Name :d1
Type :Dynamic
Key  :1
Autoneg  :Off
Admin-state: Disable
Oper-state : Offline
  Admin Key: 0001 - Oper Key 0001
  LACP System ID: 0x8000,c4-f5-7c-00-99-c2
  PART System ID: 0x0000,00-00-00-00-00-00
  Portchannel Member count = 2
  PortOper stateSyncTimeout
  -------------------------------------------
   0/8 Offline   0 Long
```

```
   0/9 Offline   0 Long

Name :d2
Type :Dynamic
Key  :2
Autoneg  :Off
Admin-state: Disable
Oper-state : Offline
  Admin Key: 0002 - Oper Key 0002
  LACP System ID: 0x8000,c4-f5-7c-00-99-c2
  PART System ID: 0x0000,00-00-00-00-00-00
  Portchannel Member count = 0

Name :d3
Type :Dynamic
Key  :4
Autoneg  :Off
Admin-state: Disable
Oper-state : Offline
  Admin Key: 0004 - Oper Key 0004
  LACP System ID: 0x8000,c4-f5-7c-00-99-c2
  PART System ID: 0x0000,00-00-00-00-00-00
  Portchannel Member count = 0
```

To display all the port channels information:

```
switch:admin> portchannel --show
Name    Type         Oper-State   Port-Count   Member Ports
-----------------------------------------------------------------------
------------
d1      Dynamic      Offline      3            8 ,9 ,
                                               12
d2      Dynamic      Offline      0
d3      Dynamic      Offline      0
s1      Static       Offline      0
```

See Also

portChannelShow

portChannelShow

Displays the port channels from a domain to the remote domains.

Synopsis

```
portchannelshow [domain]
portchannelshow --help
```

Description

Use this command to display information about port channels from a domain to one or all reachable remote domains. The command output includes the following information:

 # domain(s) in the fabric

Total number of domains in the fabric.

Local Domain ID

The domain number of local switch.

Domain

The domain number of destination switch.

Name

The name of the destination switch.

WWN

The world wide name (WWN) of the destination switch.

Port Channel

The list of port-channel interfaces. For each trunk, only the port number of the master port is displayed. This field displays "None" during the following conditions:

- Policy-Based Routing (PBR) is enabled on the switch.

- Traffic Isolation (TI) zone is applied on the egress port.

- Port channel is used by 8Gb/s-capable ingress ports.

- Port channel contains ICL ports or it is used by other ICL ingress ports.

- Port channel is not used by any ingress port.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

domain

Specifies the remote domain to display port channels between the switch in which
command is executed to the specified remote domain. You can specify *domain* in one of
the following formats:

domain_id

Specifies the domain number of destination switch.

name

Specifies the name of destination switch.

wwn

Specifies the WWN of destination switch.

--help

Displays the command usage.

Examples

To display port channels for all reachable domains:

```
switch:admin> portchannelshow
6 domain(s) in the fabric; Local Domain ID: 4

Domain:        1
Name:          sw0
WWN:           10:00:00:05:33:c1:26:00
Port Channel: None

Domain:        2
Name:          DCX_35_F_128
WWN:           10:00:00:05:1e:38:e5:23
Port Channel:
       Ports: 384, 385, 386, 387, 400, 401, 402, 403,
              417, 418, 419, 432, 433, 434, 435

Domain:        3
Name:          SW_122_F_128
WWN:           10:00:00:05:1e:9b:10:5b
Port Channel:
       Ports: 111, 248

Domain:        5
Name:          SW_65_F128
WWN:           10:00:00:05:1e:5c:f6:fd
```

```
Port Channel:
        Ports: 384, 385, 386, 387, 400, 401, 402, 403,
               417, 418, 419, 432, 433, 434, 435

Domain:       6
Name:         SW_121_F_128
WWN:          10:00:00:05:1e:9c:32:cc
Port Channel: None
```

To display port channels for a specific remote domain:

```
switch:admin> portchannelshow 10:00:00:05:1e:38:e5:23
Domain:       2
Name:         DCX_35_F_128
WWN:          10:00:00:05:1e:38:e5:23
Port Channel:
        Ports: 384, 385, 386, 387, 400, 401, 402, 403,
               417, 418, 419, 432, 433, 434, 435
```

See Also

islShow, trunkShow

portCmd

Diagnoses intelligent ports.

Synopsis

```
portcmd --ping [slot/][slot/]ge port
      -s src_ip -d dst_ip [-x | -crossport]
      [-n num_requests][-q service_type] [-t ttl][-w wait_time]
      [-z size][-v vlan_id [-c L2 Class-of-Service]]
portcmd --traceroute [slot/][slot/]ge port
      -s src_ip -d dst_ip [-x | -crossport]
      [-m max_hops][-f first_ttl][-q type_of_service][-w timeout]
      [-z size] [-v vlan_id [-c L2 Class-of-Service]]
portcmd --tperf [slot/]veport -sink | -source
      [-high | -medium | -low][-time duration] [-unidirectional]
      [-random] [-pattern pattern] [-size pdu_size]
      [-interval interval]
portcmd --pmtu [slot/] ge port -s src_ip -d dst_ip
      -q DSCP -c L2 Class-of-Service -v -y
portcmd --wtool wt-id | all action port arguments
portcmd --help
```

Description

Use this command to ping or trace a route to a destination IP host from an intelligent GbE port, or to determine the path characteristics between a local data source and a remote data sink.

When issued with the **--tperf** option, this command determines the path characteristics to a remote host or tunnel destination. TPerf generates statistics every 30 seconds by default unless you specify a different value for **-interval**. The output displays the following information:

Tunnel ID

Numeric identifier for the TPerf tunnel.

Traffic Priority

High, Medium, or Low.

bytes tx

Number of bytes transmitted.

bytes rx

Number of bytes received.

PDUs tx

Number of protocol data units transmitted.

PDUs rx

> Number of protocol data units received.

bad CRC headers rx

> Number of bad CRC headers received.

bad CRC payloads rx

> Number of bad CRC payloads received.

out of seq PDUs rx

> Number of out-of-sequence PDUs received.

flow control count

> Flow control count.

last rtt

> Last Round trip in milliseconds (RT traffic only).

VLAN tagging ensures that test traffic traverses the same path as real FCIP traffic. A VLAN tag entry must exist prior to issuing the **--ping** or **--traceroute** commands; this includes both the local and remote sides.

Notes

End-to-end path characterization is not supported if an IPSec-enabled tunnel exists that uses the same source/local IP address.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

slot

> For chassis-based systems only, specifies the slot number of the port to be configured, followed by a slash (/).

ge *port*

> Specifies the port number of the GbE port on the blade. For the Brocade 7840 switch, Brocade 7810 switch (supports only dp0), and the Brocade SX6 extension blade, specify GbE port number along with the DP number, for example, **portcfg ipif ge0.dp0**. The valid DP numbers are dp0 and dp1.

--ping

Pings a destination IP address from one of the source IP interfaces on the GbE port. Valid arguments and their values include the following:

-s *src_ip*

Specifies the source IP address that originates the ping request. IPv6 addresses are supported.

-d *dst_ip*

Specifies the destination IP address to which to target the ping request. IPv6 addresses are supported.

-x | -crossport

Specifies the source IP address as a crossport. A crossport is the nonlocal (secondary) XGE port to a VE_Port group that provides failover capabilities for the tunnel configured on the local XGE port. This operand is optional and supported only on the Brocade FX8-24 XGE ports.

-n *num_requests*

Specifies the number of ping requests. Valid values are 1 to 255. The default is 4. This operand is optional.

-q *service_type*

Specifies the type of service in the ping request. The default is 0 and service_type can be hex (0x0-0xFF) or decimal (0-255). This operand is optional.

-t *ttl*

Specifies the time to live. Valid values are 1 to 255. The default is 100. This operand is optional.

-w *wait_time*

Specifies the time to wait for the response of each ping request in seconds. The default is 5 seconds and the maximum wait time is 9 seconds. This operand is optional.

-z *size*

Specifies the default packet size to a fixed size in bytes. The default is 64 bytes. In an IPv4 environment, the ICMP/IP header occupies 28 bytes. In an IPv6 environment it occupies 48 bytes. The total size, including ICMP/IP headers (28 or 48 bytes without IP options) cannot be greater than the IP MTU configured on the interface. This operand is optional.

-v *vlan_id*

Specifies the VLAN ID. Values must be in the range between 1 and 4094. There is no default value. Note that a VLAN tag entry must exist on the local and remote sides prior to issuing the **-v** option. A VLAN Tag table entry is dynamically maintained by the **ipperf** application. See the **portCfg** help page for details on creating a VLAN tag table. This option is supported on Brocade FX8-24 blade only.

-c *L2 Class-of-Service*

Specifies Class of Service/Priority, as defined by IEEE 802.1p. Values must be in the range between 0 and 7. The default is 0. This operand is optional with the **-v** option.

--traceroute

Traces the IP router hops used to reach the host *dst_ip* from one of the source IP inter-faces on the GbE port. Valid arguments include the following:

-s *src_ip*

Specifies the local IP address to use for sourcing the probe packets. IPv6 addresses are supported.

-d *dst_ip*

Specifies the destination IP address to which to probe the IP router path. IPv6 addresses are supported.

-x | -crossport

Specifies the source IP address as a crossport. A crossport is the nonlocal (secondary) XGE port to a VE_Port group that provides failover capabilities for the tunnel configured on the local XGE port. This operand is optional and supported only on the Brocade FX8-24 XGE ports.

-m *max_hops*

Specifies the maximum hop limit used in the outgoing probe packets. The default value is 30 hops. This operand is optional.

-f *first_ttl*

Specifies the starting point for the "time to live" parameter. The default is 1. The command skips processing for those intermediate gateways that are less than the *first_ttl* hops. This operand is optional.

-q *service_type*

Specifies the type of service in the **traceroute** request. The default is 0 and service_type must be an integer from 0 to 255. This operand is optional.

-w *wait_time*

> Sets the time, in milliseconds, to wait for a response to a probe. The default is 5000 milli-seconds. The maximum wait time is 9000 milliseconds (9 seconds). This operand is optional.

-z *size*

> Specifies the size, in bytes, of the trace route packet to use. The default is 64 bytes. In an IPv4 environment, the ICMP/IP header occupies 28 bytes. In an IPv6 environment, it occupies 48 bytes. The total size, including ICMP/IP headers (28 or 48 bytes without IP options), cannot be greater than the IP MTU configured on the interface. This operand is optional.

-v *vlan_id*

> Specifies the VLAN ID. Values must be in the range between 1 and 4094. There is no default value. Note that a VLAN tag entry must exist on the local and remote sides prior to issuing the **-v** option. See the **portCfg** help page for details on creating a VLAN tag table. This option is supported on Brocade FX8-24 blade only.

-c *L2 Class-of-Service*

> Specifies Class of Service/Priority, as defined by the IEEE 802.1p specification. Values must be in the range between 0 and 7. The default value is 0. This operand is optional with the **-v** option.

--help

> Displays command usage.

--tperf

> Determines the path characteristics to a remote host or tunnel destination. The **-tperf** option requires two separate Brocade FX8-24 blades to function. One blade plays the role of a data sink and the other blade plays the role of the data source. TPerf also requires that you define a tunnel as a TPerf tunnel. Refer to **portCfg fciptunnel** for more information. This option is supported on Brocade FX8-24 blade only.

-sink | -source

> Designates the switch to function either as a data sink or a data source. This operand is required.

> When **-sink** is specified, TPerf begins to respond to traffic sent by the switch acting as the data source. The process continues to run until it is either terminated by user intervention (**Ctrl +C**) or, if a value for duration is specified with the **-t** option, until the process completes the set time frame.

> The following optional arguments are ignored on the data sink, because it services all requests from the data source: **-high**, **-medium**, **-low**, **-unidirectional**, **-random**, **-pattern**, and **-size**.

When **-source**is specified, TPerf generates traffic until it is interrupted by user intervention (**Ctrl + c**) or, if a value for duration is specified with the **-t** option, until the process completes the set time frame. The TPerf module on the remote host will immediately begin generating traffic; it is therefore imperative that the data sink has been started on the opposing switch before the data source is started on the local switch.

The following arguments are optional:

-high

Generates high priority traffic.

-medium

Generates medium priority traffic.

-low

Generates low priority traffic.

If no traffic priority is specified only medium priority traffic is generated.

-time *duration*

Specifies the duration of the TPerf traffic flow in seconds. If a value for duration is not specified, the process continues to run until it is terminated with **Ctrl + C**.

-unidirectional

Generates traffic in one direction only. The default is round-trip.

-random

Specifies a random protocol data unit (PDU) size between 2048 and the size of the send request. Refer to **-size** below.

-pattern *pattern*

Specifies the test data pattern for the payload as one of the following values:

0 | notspecified

No pattern is specified. TPerf applies whatever is already set or in memory. This is the default value.

1 | allzeros

The specified pattern is "all zeros".

2 | allones

The specified pattern is "all ones".

3 | incrementingbyte

The specified pattern is "incrementing byte".

4 | random

The specified pattern is "random".

5 | jitter

The specified pattern is "jitter".

-size *pdu_size*

Specifies the PDU size to use (not including headers). The valid range is between 2048 and 10112 bytes. The default is equivalent to the maximum segment size (MSS). This is the maximum size if the **-random** option is specified.

-interval *interval*

Specifies the interval at which the statistics display is refreshed, in seconds. The default is 30 seconds.

--pmtu

Generates the ICMP messages to discover the maximum MTU available on a specific network path. It is represented as the maximum number of bytes that can traverse the network path. This option is supported only on Brocade 7840 switch, Brocade 7810 switch, and the Brocade SX6 extension blade. Valid arguments include the following:

-s *src_ip*

Specifies the local IP address to use for sourcing the probe packets. IPv6 addresses are supported.

-d *dst_ip*

Specifies the destination IP address to which to probe the IP router path. IPv6 addresses are supported.

-c *L2 Class-of-Service*

Specifies Class of Service/Priority, as defined by IEEE 802.1p. Values must be in the range between 0 and 7. The default is 0.

-q *DSCP*

Specifies the DSCP marking. Values must be in the range between 0 and 63.

-v

Displays verbose output.

-y

Displays the short output with summary lines at the beginning and end.

--wtool

Generates traffic over a pair of IP addresses to test the link for any network issues. Determines the health of a network link before deploying it for use in a circuit. This option is supported only on Brocade 7840 switch, Brocade 7810 switch, and the Brocade SX6 extension blade.

The syntax for **portcmd --wtool** is as follows:

portcmd --wtool *wt-id* | **all** *action port arguments*

This command supports following actions and arguments:

create

Creates a WAN test session. This command supports following options:

-a | --admin-status enable | disable

Enables or disables the WAN test session.

-s | --src *src_ip*

Specifies the local IP address to use for sourcing the probe packets. IPv6 addresses are supported.

-d | --dst *dst_ip*

Specifies the destination IP address to which to probe the IP router path. IPv6 addresses are supported.

-r | --rate *rate*

Specifies the test rate in kbps.

-t | --time *time*

Specifies the test time in minutes.

i | --ipsec-policy *ip-sec_policy*

Specifies the policy name for an ipsec configuration.

-b | --bi-directional

Specifies the test session is running on bi-directional traffic. By default, the WAN test session is configured for uni-directional traffic.

-u | --uni-directional

Specifies the test session is running on uni-directional traffic.

-C | --connection-type

Specifies the connection type. Valid values are default, listener, and initiator.

--dscp *dscp*

Sets Differentiated Services Code Point (DSCP) markings for the WAN test session.

--l2cos *l2cos*

Sets the Layer 2 Class of Service (L2CoS) value for the WAN test session.

modify

Modifies an established WAN test session. This command supports following options:

-r *rate*

Specifies the test rate in kbps.

-t *time*

Specifies the test time in minutes.

-b

Specifies the test session is running on bi-directional traffic. By default, the WAN test session is configured for uni-directional traffic.

-c

Clears the statistics associated with the WAN test.

show

Displays the WAN test session statistics. This command supports following options:

--summary

Displays statistics for active WAN test sessions.

--connection

Displays statistics for established WAN test sessions.

--detail

> Displays detailed statistics for active WAN test sessions.

--historical

> Displays statistics for past WAN test sessions.

--all-ls

> Displays statistics for all configured WAN test sessions from all logical switches.

--peer

> Displays statistics for the local and peer WAN test sessions.

--sla

> Displays the running SLA-configured sessions.

--reset

> Resets the current user WAN tool session statistics.

start

> Starts the WAN test session associated with the test ID. This command supports following option:

-t

> Specifies the test time in seconds. Use this option if the test time is not configured with **create** or **modify** options.

stop

> Stops the WAN test session associated with the test ID. Use **all** to stop all WAN test sessions.

delete

> Deletes the WAN test session associated with the test ID. Use **all** to delete all WAN test sessions.

--help

> Displays command usage.

Examples

To verify if packets can be sent to the destination IP address with maximum *wait_time* specified:

```
switch:admin> portcmd --ping 12/ge0  \
```

```
        -s 2007:7:30:32:227:138:10:120  \
        -d 2007:7:30:32:227:77:0:60 -w 29000
Pinging 2007:7:30:32:227:77:0:60 from ip interface \
    2007:7:30:32:227:138:10:120 on 12/ge0 with 64

bytes of data
Reply from 2007:7:30:32:227:77:0:60: bytes=64 rtt=0ms ttl=255
Reply from 2007:7:30:32:227:77:0:60: bytes=64 rtt=1ms ttl=255
Reply from 2007:7:30:32:227:77:0:60: bytes=64 rtt=0ms ttl=255
Reply from 2007:7:30:32:227:77:0:60: bytes=64 rtt=0ms ttl=255

Ping Statistics for 2007:7:30:32:227:77:0:60:
        Packets: Sent = 4, Received = 4, Loss = 0 ( 0 percent loss)
        Min  RTT = 0ms, Max RTT = 1ms Average = 0ms
```

To trace the IP router hops used to reach the remote (with packet size specified):

```
switch:admin> portcmd --traceroute 12/ge0  \
      -s 2007:7:30:32:227:138:10:120  \
      -d 2007:7:30:32:227:77:0:60 -z 1452
Traceroute to 2007:7:30:32:227:77:0:60 from IP interface
2007:7:30:32:227:138:10:120 on 12/0, 30

hops max
1  1 ms  0 ms  0 ms
Traceroute complete.
```

To verify if packets can be sent to the destination IP address using VLAN tagging with the **-c** option.

```
switch:admin> portcmd --ping 8/ge0  \
      -s 192.168.10.1 -d 192.168.20.1 -v 10 -c 3
```

To trace the IP router hops used to reach the remote host using VLAN tagging with the **-c** option.

```
switch:admin> portcmd --traceroute 8/ge0  \
      -s 192.168.10.1 -d 192.168.20.1 -v 10
```

To ping a failover crossport:

```
switch:admin> portcmd --ping 8/xge0  \
      192.168.11.20 -d 1.1.1.1 -x
```

To trace the route to a failover crossport:

```
switch:admin> portcmd --traceroute 8/xge0  \
      192.168.11.20 -d 1.1.1.1 -x
```

To set the path characteristic to source mode on the remote host using VLAN tagging with the **-c** option.

```
switch:admin> portcmd --ipperf 8/ge0  \
      -s 192.168.10.1 -d 192.168.20.1 -S -v 10 -c 3
```

To create a TPerf data sink on VE_Port 16:

```
switch:admin> portcmd --tperf 16 -sink

TPerf has been configured successfully for 16
TPerf is servicing requests on 16  priority: high
```

```
TPerf is servicing requests on 16  priority: medium
TPerf is servicing requests on 16  priority: low
Tperf data source can now be started
```

To configure a Brocade FX8-24 blade as a TPerf data source (this example generates round-trip high, medium, and low priority traffic with a fixed PDU size of 2084 bytes. The payload pattern is a jitter pattern and the checksum is checked by the sink):

```
switch:admin> portcmd --tperf 16 -source  \
     -size 2048 -pattern 5

TPerf has been configured successfully for 16
TPerf is generating traffic on 16  priority: medium
*************************************************************
Tunnel ID: 16
                   High Priority Medium Priority Low Priority
bytes tx           0             5280520         0
bytes rx           0             407240          0
PDUs tx            0             10183           0
PDUs rx            0             10182           0
out of seq PDUs rx 0             0               0
flow control count 0             0               0
last rtt           0             5               0
*************************************************************
```

To configure a TPerf source so it generates round-trip high and low priority traffic with a random PDU size from 2048 to 10112 bytes (1 MSS) and with a payload pattern determined by previous settings saved in memory:

```
switch: admin> portcmd --tperf 16 -source -high -low -random
TPerf has been configured successfully for 16
TPerf is generating traffic on 16  priority: high
TPerf is generating traffic on 16  priority: low
*************************************************************
Tunnel ID: 16
                   High Priority Medium Priority Low Priority
bytes tx           19800708      0               19168848
bytes rx           187200        0               183640
PDUs tx            4686          0               4598
PDUs rx            4685          0               4597
out of seq PDUs rx 0             0               0
flow control count 0             0               0
last rtt           5             0               5
*************************************************************
```

To configure a TPerf source to generate one-way low priority traffic with a random PDU size from 2048 to 4000 bytes and a payload pattern of ones.

```
switch:admin> portcmd --tperf 16 -source -low \
     -size 4000 -random -unidirectional -pattern 2

TPerf has been configured successfully for 16
TPerf is generating traffic on 16  priority: low
*************************************************************
Tunnel ID: 16
                   High Priority Medium Priority Low Priority
```

```
bytes tx               0              0              19800708
bytes rx               0              0              0
PDUs tx                0              0              1434686
PDUs rx                0              0              0
out of seq PDUs rx     0              0              0
flow control count     0              0              0
last rtt               N/A            N/A            N/A
*************************************************************
```

To specify test data patterns for the source payload:

```
switch:admin> portcmd --tperf 16 -source -pattern random
switch:admin> portcmd --tperf 16 -source -pattern 4

switch:admin> portcmd --tperf 16 -source -pattern jitter
switch:admin> portcmd --tperf 16 -source -pattern 5
```

To discover the maximum MTU available on a switch:

```
switch:admin> portcmd --pmtu ge3.dp0 -s 192.168.0.30 -d 192.168.0.130
Path MTU detection from 192.168.0.30 to 192.168.0.130
Note: a response can take up to 32 seconds

Path MTU returned:1500
```

To create a WAN test session:

```
switch:admin> portcmd --wtool 0 create -d 76.196.3.76 -s 77.195.3.77 -r
5000000
Operation Succeeded
```

To start a WAN test session:

```
switch:admin> portcmd --wtool 0 start -t 1200
Operation Succeeded
```

To display WAN test session for a specified session:

```
switch:admin> portcmd --wtool 0 show
wantool-id: (0)
========================================
 State               : Established
 Up Time             : 1m6s
 Run Time            : 0s
 Time remaining      : 0s
 IP Addr (L/R)       : 76.196.3.76 - 77.195.3.77
 PMTUD               : Disabled
 Comm Rate           : 5000000 Kbps (610.35 MB/s)
 Tx rate             : 114.06 Kbps (0.01 MB/s)
 Rx rate             : 102.66 Kbps (0.01 MB/s)
 Tx Utilization      : 0.00%
 Rx Utilization      : 0.00%
 RTT (Min/Max)       : 0.10ms/0.28ms
 RTT VAR (Min/Max)   : 0.09ms/0.28ms
 Local Session Statistics
  Tx pkts            : 0
 Peer Session Statistics
```

```
 Rx pkts                 : 0
 Ooo pkts                : 0
 Drop pkts               : 0 (0.00%)
 Drop% (Overall/5s) : 0.00% / 0%
```

To display active WAN test sessions:

```
switch:admin> portcmd --wtool show --d
WTool Session: 24.0 (DP0)
================================================
 Admin / Oper State     : Enabled / Running
 Up Time                : 1m24s
 Run Time               : 1m23s
 Time Out               : 3m50s
 Time Remaining         : 13m37s
 IP Addr (L/R)          : 192.168.3.20 ge3 <-> 192.168.3.10
 IP-Sec Policy          : (none)
 PMTU Discovery (MTU)   : disabled (1500)
 Bi-Directional         : disabled
 L2CoS / DSCP           : (none) / (none)
 Configured Comm Rate   : 5000000 kbps
 Peer Comm Rate         : 5000000 kbps
 Actual Comm Rate       : 5000000 kbps
 Tx rate                : 5000000.00 Kbps  ( 610.00 MB/s)
 Rx rate                : 5000000.00 Kbps ( 610.00 MB/s)
 Tx Utilization         : 100.00%
 Rx Utilization         : 100.00%
 RTT (Min/Max)          : 1 ms/1 ms
 RTT VAR (Min/Max)      : 1 ms/1 ms
 Local Session Statistics
  Tx pkts               : 810024
 Peer Session Statistics
  Rx pkts               : 792029
  Ooo pkts              : 0
  Drop pkts             : 0 (0.00%)
  Drop% (Overall/5s)    : 0.00% / 0%
(output truncated)
```

To display disabled WAN test sessions:

```
switch:admin> portcmd --wtool show --d

 Admin / Oper State     : Disabled / Disabled
 Last Session End       : Thu Feb 23 07:12:31 2017
 Last Session Completion: Pass:Fail(reason):Aborted
 IP Addr (L/R)          : 82.198.4.16 ge4 <-> 83.197.4.16
 IP-Sec Policy          : (none)
 PMTU Discovery (MTU)   : disabled (5500)
 Bi-Directional         : disabled
 L2CoS / DSCP           : (none) / (none)
 SLA (Run Time / Timeout / Loss)
 Configured             : 10m0s / 20m0s / 0.50
 Actual                 : 0s / 0s / 0.00
```

```
                          Configured Comm Rate   : 50000 kbps
                          Peer Comm Rate         : (none)
                          Actual Comm Rate       : (none)
```

To display local and remote WAN test sessions:

```
switch:admin> portcmd --wtool 2 show --peer
WTool Session: 2          (Local)                    (Remote)
========================================================================
====
Admin / Oper State    : Enabled / Online     : Enabled / Online
Up Time               : 6s                   : 6s
Run Time              : 0s                   : 0s
Time Remaining        : 10m0s                : 10m0s
Port                  : ge8.dp0              : -
IP Addr               : 2002:1000:0000:1111  : 2002:1011:1111:1110
IP-Sec Policy         : (none)               : (none)
Configured Comm Rate  : 1000000 kbps         : 1000000 kbps
Actual Comm Rate      : 1000000 kbps         : 1000000 kbps
PMTU Discovery (MTU)  : disabled (9216)      : disabled (9216)
Bi-Directional        : disabled             : disabled
L2CoS / DSCP          : (none) / (none)      : (none) / (none)
Tx rate               : 2992.14 Kbps         : 2992.14 Kbps
Rx rate               : 2976.47 Kbps         : 2976.47 Kbps
Tx Utilization        : 0.30%                : 0.30%
Rx Utilization        : 0.30%                : 0.30%
RTT (Min/Max)         : 1 ms/1 ms            : 1 ms/1 ms
RTT VAR (Min/Max)     : 1 ms/1 ms            : 1 ms/1 ms
Tx pkts               : 0                    : 0
Rx pkts               : 0                    : 0
Ooo pkts              : 0                    : 0
Drop pkts             : 0                    : 0
Drop % (Overall/5s)   : 0.00% / 0.00%        : 0.00% / 0.00%
```

To modify a WAN test session:

```
switch:admin> portcmd --wtool 0 modify --bi
Operation Succeeded
```

To stop a WAN test session:

```
switch:admin> portcmd --wtool 0 stop
Operation Succeeded
```

To reset a WAN test session:

```
switch:admin> portcmd --wtool 1 show --reset
WTool Session: 1 (DP0)
================================================
 Admin / Oper State    : Enabled / Running
 Up Time               : 19m41s
 Run Time              : 13s
 Time Remaining        : 9m47s
 IP Addr (L/R)         : 10.1.9.10 ge9 <-> 10.1.9.20
 IP-Sec Policy         : (none)
 PMTU Discovery (MTU)  : disabled (1500)
```

```
Bi-Directional         : disabled
L2CoS / DSCP           : (none) / (none)
Configured Comm Rate   : 500000 kbps
Peer Comm Rate         : 500000 kbps
Actual Comm Rate       : 500000 kbps
Tx rate                : 499974.82 Kbps (  62.50 MB/s)
Rx rate                : 500099.71 Kbps (  62.51 MB/s)
Tx Utilization         : 99.99%
Rx Utilization         : 100.02%
RTT (Min/Max)          : 1 ms/1 ms
RTT VAR (Min/Max)      : 1 ms/1 ms
Local Session Statistics
Tx pkts                : 526104
Peer Session Statistics
Rx pkts                : 524717
Ooo pkts               : 0
Drop pkts              : 0
Drop% (Overall/5s)     : 0.00% / 0.00%
```

To display the current SLA-configured session:

```
switch:admin> portcmd --wtool show --sla
Session OperSt    TxMBps  RxMBps   Drop%    RunTime    TimeOut
TimeRemaining
-----------------------------------------------------------------------
-----------
24.0    Running    6.22    6.25    0.00     5s         3m55s       1m56s
24.1    Running    6.26    6.25    0.00     5s        19m55s       1m56s
24.2    Running    6.22    6.25    0.00     4s        19m56s       1m57s
24.3    Running    6.20    6.23    0.00     3s        19m57s       1m58s
25.0    Running   12.52   12.45    0.00     3s        19m57s       3m58s
25.1    Running   12.50   12.50    0.00     4s        19m56s       3m57s
25.2    Running   12.47   12.51    0.00     4s        19m56s       3m57s
25.3    Running   12.38   12.43    0.00     3s        19m57s       3m58s
26.0    Running   12.49   12.49    0.00     5s        19m55s       5m56s
26.1    Running   12.54   12.50    0.00     5s        19m55s       5m56s
26.2    Running   12.51   12.49    0.00     4s        19m56s       5m57s
26.3    Running   12.32   12.40    0.00     3s        19m57s       5m58s
27.4    Running   12.50   12.50    0.00     4s        19m56s       7m57s
27.5    Running   12.48   12.49    0.00     4s        19m56s       7m57s
27.6    Running   12.24   12.26    0.00     3s        19m57s       7m58s
27.7    Running    2.98    2.89    0.00     2s        19m58s       7m59s
28.4    Running    5.81    0.21    0.00     2s        19m58s       9m59s
28.5    Running   12.20    6.65    0.00     3s        19m57s       9m58s
28.6    Running   12.47   12.46    0.00     3s        19m57s       9m58s
28.7    Running   12.44   11.26    0.00     3s        19m57s       9m58s
```

See Also

portCfg, portShow

portDebug

Sets debug level and verbose level of port modules.

Synopsis

portdebug *dbg_lvl, vbs_lvl*

Description

Use this command to set the debug level and verbose level of port modules.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

dbg_lvl

Specify the debug level to be set for port modules; valid values are 1 to 5.

vbs_lvl

Specify the verbose level to be set for port modules; valid values are 1 to 5.

Examples

To set debug level and verbose level of port modules:

switch:admin> **portdebug 3 4**

See Also

dbgShow

portDecom

Decommissions and disables an E_Port without frame loss.

Synopsis

portdecom
portdecom [*slot/*]*port*
portdecom --help

Description

Use this command to disable an E_Port without frame loss. The E_Port can either be a single redundant E_Port or an E_Port which is part of a trunk group. The port must be an operational E_Port with at least one other redundant E_Port available to reach all domains that the E_Port can reach. Or the port must be an operational E_Port which is part of a trunk group with at least one other member in the trunk. The last member of the trunk group may also be decommissioned, if there are other available redundant E_Ports.

Upon successful completion of the command all traffic flows on the port will have been moved to other redundant paths and the port will be placed in a persistently disabled state. To bring the port back online use the **portCfgPersistentEnable** command.

Notes

The execution of this command requires that the lossless feature is enabled on both the local switch and the remote switch on the other end of the E_Port. This command will fail for online ports, if the port is not a fully operational E_Port or trunk port, lossless is not enabled on the local or remote switch, or no alternate redundant path is available to route the traffic. A redundant path must be an E_Port connection between the same pair of switches as the E_Port that is being decommissioned. Use the **topologyShow** command to verify that alternate paths are available to reach all domains.

When decommissioning the member of a trunk group, all members must have an equal link cost. If a member does not have an equal cost, the cost of the trunk as a whole may change after decommissioning the port and cause routes to be changed. Refer to the **linkCost** command for more information.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

slot

> For bladed systems only, specifies the slot number of the ports to be disabled, followed by a slash (/).

port

Specifies the E_Port to be decommissioned.

Examples

To decommission a port

```
switch:user> portdecom 2/5
The port has been decommissioned and persistently disabled.
```

See Also

dlsShow, linkCost, portCfgPersistentEnable, topologyShow

portDisable

Disables a port or a range of ports.

Synopsis

```
portdisable [slot/]port1[-port2] [...]
portdisable -i [index1[-index2] [...] [-f]]
portdisable -x [hex1[-hex2] [...]]
portdisable -slot [slot1[-slot2] [...]]
portdisable [slot/]port -r disable_reason_string
portdisable -h
```

Description

Use this command to disable a port or a range of ports. If the port is connected to another switch when disabled, the fabric may reconfigure. Devices connected to this port can no longer communicate with the fabric.

You can identify a single port to be disabled by its port number or by its port index number in decimal or hexadecimal format. Port ranges are supported with port numbers, index numbers(decimal or hexadecimal) or by specifying a slot or a slot range. Use **switchShow** for a listing of valid ports, slots, and port index numbers.

Specifying multiple ports with the index (**-i**) or slot (**-s**) option is supported only if **PortSwap** is disabled. They are not supported on GbE ports and configured F_Port trunks. Use the **-i**option without a port index argument to display the **portSwap** status, or alternately use **portSwapShow**.

The front panel LED of a disabled port flashes amber in a two-second cycle. If the port was online before being disabled, a state transition will be indicated in one of the following ways: RSCN, SNMP trap, or Web pop-up window.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

slot

On bladed systems only, specifies the slot number of the ports to be disabled, followed by a slash (/).

port1[-port2]

Disables a single port or a range of ports identified by port numbers. The port range cannot span slots, but you can specify multiple port ranges pairs separated by a space, for example, 3/1-4 4/7-9.

-i *index1*[*-index2*]

Disables a port or a range of ports identified by port index numbers. You may specify multiple index ranges separated by a space, for example, **-i**33-38 40-60.

-f

Ignores nonexisting ports. This operand is valid only with the **-i** option.

-x [*hex1* [*-hex2*]]

Disables a port or a range of ports identified by port numbers, index number in hexadecimal format. You may specify multiple port ranges separated by a space, for example, -x 21-26 28-3c.

-slot [*slot1*[*-slot2*]]

Disables all ports on a slot or on a range of slots, for example, **-s** 3-5. You may specify multiple slot ranges separated by a space, for example, **-s** 3-5 8-10.

-r *disable_reason_string*

Specifies the reason for disabling the port. The string can be up to 16 characters long and must be enclosed in double quotation marks.

-h

Displays the command usage.

Examples

To disable a single port.

```
switch:admin> portdisable 2/4
```

To disable a range of ports:

```
switch:admin> portdisable 2/4-8
```

To disable multiple port ranges:

```
switch:admin> portdisable 2/24-26 3/10-12 4/3-4
```

To disable a port by specifying its index number:

```
switch:admin> portdisable -i 176
```

To disable a range of ports by specifying the corresponding port index range:

```
switch:admin> portdisable -i 170-176
```

To disable multiple ports by specifying multiple port index ranges:

```
switch:admin> portdisable -i 30-36 170-176
```

To disable range of ports by specifying port index numbers in hexadecimal format:

```
switch:admin> portdisable -x 1d-1e
```

To disable all ports on slots 3-5:

```
switch:admin> portdisable -s 3-5
```

To disable all ports on slots 3-5 and 9-12:

```
switch:admin> portdisable -s 3-5 9-12
```

To disable a port with a disable reason:

```
switch:admin> portdisable 2/2 -r "laser fault"
```

See Also

portCfgPersistentDisable, portCfgPersistentEnable, portEnable, portShow, portSwapDisable, portSwapShow, switchShow

portDPortTest

Initiates or terminates a D_Port test, or displays D_Port test results.

Synopsis

```
portdporttest --start | --setarg [-nframes number | -time time]
      [-framesize size] [-pattern pat_name |
      -payload payload_pattern] [-fec] [-cr] [slot/]port_list
portdporttest --stop [slot/]port_list
portdporttest --restart [slot/]port_list
portdporttest --set [ewrap | owrap] [slot/]port
portdporttest --clear [ewrap | owrap | all] [slot/]port
portdporttest --reset -module [slot/]port_list
portdporttest --show [slot/]port_list | -detail [slot/]port_list | all
portdporttest --exit [slot/]port_list
portdporttest --help
```

Description

Use this command to manually terminate, initiate test, or stop test on a diagnostic port (D_Port). The **portdporttest --show** command displays the result of the D_Port tests. The port must be configured as a D_Port and physically connected to a second D_Port on a remote switch. Refer to the **portCfgDPort** command for more information. The **portdporttest --start** command only needs to be issued on one end of the link.

The D_Port test performs the following diagnostics:

- An electrical loopback test (supported only on 16Gb and 32Gb SFPs capable of electrical loopback)

- An optical loopback test (supported only on 16Gb and 32Gb SFPs capable of optical loopback)

- A link traffic test

- A link distance measurement

Use the **--setarg** option to set the test parameters and exit. Use the **--restart** option to restart the test with the already configured parameters.

Use the **--show** option with a port operand to display the test status for the specified ports at any time during the test or after the diagnostics has completed. The command output includes the following information for each configured D_Port:

Slot

The slot number on the local side of the link.

Port

The port number on the local side of the link

Remote WWNN

The world wide node name of the switch on the remote side of the link.

Remote WWPN

The world wide port name of the Host Bus Adapter (HBA) or device port on the remote side of the link.

Remote port index

The port number on the remote side of the link

Mode

The testing mode: Automatic (initiated due to port online event) or Manual (manually restarted using this command).

No. of test frames

Number of frames sent for link traffic test.

Test frame size

The test frame size in bytes.

Pattern

The predefined pattern name.

Payload

The user-defined payload pattern.

FEC (enabled/option/active)

The forward error correction (FEC) status. This option is not supported for D_Port HBA.

CR (enabled/option/active)

The credit recovery (CR) status. This option is not supported for D_Port HBA.

Start time

Date and time of test start

End time

Date and time of test completion

Status

> On the link initiator, this field displays the overall test status as PASSED, FAILED, SKIPPED, IN PROGRESS, NOT STARTED, or STOPPED. On the link responder, the status displays PASSED, FAILED, STOPPED, or RESPONDER.

Test

> For each sub-test, the command displays the Start time, test result (PASSED, FAILED, IN PROGRESS, NOT STARTED, STOPPED, or RESPONDER), estimated time in seconds, and diagnostic comments. Comments include the following:

No SFP or chip support

> The test result is skipped because the SFP or port is not capable of D_Port functionality.

See remote port results

> The test result related to this comment is RESPONDER. The port is in responder state and test results will be available at the initiator port on the remote side of the link.

Remote port is not ready to start the test

> The test failed because the remote port is not ready to start the D_Port test.

No remote SFP or chip support

> The test is skipped because the D_Port test is run between a QSFP and SFP port connected through break-out cable or when the remote SFP is not capable of running the optical loopback test.

Long distance config mismatch and *Long distance F_Port not supported*

> The test result may PASS or FAIL depending on the long distance configuration on LD/LE links or on invalid long distance configuration.

Roundtrip link latency

> Displays roundtrip link latency in nanoseconds or unknown when the test is in progress. Roundtrip link latency is the time required for the light to travel from a given port to the port at the remote side of the link and back again.

Estimated cable distance

> The estimated physical distance of the interswitch link in meters. The Link distance for SPFs or ICL ports which do not support E_WRAP and O_WRAP have a precision of +/- 50 meters for 8Gb/s LWL SFPs, 8Gb/s ELWL SFPs, 10Gb/s SFPs, ICL ports, and QSPF ports and +/- 5 meters for 16Gb/s and 32Gb/s SFPs/QSFPs.

Buffers required

> The number of buffers required for the given distance and speed. Irrespective of test frame size, the number of buffers required is calculated for 2112-byte frames.

Failure report

> Displays details on the local port and remote port errors, if any, when the D_Port test fails.

Use the **--show all** command to display the following test summary information:

Port

> The port number on the local side of the link

State

> The port state: OFFLINE or ONLINE

SFP Capabilities

> Electrical loopback (E) or optical loopback (O), or both (E, O)

Test Result

> PASSED, FAILED, or STOPPED

Egress power

> The power values and power loss in the transmit path. The following values are displayed: power transmitted from the local side of the link (**Tx**), power received on the remote side of the link (**Rx**), the power loss, that is, the relative difference in power (**Diff**), and the status of the power loss (No Loss, within tolerable limits, and outside tolerable limits).

Ingress power

> The power values and power loss in the receive path. The following values are displayed: power received on the local side of the link (**Rx**), power transmitted from the remote side of the link (**Tx**), the power loss, that is, the relative difference in power (**Diff**), and the status of the power loss (No Loss, within tolerable limits, and outside tolerable limits).

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

This command is supported only on Fibre Channel ports. SFPs must be Brocade-branded and run Fabric OS v7.0.0 or later. This command skips the optical loopback test for loopback plugs or when the port loops back to another D_Port in the same switch.

The port error statistics may show incremented values after D_Port tests are successful and the test status as NOT_STARTED due to port toggle operation at the end of the D_Port test.

The approximate cable distance is calculated and displayed instead of estimated cable distance if the "electrical loopback" and "optical loopback" tests statuses are SKIPPED. The associated value of Approximate/Estimated cable distance will be UNKNOWN if the "electrical loopback" and "optical loopback" tests statuses are "SKIPPED" and the link distance is less than 150 meters.

The D_Port long duration test can be run on only one port at a time.

Operands

This command has the following operands:

slot

On bladed systems only, specifies the slot number of the ports to be configured, followed by a slash (/).

port_list

Specifies one or more ports, relative to the slot on bladed systems. Use **switchShow** for a listing of valid ports. A port list should be enclosed in double quotation marks and can consist of the following:

- A single port, for example, "8" or "5/8" on blades systems.

- A port range where beginning and end port are separated by a dash, for example, "8-13" or "5/8-13" on blades systems. A port range cannot span multiple slots.

- A set of ports separated by commas, for example "3,5,7,8" or "5/3,5,7,8" on bladed systems.

- A wildcard '*' indicates all ports. The wildcard can be represented as '*', or "*".

--start

Initiates the diagnostics on the specified D_Ports.

-nframes *number*

Specifies the number of frames to send in millions. The range for the number of frames is from 1 through 65535 and the default value is 1 for 1 million frames.

-time *time*

Specifies the time duration in HH:MM format for which the frame traffic test will run.

-framesize *size*

Specifies the size of test frames that are generated to run the test. The range for the framesize is 36 to 2112 bytes. The size of the frames can be specified in multiples of 4; otherwise the nearest higher multiple of 4 value will be taken as frame size. Default value is 1024.

-pattern *pat_name*

Specifies the name of the predefined pattern to be used in the payload. Valid patterns are BYTE_NOT, QUAD_NOT, WORD_NOT, BYTE_RAMP, QUAD_RAMP, WORD_RAMP, BYTE_LFSR, RANDOM, CRPAT, CSPAT, CHALF_SQ, CQTR_SQ,RDRAM_PAT, jCRPAT, jCJTPAT, jCSPAT, PRED_RAND, SMI_TEST, CJPAT, QUAD_NOTP, JSPAT,

JTSPAT. Use the **dataTypeShow** command to get the list of frame patterns. The default pattern jCRPAT is used if the pattern is not specified.

-payload *payload_pattern*

Specifies the user defined payload pattern in hexadecimal. Accepts either payload or pattern as option.

-fec

Enables the forward error correction (FEC) during D_Port test. This sub-option is not supported on D_Ports configured with Dense Wavelength Division Multiplexing (DWDM).

-cr

Enables the credit recovery (CR) during D_Port test.

--setarg

Sets the D_Port test parameters and exits. The sub-options of **--setarg** are same as **--start**.

This option is not supported for D_Port HBA connections.

--stop

Terminates the diagnostics on the specified D_Ports. Brocade recommends that you execute this command on both the local port and the remote port to properly terminate the D_Port tests.

--restart

Restarts the D_Port diagnostic tests with the configured parameters.

This option is not supported for D_Port HBA connections.

--show

Displays runtime status and results of the diagnostics.

-detail

Displays the current detailed D_Port test results and statistics. This option provides extra details in case of test failure.

--set

Sets the port status.

--clear

Clears the port status.

--reset -module

Restores CDR on HAA modules.

--exit

Exits the on-demand or Dynamic D_Ports to normal mode. The static D_Ports are retained in D_Port mode.

--help

Displays the command usage.

Examples

To initiate the D_Port test on a single port:

```
switch:admin> portdporttest --start
```

To terminate the D_Port test on a single port:

```
switch:admin> portdporttest --stop
```

To display the D_Port test results for a port while the test is in progress or after the test has completed:

```
switch:admin> portdporttest --show 16
D-Port Information:
===================
Port:                    16
Remote WWNN:             10:00:00:27:f8:f0:21:60
Remote port index:       8
Mode:                    Manual
No. of test frames:      1 Million
Test frame size:         1024 Bytes
Pattern:                 jCRPAT
FEC (enabled/option/active): Yes/No/Yes
CR (enabled/option/active):  Yes/No/No
Start time:              Mon Sep 25 17:15:09 2017
End time:                Mon Sep 25 17:15:27 2017
Status:                  PASSED
========================================================================
==
Test                Start time   Result  EST(HH:MM:SS) Comments
========================================================================
==
Electrical loopback 17:15:11     PASSED  --------      ----------
Optical loopback    17:15:18     PASSED  --------      ----------
Link traffic test   17:15:23     PASSED  --------      ----------
========================================================================
==
Roundtrip link latency:       1061 nano-seconds
Estimated cable distance:     1 meters
```

```
Buffers required:              1 (for 2112 byte frames at 32Gbps speed)
Egress power:                  Tx: -1.0 dBm, Rx: -0.9 dBm, Diff: 0.0 dBm
(No Loss)
Ingress power:                 Rx: -1.3 dBm, Tx: -1.4 dBm, Diff: 0.0 dBm
(No Loss)
```

To display D_Port summary information:

```
switch:admin> portdporttest  --show all
Port   State      SFP Capabilities  Test Result
================================================
24     ONLINE     E,O               PASSED
26     ONLINE     E,O               PASSED
33     OFFLINE    ---               FAILED
```

To display the D_Port test results for a port when the test has failed:

```
switch:admin> portdporttest --show 3/20
D_Port Information:
===================
Slot:                   3
Port:                   20
Remote WWNN:            10:00:00:05:33:7e:69:c4
Remote port index:      28
Mode:                   Manual
No. of test frames:     1 Million
Test frame size:        1024 Bytes
Pattern:                jCRPAT
FEC (enabled/option/active): Yes/No/No
CR (enabled/option/active):  Yes/No/No
Start time:             Tue Aug  8 12:16:12 2017
End time:               Tue Aug  8 12:16:29 2017
Status:                 FAILED
======================================================================
Test                 Start time  Result  EST(HH:MM:SS)  Comments
======================================================================
Electrical loopback 12:16:13    PASSED  --------        ----------
Optical loopback    12:16:18    PASSED  --------        ----------
Link traffic test   12:16:29    FAILED  --------        Remote port is
not ready to start the test
======================================================================
Roundtrip link latency: unknown

Failure report:
Remote port error(s): GENERIC, BAD_EOF, UNREACHABLE, SIGNAL_LOSS

Use "portdporttest --show -detail" for more details
```

To display the detailed D_Port test results for a port when the test has failed:

```
switch:admin> portdporttest --show -detail 1
*******************************
1. Current D-Port test results:
*******************************
Port:                        1
Remote WWNN:                 10:00:00:05:33:7e:97:e9
```

```
Remote port index:           2
Mode:                        Automatic
No. of test frames:          1 Million
Test frame size:             1024 Bytes
Pattern:                     jCRPAT
FEC (enabled/option/active): Yes/No/No
CR (enabled/option/active):  No/No/No
Start time:                  Wed Aug 16 05:57:41 2017
End time:                    Wed Aug 16 05:57:48 2017
Status:                      FAILED
=======================================================================
===========
Test                 Start time Result      EST(HH:MM:SS)   Comments
=======================================================================
===========
Electrical loopback 05:57:42   PASSED       --------        ----------
Optical loopback    --------   FAILED       --------        Remote port
is not ready to start the test
Link traffic test   --------   NOT STARTED --------         ----------
=======================================================================
===========
Roundtrip link latency:   unknown


Failure report:


**************************
2. Current Port statistics:
**************************
portstatsshow 1:
=================
stat_wtx           1000436935  4-byte words transmitted
stat_wrx           1000437023  4-byte words received
stat_ftx           3775241     Frames transmitted
stat_frx           3775241     Frames received
stat_c2_frx        0           Class 2 frames received
stat_c3_frx        3775233     Class 3 frames received
stat_lc_rx         4           Link control frames received
stat_mc_rx         0           Multicast frames received
stat_mc_to         0           Multicast timeouts
stat_mc_tx         0           Multicast frames transmitted
tim_rdy_pri        0           Time R_RDY high priority
tim_txcrd_z        3489        Time TX Credit Zero (2.5Us ticks)
tim_txcrd_z_vc  0- 3:   3489        0            0            0
tim_txcrd_z_vc  4- 7:   0           0            0            0
tim_txcrd_z_vc  8-11:   0           0            0            0
tim_txcrd_z_vc 12-15:   0           0            0            0
er_enc_in          0           Encoding errors inside of frames
er_crc             0           Frames with CRC errors
er_trunc           0           Frames shorter than minimum
er_toolong         0           Frames longer than maximum
er_bad_eof         0           Frames with bad end-of-frame
er_enc_out         0           Encoding error outside of frames
er_bad_os          0           Invalid ordered set
```

```
er_pcs_blk              0               PCS block errors
er_rx_c3_timeout        0               Class 3 receive frames discarded due
to timeout
er_tx_c3_timeout        0               Class 3 transmit frames discarded due
to timeout
er_unroutable           0               Frames that are unroutable
er_unreachable          0               Frames with unreachable destination
er_other_discard        0               Other discards
er_type1_miss           0               frames with FTB type 1 miss
er_type2_miss           0               frames with FTB type 2 miss
er_type6_miss           0               frames with FTB type 6 miss
er_zone_miss            0               frames with hard zoning miss
er_lun_zone_miss        0               frames with LUN zoning miss
er_crc_good_eof         0               Crc error with good eof
er_inv_arb              0               Invalid ARB
er_single_credit_loss0                   Single vcrdy/frame loss on link
er_multi_credit_loss0                   Multiple vcrdy/frame loss on link

porterrshow:
==============
          frames    enc    crc    crc    too    too    bad    enc
disc   link   loss   loss   frjt   fbsy   c3timeout   pcs
       tx     rx      in    err    g_eof  shrt   long   eof    out
c3     fail   sync   sig                       tx     rx     err
  1:   3.7m   3.7m   0      0      0      0      0      0      0      0
0      0      0      0      0      0      0      0


************************************************************
3. Port statistics prior to the port was set to D-Port:
************************************************************
portstatsshow 1
================
stat_wtx             353            4-byte words transmitted
stat_wrx             444            4-byte words received
stat_ftx             8              Frames transmitted
stat_frx             8              Frames received
stat_c2_frx          0              Class 2 frames received
stat_c3_frx          0              Class 3 frames received
stat_lc_rx           4              Link control frames received
stat_mc_rx           0              Multicast frames received
stat_mc_to           0              Multicast timeouts
stat_mc_tx           0              Multicast frames transmitted
tim_rdy_pri          0              Time R_RDY high priority
tim_txcrd_z          1892           Time TX Credit Zero (2.5Us ticks)
tim_txcrd_z_vc  0- 3:   1892         0            0            0
tim_txcrd_z_vc  4- 7:   0            0            0            0
tim_txcrd_z_vc  8-11:   0            0            0            0
tim_txcrd_z_vc 12-15:   0            0            0            0
er_enc_in            0              Encoding errors inside of frames
er_crc               0              Frames with CRC errors
er_trunc             0              Frames shorter than minimum
er_toolong           0              Frames longer than maximum
er_bad_eof           0              Frames with bad end-of-frame
```

```
er_enc_out           0              Encoding error outside of frames
er_bad_os            0              Invalid ordered set
er_pcs_blk           0              PCS block errors
er_rx_c3_timeout     0              Class 3 receive frames discarded due
to timeout
er_tx_c3_timeout     0              Class 3 transmit frames discarded due
to timeout
er_unroutable        0              Frames that are unroutable
er_unreachable       0              Frames with unreachable destination
er_other_discard     0              Other discards
er_type1_miss        0              frames with FTB type 1 miss
er_type2_miss        0              frames with FTB type 2 miss
er_type6_miss        0              frames with FTB type 6 miss
er_zone_miss         0              frames with hard zoning miss
er_lun_zone_miss     0              frames with LUN zoning miss
er_crc_good_eof      0              Crc error with good eof
er_inv_arb           0              Invalid ARB
er_single_credit_loss0              Single vcrdy/frame loss on link
er_multi_credit_loss0               Multiple vcrdy/frame loss on link

porterrshow
===========
          frames    enc    crc    crc    too    too    bad    enc
disc  link  loss   loss   frjt   fbsy  c3timeout   pcs
      tx    rx     in     err   g_eof  shrt   long   eof    out
c3    fail  sync   sig                  tx     rx    err
 1:    4     4      0      0      0      0      0      0      0      0
0      0     0      0      0      0      0      0
 11:   0     0      0      0      0      0      0      0      0      0
0      0     0      0      0      0      0      0
 21:   0     0      0      0      0      0      0      0      0      0
0      0     0      0      0      0      0      0
 31:   0     0      0      0      0      0      0      0      0      0
0      0     0      0      0      0      0      0
 41:   8.6k  8.6k   0      0      0      0      0      0      0      0
1      1     0      0      0      0      0      0
```

See Also

dataTypeShow, fabricLog, portCfg, portCfgDPort, portShow, switchShow

portEnable

Enables a port or a range of ports.

Synopsis

```
portenable [slot/]port1[-port2] [...]
portenable -i [index1[-index2] [...]] [-f]
portenable -x [hex1[-hex2] [...]]
portenable -slot [slot1[-slot2]]
portenable -h
```

Description

Use this command to enable a port or a range of ports. If a port is connected to another switch when this command is issued, the fabric may reconfigure. After the port is enabled, devices connected to the port can again communicate with the fabric. The front panel LED of a port that is enabled and online is green.

You can identify a single port to be enabled by its port number or by its port index number in decimal or hexadecimal format. Port ranges are supported with port numbers, index numbers(decimal or hexadecimal) or by specifying a slot or a slot range. Use **switchShow** for a listing of valid ports, slots, and port index numbers.

Specifying multiple ports with the index (**-i**) or slot (**-s**) option is supported only if **PortSwap** is disabled. They are not supported on GbE ports and configured F_Port trunks. Use the **-i** option without a port index argument to display the **portSwap** status, or alternately use **portSwapShow**.

For ports that come online after being enabled, the following indications might be sent to indicate a state transition: RSCN, SNMP trap, Web pop-up window.

This command fails if the switch is disabled, the port's blade is not fully enabled (faulted, powered off, or disabled), or if the port is persistently disabled.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

slot

> On bladed systems only, specifies the slot number of the ports to be enabled, followed by a slash (/).

port1[-port2]

> Enables a single port or a range of ports identified by port numbers. The port range cannot span slots, but you can specify multiple port ranges separated by a space, for example 3/1-4 4/7-9.

-i *index1*[*-index2*]

Enables a port or a range of ports identified by port index numbers. You may specify multiple index ranges separated by a space, for example, 33-38 40-60.

-f

Ignores nonexisting ports. This operand is valid only with the **-i** option.

-x [*hex1* [*-hex2*]]

Enables a port or a range of ports identified by port numbers, index number in hexadecimal format. You may specify multiple port ranges separated by a space, for example, -x 21-26 28-3c.

-slot [*slot1*[*-slot2*]]

Enables all ports on a slot or on a range of slots, for example, **-s** 3-5. Multiple slot ranges are not supported with this command.

-h

Displays the command usage.

Examples

To enable a single port:

```
switch:admin> portenable 2/4
```

To enable a range of ports:

```
switch:admin> portenable 2/4-8
```

To enable multiple port ranges:

```
switch:admin> portenable 2/24-26 3/10-12 4/3-4
```

To enable a port by specifying its index number:

```
switch:admin> portenable -i 176
portenable: portSwap feature enabled.
```

To enable a range of ports by specifying the corresponding port index range:

```
switch:admin> portenable -i 170-176
portenable: portSwap feature enabled.
```

To enable multiple ports by specifying multiple port index ranges:

```
switch:admin> portenable -i 30-36 170-176
portenable: portSwap feature enabled.
```

To enable a range of ports by specifying port index number in hexadecimal format:

```
switch:admin> portenable -x 1d-1e
```

To enable all ports on slot 3-5.

```
switch:admin> portenable -s 3-5
```

See Also

portCfgPersistentDisable, portCfgPersistentEnable, portDisable, portShow, portSwapDisable, portSwapShow, switchShow

portEncCompShow

Displays encryption and compression port configuration details.

Synopsis

```
portenccompshow
```

Description

Use this command to display a list of ports that can be configured for encryption or compression. The command displays one section per ASIC and the ports configurable for that ASIC. The output includes the following information:

Index

The port index number of the port to be configured. Use the **switchShow** command to identify the corresponding slot and port number.

Encryption configured

Displays "Yes" if encryption is enabled on the port. Displays "No" if encryption is disabled. This parameter is configured with the **portCfgEncrypt** command.

Encryption active

Displays the port's runtime status. "Yes" indicates that the port is online and enabled for encryption. "No" indicates that the port is enabled for encryption but offline, or not enabled for encryption.

Compression configured

Displays "Yes" if compression is enabled on the port. Displays "No" if compression is disabled. This parameter is configured with the **portCfgCompress** command.

Compression active

Displays the port's runtime status. "Yes" indicates that the port is online and enabled for compression. "No" indicates that the port is enabled for compression but offline, or not enabled for compression.

Config Speed

Displays the speed of the port and link speed of the online ports. If the speed is configured as AUTO NEG, the speed of the port is taken as the maximum speed of the port.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To display the port configuration and runtime status of the ports configurable for encryption or compression on a DCX 8510-8:

```
switch:admin> portenccompshow
Encryption      Compression  Config
IndexConfigured  Active Configured Active Speed
----- ------------- ------ ---------- ------ ------
  17    No      No      No      No
  18    No      No      No      No
  19    No      No      No      No
  20    No      No      No      No
  21    No      No      No      No
  22    No      No      No      No
  23    No      No      No      No
 144    Yes     Yes     Yes     No     16G
 145    No      No      No      No
 146    No      No      No      No
 147    No      No      No      No
 148    No      No      No      No
 149    Yes     No      Yes     No     16G
 150    No      No      No      No
 151    No      No      No      No
-----------------------------------------------------
  88    No      No      No      No
  89    No      No      No      No
  90    No      No      No      No
  91    No      No      No      No
  92    No      No      No      No
  93    No      No      No      No
  94    No      No      No      No
  95    No      No      No      No
 208    No      No      No      No
 209    No      No      No      No
 210    No      No      No      No
 211    No      No      No      No
 212    No      No      No      No
```

See Also

None

portErrShow

Displays a port error summary.

Synopsis

```
porterrshow
porterrshow [[slot/]port1[-[slot/]port2]]
porterrshow -i | -index [index1[-index2]]
porterrshow -x [hex1[-hex2]]
porterrshow --help
```

Description

Use this command to display an error summary for a port or a range of ports. Counts are reported on frames transmitted by the port (Tx) or on frames received by the port (Rx). The display contains one output line per port. Numeric values exceeding 999 are displayed in units of thousands (k), millions (m), or giga (g) if indicated.

You can identify a single port to be configured by its port number or by its port index number in decimal or hexadecimal format. Port ranges are supported with port numbers, index numbers (decimal or hexadecimal) or by specifying a slot or a slot range. Use **switchShow** for a listing of valid ports, slots, and port index numbers. When used without operands, this command displays error summary for all ports on the switch.

Specifying multiple ports with the index number (**-i** or **-x**) or slot (**-s**) option is supported only if **PortSwap** is disabled. They are not supported on GbE ports and configured F_Port trunks. Use the **-i**option without a port index argument to display the **portSwap** status, or alternately use **portSwapShow**.

Values for the following parameters are displayed:

frames tx

Number of frames transmitted (Tx).

frames rx

Number of frames received (Rx).

enc in

Number of encoding errors inside frames received (Rx).

crc err

Number of frames with CRC errors received (Rx).

crc g_eof

Number of frames with CRC errors with good EOF received (Rx).

too shrt

Number of frames shorter than minimum received (Rx).

too long

Number of frames longer than maximum received (Rx).

bad eof

Number of frames with bad end-of-frame delimiters received (Rx).

enc out

Number of encoding error outside of frames received (Rx).

disc c3

Number of Class 3 frames discarded (Rx). This counter includes the sum of the following class 3 discard counters reported by the **portStatsShow** command: **er_rx_c3_timeout**, **er_tx_c2_timeout**, **er_c2_dest_unreach**, and **er_other_disc**. Refer to **portStatsShow** help for a description of these counters.

link fail

Number of link failures (LF1 or LF2 states) received (Rx).

loss sync

Number of times synchronization was lost (Rx).

loss sig

Number of times a loss of signal was received (increments whenever an SFP is removed) (Rx).

frjt

Number of transmitted frames rejected with F_RJT (Tx).

fbsy

Number of transmitted frames busied with F_BSY (Tx).

c3-timeout tx

The number of transmit class 3 frames discarded at the transmission port due to timeout (platform- and port-specific).

c3-timeout rx

The number of receive class 3 frames received at this port and discarded at the transmission port due to timeout (platform- and port-specific).

pcs err

> The number of Physical Coding Sublayer (PCS) block errors. This counter records encoding violations on 10Gb/s, 16Gb/s, or 32Gb/s ports.

uncor err

> The number of uncorrectable forward error corrections (FEC).

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

This command is not supported on FCoE ports.

For the Brocade G620, when Encryption is enabled, the reserved ports (44 to 47) will display an error when specified or included as part of a port range.

Operands

This command has the following optional operands:

[*slot/*]*port1*[-[*slot/*]*port2*]

> Displays port error summary for a single port or for a range of ports, relative to the slot number on bladed systems. Port numbers in a range must be separated by a dash (-), for example, 3-5, or 2/0-2/15. Port ranges cannot span slots. Use **switchShow** to display a listing of valid ports. Port operands are optional; if omitted, information for all ports is displayed.

-i | -index [*index1*[-*index2*]]

> Displays port error summary for a single port or for a range of ports identified by port index numbers. You may specify index ranges separated by "-", for example, **-i** 33-47.

-x [*hex1* [-*hex2*]]

> Displays port error summary for a port or a range of ports identified by port index numbers in hexadecimal format. You may specify port ranges separated by "-", for example, -x 21-26.

--help

> Displays the command usage.

Examples

To display error counters for ports on a switch:

```
switch:admin> porterrshow
       frames enc   crc    crc    too    too    bad    enc \
    tx    rx     in     err    g_eof  shrt   long   eof    out
```

```
      =============================================================  \
0:    0       0       0       0       0       0       0       0       0  \
1:    2.5g    73m     0       0       0       0       0       0       1.2k  \
2:    0       0       0       0       0       0       0       0       0  \
3:    0       0       0       0       0       0       0       0       667  \

      disc    link    loss    loss    frjt    fbsy    c3-timeout      pcs     uncor
      c3      fail    sync    sig                             tx      rx      err     err
      =============================================================
      0       0       2       4       0       0       0       0       0       0
      563.2k  0       0       0       1       0       0       415.2k  0       0
      0       0       0       1       0       0       0       0       0       0
      0       21      4       8       0       0       0       0       0       0
(output truncated)
```

See Also

portShow, portStatsShow

portFlagsShow

Displays the port status bitmaps for all ports in a switch.

Synopsis

```
portflagsshow
```

Description

Use this command to display the following status for a port:

SNMP

Displays whether the port is online or offline.

Physical

Displays the port physical status. Valid values are In_Sync, No_Light (8Gb/s-capable ports only), and No_SigDet (quad small form-factor pluggables (QSFPs) installed without cables). Refer to **switchShow** help for more information on these states.

Flags

Displays whether there is an SFP inserted in the port, whether the port is active, and the port type.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To display the port status for all ports in the switch:

```
switch:user> portflagsshow
Port SNMP      Physical    Flags
-------------------------------
   0 Online    In_Sync     PRESENT ACTIVE F_PORT G_PORT \
  U_PORT LOGICAL_ONLINE LOGIN NOELP ACCEPT FLOGI
   1 Online    In_Sync     PRESENT ACTIVE E_PORT G_PORT \
  U_PORT SEGMENTED CBL_LB LOGIN LED
   2 Offline   No_Module   PRESENT U_PORT LED
   3 Offline   No_Light    PRESENT U_PORT LED
   4 Offline   No_Module   PRESENT U_PORT LED
   5 Offline   No_Module   PRESENT U_PORT LED
```

```
     6 Offline   No_Module  PRESENT U_PORT LED
     7 Offline   No_Module  PRESENT U_PORT LED
     8 Offline   No_Module  PRESENT U_PORT LED
     9 Offline   No_Module  PRESENT U_PORT LED
    10 Online    In_Sync    PRESENT ACTIVE F_PORT G_PORT \
    U_PORT LOGICAL_ONLINE LOGIN NOELP ACCEPT FLOGI
    11 Offline   No_Module  PRESENT U_PORT LED
    12 Offline   No_Module  PRESENT U_PORT LED
    13 Offline   No_Module  PRESENT U_PORT LED
    14 Offline   No_Module  PRESENT U_PORT LED
    15 Offline   No_Module  PRESENT U_PORT LED
    16 Online    In_Sync    PRESENT ACTIVE F_PORT G_PORT \
    U_PORT LOGICAL_ONLINE LOGIN NOELP ACCEPT FLOGI
    17 Online    In_Sync    PRESENT ACTIVE F_PORT G_PORT \
    U_PORT LOGICAL_ONLINE LOGIN NOELP ACCEPT FLOGI
    18 Offline   No_Module  PRESENT U_PORT LED
    19 Offline   No_Module  PRESENT U_PORT LED
    20 Offline   No_Module  PRESENT U_PORT LED
    21 Offline   No_Module  PRESENT U_PORT LED
    22 Offline   No_Module  PRESENT U_PORT LED
    (output truncated)
```

To display the port status for QSFPs installed without cables (partial output) :

```
6   16 Offline   No_SigDet  PRESENT U_PORT LED
    6   17 Offline   No_SigDet  PRESENT U_PORT LED
    6   18 Offline   No_SigDet  PRESENT U_PORT LED
    6   19 Offline   No_SigDet  PRESENT U_PORT LED
```

To display the port status for QSFPs installed and connected with cables (partial output) :

```
    6   28 Online    In_Sync    PRESENT ACTIVE E_PORT \
     T_PORT T_MASTER G_PORT U_PORT LOGICAL_ONLINE LOGIN LED
    6   29 Online    In_Sync    PRESENT ACTIVE E_PORT T_PORT \
     T_MASTER G_PORT U_PORT LOGICAL_ONLINE LOGIN LED
    6   30 Online    In_Sync    PRESENT ACTIVE E_PORT \
     T_PORT T_MASTER G_PORT U_PORT
```

See Also

portShow, switchShow

portImpair

Clears the impaired flag of a port and sends a request to the attached switch to clear the impaired flag on both sides of the link.

Synopsis

```
portimpair --clear [slot/]port
portimpair --help
```

Description

Use this command to clear the impaired flag of a port.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

The execution of this command requires that the lossless feature is enabled on both the local switch and the remote switch on the other end of the E_Port.

Operands

This command has the following operands:

--clear

Clears the local port impaired flag and sends a request to the attached switch to clear the impaired flag on the remote port. It clears only the local port if the attempt is unsuccessful.

--help

Displays the command usage.

Examples

To clear impaired flag of a port:

```
switch:admin> portimpair --clear 0
The local port and peer port impaired state has been cleared.
To rejoin a trunk group, the port must be toggled.

switch:admin> portimpair --clear 0
Unable to clear impaired state on the remote port because port is
offline.
Impaired state cleared on the local port only.

switch:admin> portimpair --clear 0
No change to port.
```

See Also

   None

portLedTest

Cycles user port LEDs.

Synopsis

```
portledtest
      [--slot slot_number]
      [-ports itemlist]
      [-uports itemlist]
      [-npass count]
      [-action value]
```

Description

Use this command to exercise the user port LEDs in the current switch. When used without a port specifier, all user ports are tested.

For each port, the command cycles through the ON and OFF state by setting the ATTN LEDs to green for the ON condition and unlighted for the OFF condition. The SPEED LEDs are initially set to black before the test starts. The SPEED LEDs turn green while the test is running.

This diagnostic cannot be run on an operational switch. You must disable the switch using the **chassisDisable** command before you can run this test. After the command completes, the ATTN LEDs flash amber, indicating that the command has finished and exited. Enable the switch using the **chassisEnable** command to set the ATTN LEDs back to black.

The port LED behavior varies depending on the platform.

Notes

You cannot interrupt the test by pressing the return key (<cr>).

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--slot *slot*

> Specifies the slot number on bladed systems. When used without the **port** option, this option exercises all user ports in the specified slot. When used with the **port** option, only the ports specified for the specified slot are tested.

-ports *itemlist*

> Specifies a list of front-end blade ports to test. When a specific port is specified, the blade port reference is used. If you want to test a specific user port, you will need root access to the **bladePortMap** command to map the specified blade port to the desired user port. You can also use the **-uports** option to specify the user ports. Refer to **itemList** for more

information on the *itemlist* parameter. When specifying ports on a chassis, the **-ports** operand must be preceded by the **--slot** operand.

-uports *itemlist*

> Specifies a list of user ports to test. If this operand is omitted, by default the test will run on all valid blade ports in the slot. Refer to **itemList** for more information on the *itemlist* parameter. This option is not supported on Brocade FX8-24 blade.

-npass *count*

> Specify the number of times to perform this test. The default value is 10.

-action *action*

> Specifies the LED color. Valid values include the following:

0

> This is the default action. Cycle all Port LEDs. C3 cycles are faster than C2 cycles.

1

> Turn Port status LED off.

2

> Turn Port status LED amber.

3

> Turn Port status LED green.

4

> Blink Port status LED Green. Supported only on C4 platforms.

5

> Blink Port status LED Amber. Supported only on C4 platforms.

16

> Not supported for C2, C3, and C4 platforms.

17

> Not supported for C2, C3, and C4 platforms. Supported for the C3 core, and the port status LED blinks amber.

Examples

To test port LEDs on user port 1 use the corresponding value in the "BPt" column of the **bladePortMap** command (requires root permission):

```
switch:admin> portledtest --slot 1 -ports 213

Running portledtest ..............
WARNING:
This test should NOT be aborted in the middle. If aborted, current
blade or the switch (in-case of Pizza box) may become unusable.
Reset the blade or the switch to recover.

PASSED.
```

See Also

chassisDisable, chassisEnable, fcipLedTest, itemList, switchDisable, switchEnable

portLogClear

Clears the port log.

Synopsis

portlogclear

Description

Use this command to clear the port log. It is recommended that you clear the port log before triggering an activity so that the log displays only the log events related to that activity.

If the port log is disabled, **portLogClear** enables it. The port log is disabled automatically when certain errors occur to allow the collection of all the information needed to understand the cause of the error. When the port log is disabled, the events already present in the log are preserved, but new events are not collected.

The following errors disable the port log:

- FCPH, EXCHBAD

- FCPH, EXCHFREE

- NBFSM, DUPEPORTSCN

- UCAST, RELICPDB

Refer to the *Brocade Fabric OS Message Reference Manual* for more information on these errors.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To clear the port log:

```
switch:admin> portlogclear
switch:admin> portlogshow
port log is empty
```

See Also

portLogDump, portLogShow

portLogConfigShow

Displays the current port log configuration.

Synopsis

`portlogconfigshow`

Description

Use this command to display the current port log configuration.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To display the current port log configuration:

```
switch:admin> portlogconfigshow
max portlog entries = 16384
```

See Also

portLogResize

portLogDisable

Disables the port log facility.

Synopsis

portlogdisable

Description

Use this command to disable the port log facility.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To display the port log facility:

switch:admin> **portlogdisable**

See Also

portLogEnable

portLogDump

Displays the port log without page breaks.

Synopsis

```
portlogdump [count[, saved]]
```

Description

Use this command to display the port log, listing all entries in the log without page breaks. This command displays the same information as **portLogShow**, but **portLogShow** prompts you to press Enter between each page.

For an explanation of the information displayed by this command, refer to the **portLogShow** command.

If the port log is disabled while this command is executed, a warning message is displayed. Refer to the **portLogClear** command for more information.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

count

Specifies the maximum number of lines to be displayed. Only the most recent count entries are displayed. This operand is optional.

saved

Specify a nonzero value to display the saved port log from the last switch fault. Refer to **upTime** for conditions that cause a fault. The operand count is ignored when displaying the saved log. This operand is optional.

Examples

To display 10lines of the portlog on a Brocade DCX:

```
switch:user> portlogdump 10
time           task        event    port cmd  args
------------------------------------------------
Mon Nov 16 21:52:15 2009
21:52:15.214 FCPH        seq      106  7f0
ed210000,00000000,000073ee,10010082,00008000
21:52:15.214 PORT        Tx3      106 2032 \
    02fffffd,00fffffd,0701ffff,13010000
```

```
21:52:15.216 FCPH        read    106 2032
03fffffd,00fffffd,00000000,00008000,07010000
21:52:15.216 FCPH        seq     106  7f0
ed980000,07010000,00004143,0004001c,00008000
21:52:15.216 FCPH        write   106 2032
00fffffd,00fffffd,00000000,00008000,00000000
21:52:15.216 FCPH        seq     106  7f0
ed210000,00000000,000073ee,10010082,00008000
21:52:15.216 PORT        Tx3     106 2032 \
    02fffffd,00fffffd,06feffff,13010000
21:52:15.218 FCPH        read    106 2032
03fffffd,00fffffd,00000000,00008000,06fe0000
21:52:15.218 FCPH        seq     106  7f0 \
ed980000,06fe0000,00004143,0004001c,00008000
21:52:15.220 FCPH        seq     106  7f0
ed980000,06fc0000,00004143,0004001c,00008000
```

See Also

portLogClear, portLogShow, upTime

portLogDumpPort

Displays the port log of a specified port without page breaks.

Synopsis

> **portlogdumpport** *port_index*

Description

Use this command to display the port log for a single port specified by its port index number. The command displays all entries in the log without any page breaks. This command is identical to **portLogShowPort**, except that **portLogShowPort** prompts you to press Enter to display the next page.

Port logs are circular log files in the switch firmware, which can save up to 65,536 entries depending on the hardware platform. Use **portLogConfigShow** to display the current size of the port log. Once the log has reached its maximum size, new entries displace the oldest ones. Port logs capture switch-to-device, device-to-switch, switch-to-switch, some device-to-device1, and control information

If the port log is disabled while this command is executed, a warning message is displayed. Refer to **portLogClear** command for more information.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operand:

port_index

> Displays the port log for the a single port specified by its port index number. Use **switch-Show** for a listing of valid port index numbers.

Examples

To display the port log dump for a port:

```
switch:user> portlogdumpport 14
time          task        event port  cmd  args
-------------------------------------------------
08:35:27.899  tShell      pstate  14   OL1
08:35:27.899  tReceive    pstate  14   LR2
08:35:27.916  tReceive    pstate  14    AC
08:35:28.416  interrupt   scn     14    1
08:35:28.433  tFabric     ioctl   14   90   \
   101d9910,0
08:35:28.433  tFabric     Tx      14   164  \
```

```
       02fffffd,00fffffd,0005ffff,10000000
08:35:28.433  tReceive    Rx       14    0  \
    c0fffffd,00fffffd,00050006
08:35:28.433  tReceive    Rx       14  164  \
    03fffffd,00fffffd,00050006,02000000
08:35:28.433  tTransmit   Tx       14    0  \
    c0fffffd,00fffffd,00050006
08:35:28.433  tFabric     ioctl    14   91  \
    103646d8,0
08:35:28.466  tFabric     ioctl    14   a7  3c,1
(output truncated)
```

See Also

portLogDump, portLogClear, portLogShow, upTime

portLogEnable

Enables the port log facility.

Synopsis

```
portlogenable
```

Description

Use this command to enable the port log facility.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To enable the port log facility:

```
switch:admin> portlogenable
```

See Also

portLogDisable

portLogEventShow

Displays information about port log events.

Synopsis

```
portlogeventshow
```

Description

Use this command to display information about the ID associated with the various port log events. The Disabled field indicates whether the port log for that event ID is disabled (1) or enabled (0).

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To display information about port log events:

```
switch:admin> portlogeventshow
ID      Event-Name     Disabled
-------------------------------
1       start          0
2       disable        0
3       enable         0
4       ioctl          0
5       Tx             0
6       Tx1            0
7       Tx2            0
8       Tx3            0
9       Rx             0
10      Rx1            0
11      Rx2            0
12      Rx3            0
13      stats          0
14      scn            0
15      pstate         0
16      reject         0
17      busy           0
18      ctin           0
19      ctout          0
20      errlog         0
```

```
21      loopscn         0
22      create          0
23      debug           1
24      nbrfsm          0
25      timer           0
(output truncated)
```

See Also

portLogTypeDisable, portLogTypeEnable

portLoginShow

Displays port login status of devices attached to the specified port and the details of the last logged out device.

Synopsis

portloginshow [*slot/*]*port* [**-history**]

Description

Use this command to display port login status received from devices attached to the specified port. For each login, this command displays the following fields:

Type

Type of login can display one of the following:

fd

FDISC, Discover F_Port Service Parameters or Virtual N_Port login.

fe

FLOGI, Fabric Login to Fabric F_Port.

ff

PLOGI, Port Login to specific N_Ports or well-known addresses like Name Server.

PID

The 24-bit Port ID of the attached device.

WorldWideName

The port's world wide name.

credit

The credit for this login as appropriate. This is BB (buffer-to-buffer) credit for Flogs and EE (end-to-end) credit for PLOGIs.

df_sz

The default frame size for this login.

cos

Class of Services supported. This can be a combination of the following bits:

4

> Class 2 is supported.

8

> Class 3 is supported.

logout time

> Timestamp when the device is logged out from a port.

Further information about each login is displayed after these columns, including the Port ID of the well-known address or N_Port that was the target of the PLOGI, if applicable.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

This command is supported on FCoE ports.

Operands

This command has the following operands:

slot

> For bladed systems only, specify the slot number of the port to be displayed, followed by a slash (/).

port

> Specify the port for which to display login status information, relative to its slot for bladed systems. Use **switchShow** for a list of valid ports.

-history

> Displays the details of the last logged out device on a port for the login types "fe" and "fd". The time stamp displayed under the column "logout time" is in the UTC format.

Examples

To display the logins received by Port 23 (revealing one FLOGI (type fe) and two PLOGIs):

```
switch:admin> portloginshow 23
Type  PID      World Wide Name       credit df_sz cos
==================================================
fe  201700 21:00:00:e0:8b:05:a3:c9  3   2048   8 scr=1
ff  201700 21:00:00:e0:8b:05:a3:c9  0     0    8 d_id=FFFC20
ff  201700 21:00:00:e0:8b:05:a3:c9  0     0    8 d_id=FFFFFC
```

To display the last logged out device on a port:

```
switch:admin> portloginshow 1/0 -history
Type  PID      World Wide Name           logout time
========================================================
fd  550002  30:0c:02:05:1e:61:23:8f     09/17/2014 13:56:01
fd  550001  30:0c:01:05:1e:61:23:8f     09/17/2014 13:56:02
fe  550000  30:0c:00:05:1e:61:23:8f     09/17/2014 13:56:02
fd  550001  30:0c:01:05:1e:61:23:8f     09/18/2014 05:49:37
```

To display FCoE ports:

```
switch:admin> portloginshow 0/1800
Type  PID      World Wide Name         credit df_sz cos
========================================================
  fd  019042 10:00:00:05:1e:8f:fd:10   48   2112  8   scr=0x3
  fd  019041 10:00:00:05:1e:8f:fd:00   48   2112  8   scr=0x3
  fe  019040 10:00:00:05:1e:8f:fd:02   48   2112  8   scr=0x3
  ff  019042 10:00:00:05:1e:8f:fd:10   0     0    8   d_id=FFFFFA
  ff  019042 10:00:00:05:1e:8f:fd:10   0     0    8   d_id=FFFFFC
  ff  019041 10:00:00:05:1e:8f:fd:00   0     0    8   d_id=FFFFFA
  ff  019041 10:00:00:05:1e:8f:fd:00   0     0    8   d_id=FFFFFC
  ff  019040 10:00:00:05:1e:8f:fd:02   0     0    8   d_id=FFFFFA
  ff  019040 10:00:00:05:1e:8f:fd:02   0     0    8   d_id=FFFFFC
```

See Also

fcpProbeShow, portShow

portLogPdisc

Sets or clears the debug_pdisc_flag.

Synopsis

portlogpdisc 0 | 1

Description

Use this command to set or clear the debug_pdisc_flag. This command is part of the environmental monitor. A setting of 1 enables logging of Port Discovery parameters. The PDISC log is disabled by default.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operand:

0 |1

Specify 0 to clear or 1 to set the debug_pdisc_flag. The default is 0.

Examples

To set the debug_pdisc_flag:

```
switch:admin> portlogpdisc 1
PDISC log setting = 1
```

See Also

None

portLogReset

Enables the port log facility.

Synopsis

```
portlogreset
```

Description

Use this command to enable the port log facility.

Notes

Refer to **portLogClear** for events that may disable the port log facility.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To enable the port log:

```
switch:admin> portlogreset
```

See Also

None

portLogResize

Resizes the port log to include a specified number of entries.

Synopsis

portlogresize *num_entries*

Description

Use this command to resize the port log to include a specified number of entries. If the specified number of entries is less than the already configured port log size, there is no change.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operand:

num_entries

Specifies the number of port log entries. The valid range of values is 16,384 to 32,768.

Examples

To resize the portlog:

switch:admin> **portlogresize 17288**

See Also

portLogConfigShow

portLogShow

Displays the port log with page breaks.

Synopsis

portlogshow [*count*[, *saved*]]

Description

Use this command to display the port log with page breaks. This command displays the same information as **portLogDump**, but one page at a time.

The port log is a circular log file in the switch firmware which can save up to 65,536 entries depending on the hardware platform. Use **portLogConfigShow** to display the current port log size. Once the log has reached the maximum size, new entries replace the oldest ones. The port log captures switch-to-device, device-to-switch, switch-to-switch, some device-to-device, and control information.

If the command is executed while the port log is disabled, a warning message is displayed. Refer to the **portLogClear** command for more information.

For each log entry, the following information is displayed:

Time

Displays the event date and time in milliseconds. The clock resolution is 16 milliseconds.

Task

Displays the name of the task that logged the event or "interrupt" if the event was logged in interrupt context, or "unknown" if the task no longer exists.

Event

Displays the task event that generated the log entry. Possible events include the following:

start

A switch start or restart event.

disable

A port is disabled.

enable

A port is enabled.

ioctl

A port I/O control is executed.

Tx

> A frame is transmitted (class is indicated).

Rx

> A frame is received (class is indicated).

scn

> A state change notification is posted.

pstate

> A port changes physical state.

reject

> A received frame is rejected.

busy

> A received frame is busy.

ctin

> A CT based request is received.

ctout

> A CT based response is transmitted.

errlog

> A message is added to the error log.

loopscn

> A loop state change notification is posted.

create

> A task is created.

debug

> Indicates a debug message.

nbrfsm

> Indicates a neighbor state transition.

sn

Indicates a speed negotiation state.

fcin

Indicates an incoming Fibre Channel information unit.

fcout

Indicates an outgoing Fibre Channel information unit.

read

Indicates an information unit header log from a read operation.

write

Indicates an information unit header log from a write operation.

err

Indicates an information unit header log of an FC error frame.

frame

Indicates a Fibre Channel frame payload.

nsRemQ

Indicates an interswitch name server query.

rscn

Indicates a Registered State Change Notification.

xalloc

Allocates an exchange.

xfree

Frees an exchange.

xerr

Indicates an exchange error.

xstate

Indicates an exchange state.

payload

Indicates a frame payload.

Port

Displays the port number that logged the event.

Cmd

Defined by the event. Displays a value defined by the event as follows:

ioctl

I/O control command code.

Tx & Rx

Frame payload size.

scn

New state (see state codes below).

pstate

New physical state (see pstate codes below).

ctin

The CT-subtype:

fc

Simple Name Server.

f8

Alias Server.

ctout

The same as ctin.

errlog

Error level (refer to **errShow**).

loopscn

The current loop state during loop initialization. Possible values areas follows:

OLP

Offline (disconnected or nonparticipating).

LIP

FL_Port entered INITIALIZING or OPEN_INIT state.

LIM

LISM completed, FL_Port became the loop master.

BMP

Loop init completed, FL_Port in MONITORING state.

OLD

Port transitioned to the OLD_PORT state.

TMO

Loop init times out.

Args

Displays additional information about the event as follows:

start

Start type: 0 = enable ports, 100 = disable ports.

disable

State (refer to state codes).

enable

Mode: 0 normal; nonzero loopback.

Tx & Rx

Header words 0,1,4 (R_CTL,D_ID,S_ID,OX_ID,RX_ID) and the first payload word.

reject

FC-PH reject reason.

busy

FC-PH busy reason.

ctin

Argument 0 is divided into two 16-bit fields: [A] A bit map indicating whether subsequent arguments are valid (0001 means argument 1 is valid, 0003 means arguments 1 and 2 are valid). [B] The CT-based service command code.

Argument 1 is the first word of the CT payload, if applicable (as specified in [A]). Argument 2 is the second word of the CT payload, if applicable (as specified in [A]).

ctout

Argument 0 is also divided into two 16-bit fields: [A] a bit map indicating whether subsequent arguments are valid (0001 means argument 1 is valid, 0003 means arguments 1 and 2 are valid). [B] the CT command code indicating whether an accept (8002) or a reject (8001). If [B] is an accept, argument 1 and 2 represents the first and second words of the CT payload, if applicable (as specified in [A]). If [B] is a reject, argument 1 contains the CT reject reason and explanation code.

errlog

Error type (refer to **errShow**).

loopscn

The meaning further depends on each loop state:

OLP

Offline reason code, usually zero.

LIP

Reason code for LIPs initiated by FL_Port, if the code value is 800x (x = [1,0xc], see below), or the lower two bytes of the LIP received, if the code value is other than 800x.

LIM

Usually zero.

BMP

Memory address for the loop bitmap.

OLD

Usually zero.

TMO

Encoded value of the state when loop initialization timed out This value is usually equal to the first word of a loop init frame payload. Other possible values include the following:

2

> LIP (req. INITIALIZING) timeout.

94

> F0F0 ARB(F0) timeout.

40

> CLS timeout.

Codes used in various fields are as follows:

state

> Valid state values include the following:

1

> Online

2

> Offline

3

> Testing

4

> Faulty

5

> E_Port

6

> F_Port

7

> Segmented

pstate

> Valid **pstate** values include the following:

AC

> Active State

LR1

>   Link Reset: LR Transmit State

LR2

>   Link Reset: LR Receive State

LR3

>   Link Reset: LRR Receive State

LF1

>   Link Failure: NOS Transmit State

LF2

>   Link Failure: NOS Receive State

OL1

>   Offline: OLS Transmit State

OL2

>   Offline: OLS Receive State

OL3

>   Offline: Wait for OLS State

LIP reason

>   Valid **LIP reason** codes include the following:

8001

>   Retry loop init.

8002

>   Start loop after gaining sync.

8003

>   Restart loop after port reset.

8004

>   LIP when a loop hangs.

8005

   Restart loop if LIP received when sending out ARB(F0).

8006

   LIP when an OPN returns.

8007

   Restart loop when LIPs received in OLD_PORT AC state.

8008

   Restart loop if loop not empty but E_Port loopback.

8009

   LIP as requested by the LINIT ELS received.

800a

   LIP as requested by the LPC ELS received.

Speed Negotiation States

   Valid states include the following:

INIT

   Start negotiation.

NM

   Negotiate master.

WS

   Wait for signal.

NF

   Negotiation follows.

NC

   Negotiation complete.

Notes

   The execution of this command is subject to Virtual Fabric restrictions that may be in place.
   Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

count

Specifies the maximum number of lines to display. Only the most recent count entries are displayed. This operand is optional.

saved

Specifies a nonzero value to display the saved port log from the last switch fault. Refer to **upTime** for a list of conditions that cause a fault. The count is ignored when the saved log is displayed. This operand is optional.

Examples

To view the port log for a port:

```
switch:user> portlogshow 24
time          task event port cmd  args
------------------------------------------------

17:05:30.384 PORT Rx    0  40   02ffffffd,00ffffffd,08fbffff,14000000
17:05:30.384 PORT Tx    0   0   c0ffffffd,00ffffffd,08fb0e02
17:05:30.384 PORT debug 0         00c0ffee,00fd0118,00000000,00000001
17:05:30.389 PORT Rx    1  40   02ffffffd,00ffffffd,08fdffff,14000000
17:05:30.389 PORT Tx    1   0   c0ffffffd,00ffffffd,08fd0e03
17:05:30.389 PORT debug 1        00c0ffee,00fd013c,00000000,00000001
17:05:30.504 PORT Rx    2  40   02ffffffd,00ffffffd,08feffff,14000000
17:05:30.504 PORT Tx    2   0   c0ffffffd,00ffffffd,08fe0e04
17:05:30.504 PORT debug 2        00c0ffee,00fd0182,00000000,00000001
17:05:30.507 PORT Rx    3  40   02ffffffd,00ffffffd,08ffffff,14000000
17:05:30.507 PORT Tx    3   0   c0ffffffd,00ffffffd,08ff0e05
17:05:30.508 PORT debug 3        00c0ffee,00fd0148,00000000,00000001
17:05:31.081 PORT Tx    0  40   02ffffffd,00ffffffd,0e06ffff,14000000
17:05:31.082 PORT debug 0        00c0ffee,00fd0188,14000000,00000001
17:05:31.084 PORT Rx    0   0   c0ffffffd,00ffffffd,0e060902
17:05:31.772 PORT Tx    1  40   02ffffffd,00ffffffd,0e07ffff,14000000
17:05:31.772 PORT debug 1        00c0ffee,00fd014a,14000000,00000001
17:05:31.774 PORT Rx    1   0   c0ffffffd,00ffffffd,0e070906
17:05:31.775 PORT Tx    2  40   02ffffffd,00ffffffd,0e08ffff,14000000
17:05:31.775 PORT debug 2        00c0ffee,00fd015c,14000000,00000001
17:05:31.777 PORT Rx    2   0   c0ffffffd,00ffffffd,0e080907
17:05:31.778 PORT Tx    3  40   02ffffffd,00ffffffd,0e09ffff,14000000
17:05:31.779 PORT debug 3        00c0ffee,00fd015e,14000000,00000001
17:05:31.782 PORT Rx    3   0   c0ffffffd,00ffffffd,0e090908
```

See Also

portLogClear, portLogDump, upTime

portLogShowPort

Displays the port log of a specified port with page breaks.

Synopsis

portlogshowport *port_index*

Description

Use this command to display the port log of a specified port with page breaks. This command displays the same information as **portLogDumpPort**, except that **portLogDumpPort** does not prompt you to press Enter to display the next page.

If the command is executed while the port log is disabled, a warning message is displayed. Refer to the **portLogClear** command for more information.

Notes

Refer to the **portLogShow** command for a description of the data returned by this command.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

port_index

Displays the port log for a single port specified by its port index number. Use **switchShow** for a listing of valid port index numbers.

Examples

To display the port log for port 14:

```
switch:user> portlogshowport 14
time            task          event port  cmd  args
----------------------------------------------------
08:35:28.483  tFabric       scn      14    0
08:35:27.899  tShell        pstate   14   OL1
08:35:27.899  tReceive      pstate   14   LR2
08:35:27.916  tReceive      pstate   14   AC
08:35:28.416  interrupt     scn      14    1
08:35:28.433  tFabric       ioctl    14   90   101d9910,0
08:35:28.433  tFabric       Tx       14  164  \
    02fffffd,00fffffd,0005ffff,10000000
08:35:28.433  tReceive      Rx       14    0  \
    c0fffffd,00fffffd,00050006
08:35:28.433  tReceive      Rx       14  164  \
    03fffffd,00fffffd,00050006,02000000
```

```
08:35:28.433  tTransmit   Tx       14    0  \
    c0fffffd,00fffffd,00050006
08:35:28.433  tFabric     ioctl    14   91  103646d8,0
08:35:28.433  tFabric     ioctl    14   92  103646d8,0
08:35:28.466  tFabric     ioctl    14   a7  3c,1
08:35:28.466  tFabric     pstate   14   LR1
08:35:28.466  tReceive    pstate   14   LR3
08:35:28.466  tReceive    pstate   14   AC
(output truncated)
```

See Also

portLogClear, portLogDumpPort, portLogShow, upTime

portLogTypeDisable

Disables the port log of a specified type.

Synopsis

portlogtypedisable *id*

Description

Use this command to disable the port log for a specified port log type.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operand:

id

Specifies a nonzero value that corresponds to the port log type to be disabled. Use **port-LogEventShow** for a listing of values corresponding to supported log types.

Examples

To disable logging of type 2 port log events:

```
switch:admin> portlogtypedisable 2
```

See Also

portLogDisable, portLogEventShow, portLogTypeEnable

portLogTypeEnable

Enables the port log of a specified port log type.

Synopsis

portlogtypeenable *id*

Description

Use this command to enable the port log for a specified port log type.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operand:

id

Specifies a nonzero value that corresponds to the port log type to be enabled. Use **portLogEventShow** for a listing of values corresponding to supported log types.

Examples

To enable logging of type 2 port log events:

switch:admin> **portlogtypeenable 2**

See Also

portLogEventShow, portLogTypeDisable

portLoopbackTest

Performs a functional test of port N->N path.

Synopsis

```
portloopbacktest
      [--slot slot]
      [-nframes count]
      [-lb_mode mode]
      [-spd_mode mode]
      [-ports itemlist]
      [-uports itemlist]
      [-enetmode]
```

Description

Use this command to verify the functional operation of the switch by exercising the blade ports of the switch.

This test sends frames from a given port's transmitter and loops them back into the same port's receiver. The loopback is done at the parallel loopback path. The path traversed in this test does not include the media or the fiber cable. Only one frame is transmitted and received at any given time.

The port LED blinking pattern depends on the hardware platform on which the test is run. On 8Gb/s-capable platforms, the LEDs flicker green rapidly while the test is running. Only the ports on which the test is running flicker green. On 16Gb/s-capable platforms, the LEDs on all ports will flash amber, then turn to green, and then return to amber. After the test completes the lights turn to the expected switch disabled pattern. This difference in LED patterns is due to a difference in the ASIC design. Refer to the "Supported hardware and software" section in the *Brocade Fabric OS Command Reference Manual* for a mapping of ASIC types to switch models.

The test performs the following operations:

1) Sets all ports for parallel loopback.

2) Creates a frame F of maximum data size (2,112 bytes).

3) Transmits the frame F through port N.

4) Picks up the frame from the same port N.

5) Checks if any of the following eight statistic error counters report nonzero values:

   ENC_in, CRC_err, TruncFrm, FrmTooLong, BadEOF, Enc_out, BadOrdSet, DiscC3

6) Checks whether the transmit, receive, or class 3 receiver counters are stuck at some value.

7) Checks whether the number of frames transmitted is not equal to the number of frames received.

8)   Repeats Steps two through seven for all ports until one of the following conditions is met:

a)   The number of frames (or pass count) requested is reached.

b)   All ports are marked bad.

At each pass, the frame is created from a different data type of a palette of seven. If seven passes are requested, seven different data types are used in the test. If eight passes are requested, the first seven frames use unique data types, and the eighth is the same as the first. The seven data types are:

```
CSPAT: 0x7e, 0x7e, 0x7e, 0x7e, ...
BYTE_LFSR: 0x69, 0x01, 0x02, 0x05, ...
CHALF_SQ: 0x4a, 0x4a, 0x4a, 0x4a, ...
QUAD_NOT: 0x00, 0xff, 0x00, 0xff, ...
CQTR_SQ: 0x78, 0x78, 0x78, 0x78, ...
CRPAT: 0xbc, 0xbc, 0x23, 0x47, ...
RANDOM: 0x25, 0x7f, 0x6e, 0x9a, ....
```

Notes

Do not abort this test prematurely, using **CTRL-C** or **q** to quit. Doing so may cause the test to report unexpected errors. Errors may vary depending on the hardware platform.

You cannot interrupt the test by pressing the return key (<cr>).

This command does not support High Availability (HA).

The following restrictions apply on the Brocade G620 switch:

- 32Gb/s SFPs supports 32G/16G/8G speeds

- 16Gb/s SFPs supports 16G/8G/4G speeds

- 10Gb/s SFPs supports only 10G speed

- 10Gb/s spd_mode works only with lb_mode 2 with 10Gb/s SFP only and does not work with lb_mode 1

- 16Gb/s and 32Gb/s SFPs do not support 10G speed in lb_mode 1 or 2

The Brocade 8510/DCX series cannot negotiate speeds of 1Gb/s.

This diagnostic cannot be run on an operational switch. You must disable the switch using the **chassisDisable** command before you can run this test. After the test completes, re-enable the switch using the **chassisEnable** command. Do not use the **switchDisable** command followed by manually shutting down the ports before running the test. This will not work because executing **switchEnable** after the test completes will leave the ports in the same state as before. The only way to bring the ports down before running the test and back up after the test completes is by using the **chassisDisable** command followed by the **chassisEnable** command.

The 32Gb/s-capable platforms support only lb_mode 1 and 2.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--slot *slot*

Specifies the number of the slot on which to run the diagnostics. All eligible ports relative to the slot number are tested. The default is 0 and designed to operate on fixed-port-count products.

-nframes *count*

Specifies the number of frames to send. The test progresses until the specified number of frames has been transmitted on each port. The default value is 1. The maximum number of frames sent is limited to 1000 on 16Gb/s-capable platforms and to 2000 on 32Gb/s-capable platforms. If the number of frames exceeds maximum limit, the test proceeds with the initial maximum limit of frames (for example, 1000 on 16Gb/s-capable platforms) and displays a warning message.

-lb_mode *mode*

Specifies the loopback mode for the test. By default, this test uses the internal loopback. Valid values depend on the platform on which the command is executed. Unsupported values are rejected with an appropriate message. To run this test with mode values of 1 and 7, loopback cables must be connected to all front end ports or the test will fail.

1

Port Loopback (loopback plugs)

2

External (SERDES) loopback

5

Internal (parallel) loopback. This parameter is not supported in 16Gb/s-capable plat-forms.

7

Backend bypass & port loopback. This parameter is supported on Brocade FX8-24 blade only.

8

Backend bypass & SERDES loopback. This parameter is supported only on Brocade G630 fixed-port switch.

11

Backend bypass & EXTERNAL loopback. This parameter is not supported on Brocade G630 fixed-port switch.

-spd_mode *mode*

Specifies the speed mode for the test. This parameter controls the speed at which each port is operated. The speed option chosen or defaulted to must not exceed the speed capability of the SFP device or the test results will be unpredictable. For example, if you use an 8Gb/s SFP in a 16Gb/s-supported slot, you must use **spd_mode 8** option to specify 8Gb/s speed. The speed modes 4, 8, 10, 16, and 32 are supported in 32Gb/s-capable platforms.

2

Runs test at 2Gb/s.

4

Runs test at 4Gb/s.

8

Runs test at 8Gb/s (Default for 8Gb/s platforms).

10

Runs test at 10Gb/s (Default for 10Gb/s platforms). This speed mode is not supported on 16Gb/s core blades.

16

Runs test at 16Gb/s (Default for 16Gb/s platforms).

32

Runs test at 32Gb/s (Default for 32Gb/s platforms). This speed mode is not supported in 8Gb/s-capable and 16Gb/s-capable platforms.

-ports *itemlist*

Specifies a list of blade ports to test. By default, all of the blade ports in the specified slot (**--slot**) are used. You must have root access to the **bladePortMap** command if you want to map a specific front-end blade port to a user port. You can also use the **-uports** option to specify the user ports. Refer to **itemList** for more information on the *itemlist* parameter.

-uports *itemlist*

Specifies a list of user ports to test. If this operand is omitted, by default the test will run on all valid blade ports in the slot. Refer to **itemList** for more information on the *itemlist* parameter. This option is not supported on Brocade FX8-24 blade.

-enetmode

Specifies whether the supported front-end ports are to be configured in Ethernet mode when running the test. This mode sends out Ethernet packets for loopback testing on

supported platforms. If this option is not specified, the test will run with the front-end ports configured in the Fibre Channel mode.

Diagnostics

When it detects failures, the test may report one or more of the following error messages. If errors persist, contact Technical Support.

DATA

Data received does not match the data sent.

ERRSTAT

Errors were found in the ASIC statistics.

INIT

Port failed to initialize.

PORTDIED

A previously initialized port went to an uninitialized state.

STATS

Errors were found in the ASIC statistics.

TIMEOUT

Did not receive a frame in the given timeout period.

XMIT

Frame transmission failure.

Examples

To run a functional test in default mode:

```
switch:admin> portloopbacktest

Running portloopbacktest ..............

PASSED.
```

See Also

itemList

portName

Assigns or displays port names.

Synopsis

```
portname
portname [slot/]port [-n name]
portname -i [index1[-index2][...][-f] [-n name]]
portname -x [hex1[-hex2] [...][-f] [-n name]]
portname -slot slot1[-slot2] [...][-n name]
portname -d [format_string | -default | -help]
portname -h
```

Description

Use this command to assign a port name to a specified port or to a range of ports. The port name is included in the **portShow** output; it should not be confused with the world wide port name.

When a port name is not configured, the **portName** command displays a default name in the **portShow** output. The format of the default name is as follows:

- On standalone platforms, the default port name displays as port*portnumber*, for example, "port10."

- On enterprise-class platforms, the default port name displays as slot*slotnumber* port*port-number*, for example, "slot1 port5."

You can identify a single port to be configured by its port number or by its port index number in decimal or hexadecimal format. Port ranges are supported with port numbers, index numbers (decimal or hexadecimal) or by specifying a slot or a slot range. Use **switchShow** for a listing of valid ports, slots, and port index numbers. When issued without the name operand, this command displays the names of the specified ports or of all ports, if no port is specified.

Specifying multiple ports with the index (**-i** or **-x**) or slot (**-s**) option is supported only if **PortSwap** is disabled. They are not supported on GbE ports and configured F_Port trunks. Use the **-i** option without a port index argument to display the **portSwap** status, or alternately use the **portSwapShow** command. When Ficon Management Server (FMS) mode is enabled, specifying a port range will fail. This is because FMS does not permit multiple ports to have the same port name. The first port in the range gets the port name, all other ports in the range will fail. Multiple ports can have the same port name in non-FMS mode.

Like all other configurable port attributes, port names persists across reboots and power cycles. They are not affected by the **configDefault** command, but they are cleared by **portCfgDefault**.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

slot

For bladed systems only, specifies the slot number of the ports to be configured, followed by a slash (/).

port

Assigns a name to a single port identified by its port number.

-i *index1***[***-index2***]**

Assigns a name to a single port or to a range of ports identified by port index numbers, for example, **-i** 1/3-8 -n backup. You may specify multiple index ranges separated by a space, for example, **-i** 35-45 61-68 -n backup.

-x [*hex1* **[***-hex2***]]**

Specifies a port or a range of ports identified by port index numbers in hexadecimal format. You may specify multiple port ranges separated by a space, for example, -x 21-26 28-3c.

-f

Ignores nonexisting ports. This operand is valid only with the **-i** and **-x** options.

-slot [*slot1***[***-slot2***]**

Assigns a name to all ports on a slot or on a range of slots, for example, **-s** 3-5 -n backup. Multiple slot ranges are not supported with this command.

-n *name*

Specifies the name to be assigned to the ports. The port name is a character string up to 128 characters, including spaces and characters and excluding commas (,), semicolons (;), parenthesis (), line feed (\n), carriage return (\r), and the at sign (@). When FICON Server Management mode is enabled, the port name character string can only be up to 24 characters in length. To erase a port name, execute the port name operand as an empty string in double-quotation marks (**-n** ""). This operand is optional; if omitted, the current port name is displayed.

Some characters require a qualifier or double quotation marks when used with a bash shell; for example, enter a single quotation mark as \', enter an exclamation mark as \!, or enter a pipe (|) as "|".

The empty string operand for port name (**-n** "") will not be effective if the default configuration parameter for "Disable Default PortName" is set to **N** or enabled. Use the **configure** command to set this parameter to **Y** or disabled so that **-n** "" can be effective.

-d

Configures or displays the dynamic port name format. When executed without optional parameters, this command displays the configured dynamic port name format.

format_string

Specifies the dynamic port name format. The following control keys and their corresponding port name fields are supported:

- **S** - Switch name
- **T** - Port type
- **I** - Port index
- **C** - Slot number/port number
- **A** - Alias name
- **F** - FDMI hostname
- **R** - Remote switch name

The control keys for port name fields must be separated using periods (.),dashes (-), or underscores (_). Control keys are case-sensitive. The *format_string* must be enclosed in double quotes.

-default

Sets the dynamic port name format to the default format string "S.T.I.A".

-help

Displays the syntax and usage guidelines for the **-d** operand.

-h

Displays the command usage.

Examples

To name a port tape drive 8:

```
switch:admin> portname 1/3 -n "Tape drive 8"
switch:admin> portname 1/3
Tape drive 8
```

To assign a name to a range of ports specified by port index numbers:

```
switch:admin> portname -i 22-26 -n backup
switch:admin> portname -i 22-26
port  22: backup
port  23: backup
port  24: backup
port  25: backup
```

```
port  26: backup
```

To assign a name to all ports on slot 1 and 2:

```
switch:admin> portname -s 1-2 -n backup
switch:admin> portname -s 1-2
port 416: backup
port 417: backup
port 418: backup
port 419: backup
port 420: backup
port 421: backup
(output truncated)
```

To configure dynamic port name format:

```
switch:admin> portname -d "S.T.I.R.A"
```

To display the configured dynamic port name format:

```
switch:admin> portname -d
S.T.I.R.A
```

See Also

configDefault, configure, portCfgDefault, portShow, portSwapDisable, portSwapShow, switchShow

portPeerBeacon

Sets the port peer beaconing to physically identify the interconnections between ports.

Synopsis

```
portpeerbeacon --enable [slot/]port
portpeerbeacon --disable [slot/]port
portpeerbeacon --show -all
portpeerbeacon --help
```

Description

Use this command to turn on or off the port peer beaconing to physically identify the interconnections between ports.

Using this command, the administrator can turn on the beaconing on both ends of the link and physically search the other switches or devices for the beacon pattern to find the peer port. The beaconing pattern is alternating green and amber LEDs every 1.2 seconds.

In the case of the trunk ports, the entire trunk group will be beaconed. This command is supported for more than one port or one trunk group. Newly added trunk ports are automatically included to beacon. Similarly, disabling the **portpeerbeacon** on a trunk port disables beaconing on the entire trunk group.

Port peer beaconing is supported on N_Ports, E_Ports, EX_Ports, F_Ports, AE_Ports, and trunk ports. The command is not supported on ICL ports.

Port peer beaconing is not supported if diagnostic tests are running on the port. Port peer beaconing is not supported with **spinFab** and is mutually exclusive of all the diagnostic commands.

Port peer beaconing remain unaffected when a port or trunk group is disconnected, toggled, or disabled.

The **portPeerBeacon** command is one of the commands that controls beaconing. Each command has a clearly defined scope of action:

- The **portBeacon** command enables or disables beaconing on a specified port.

- The **switchBeacon** command enables or disables beaconing on all ports in the current logical switch.

- The **chassisBeacon** command enables or disables beaconing on all ports in the chassis.

- The **portPeerBeacon** command enables or disables beaconing to identify the interconnections between ports.

The actions of the beaconing commands are independent and mutually exclusive except that the **portPeerBeacon** command overrides the **portBeacon** settings on a port, but **portBeacon** does not override port peer beaconing on a port. For example, if you enabled beaconing on the logical switch and you want to enable beaconing on the entire chassis, you must first disable switch beaconing with the **switchBeacon** command before you can use the **chassisBeacon** command to enable beaconing on the entire chassis. Likewise, existing **portBeacon** settings remain unaffected if you enable or disable beaconing on the switch or on the chassis. Failure

to disable existing beaconing commands before using a different type of beaconing may cause the commands to interfere with each other in unexpected ways.

To determine whether or not beaconing is enabled or disabled on the switch or chassis, use the **switchBeacon** or **chassisBeacon** command without operands. A value of 0 indicates that the command is disabled, a value of 1 indicates that the command is enabled. Issue the **portBeacon --show -all**command to display beaconing status. The **switchShow** command displays the status of the **switchBeacon** command only.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

slot

Specifies the slot number on which the port peer beaconing is available.

port

Specifies the number of the port to be configured, relative to its slot for bladed systems. Use **switchShow** for a list of valid ports.

--enable

Enables the port peer beaconing on a particular port.

--disable

Disables the port peer beaconing on a particular port even when the port is disabled or offline.

--show -all

Displays the ports on which the Port Peer Beaconing is active. It helps to find the ports that receive the ELS and start beaconing. The administrator can verify the connectivity from the Telnet instead of physically verifying the connection.

--help

Displays the command usage.

Examples

To enable the port peer beacon on a port:

```
switch:admin> portpeerbeacon --enable 2/15
```

To disable the port peer beacon on a port:

```
switch:admin> portpeerbeacon --disable 15
```

To display the status of the port peer beacon on a chassis:

```
switch:admin> portpeerbeacon --show -all
PortPeerBeacon enabled port(s):
FID 128:
3/27, 3/28, 3/30, 3/31,
FID 10:
3/16, 3/17,
FID 20:
3/24, 3/25
```

To display the trunk port port peer beacon information (in this example, 2/4, 2/8, and 3/4 are the master ports of their trunking group, and the other ports are the slave ports in their trunking group):

```
switch:admin> portpeerbeacon --show -all
PortPeerBeacon enabled port(s):
FID 128:
Trunk-2/4, 2/5, 2/7, 2/0, 2/1, 2/3, 2/2, 2/6,Trunk-2/8, 2/9, 2/10, 2/
11,
FID 10:
Trunk-3/4, 3/5, 3/6, 3/7,
```

See Also

chassisBeacon, portBeacon, switchBeacon

portPerfShow

Displays port throughput performance.

Synopsis

```
portperfshow
portperfshow [[slot/]port1[-[slot/]port2]]
      [-tx -rx | -tx | -rx] [-t interval]]
portperfshow -x hex1[-hex2]
portperfshow --help
```

Description

Use this command to display throughput information for all ports on a switch or chassis or to display the information for a specified port or port range. You can display throughput information about a single port identified by its port number or by its port index number in decimal or hexadecimal format. Port ranges are supported with port numbers, index numbers(decimal or hexadecimal) or by specifying a slot or a slot range. Output includes the number of bytes received and transmitted per interval. Throughput values are displayed as either bytes, kilobytes (k), megabytes (m), or gigabytes (g). Values are rounded down.

The data is displayed one column per port plus one column that displays the total for these ports. Results display every second or over a specified interval. Press **Enter**, **Ctrl-c**, or **Ctrl-d** to terminate the command. To run this command one time only, specify an interval of zero.

When executed with the command line arguments **-tx**, **-rx**, or **-tx -rx**, this command displays the transmitter throughput, the receiver throughput, or both. For ports with status of "No_Module," "No_Light," "No_SigDet," or "Loopback" throughput is displayed as 0.

An asterisk (*) in the output indicates a SIM port that is generating or receiving traffic.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

When FastWrite or Tape Pipelining is enabled, the **portPerfShow** VE link output is different. The acceleration entity (FastWrite or Tape Pipelining) responds by sending XFER_RDY and status well ahead of the actual device's response to the host. The host sends data which is stored near the device and is delivered to the device only when the device is ready. Consequently, the data may be stored near the target for some brief period of time. In this case, the **portPerfShow**output on the VE link may not match the output on the device port.

Operands

This command has the following optional operands:

[*slot/*]*port1*[-[*slot/*]*port2*]

Displays throughput information for a single port or for a range of ports, relative to the slot number on bladed systems. Port numbers in a range must be separated by a dash (-), for example, 3-5, or 2/0-2/15. Port ranges cannot span slots. Use **switchShow** to display

a listing of valid ports. Port operands are optional; if omitted, information for all ports is
displayed.

-t *time_interval*

Specifies the interval, in seconds, between each sample. The default interval is one
second. If no interval is specified, the default is used. To run this command one time only,
specify an interval of zero.

-tx

Displays the transmitter throughput.

-rx

Displays the receiver throughput.

-tx -rx

Displays the transmitter and receiver throughput.

-x *hex1* [*-hex2*]

Accepts an index number or a range of index numbers within the same slot in hexadec-
imal format as input and displays the output in slot and port number format for chassis
and index number format on switches.

Examples

To display performance information for all ports at a one second (default) interval:

```
switch:user> portperfshow
    0     1     2     3     4     5     6     7     8     9          10   11    12    13    14    15
===========================================================================
630.4m  0     0     0     0     0     0     0     0     0   630.4m  0     0     0     0     0

16    17        18        19    20    21    22    23    24    25    26    27    28    29    30    31
===========================================================================
0   210.1m  840.5m  210.1m  0     0     0     0     0     0     0     0     0     0     0     0

32    33    34    35    36    37    38    39    Total
=================================================
0     0     0     0     0     0     0     0     2.5g

    0     1     2     3     4     5     6     7     8     9          10    11    12    13    14    15
===========================================================================
630.4m  0     0     0     0     0     0     0     0     0  630.4m     0     0     0     0     0

16    17        18        19        20    21    22    23    24    25    26    27    28    29    30    31
===========================================================================
0   210.1m  840.6m  210.1m    0     0     0     0     0     0     0     0     0     0     0     0

32    33    34    35    36    37    38    39    Total
```

```
===============================================
0     0     0     0     0     0     0     0     2.5g
(output stopped)
```

To display port performance for all ports with an interval of 5 seconds:

```
switch:user> portperfshow -t 5

  0       1     2     3     4     5     6     7     8     9     10    11    12    13    14    15
===============================================================================
 630.4m   0     0     0     0     0     0     0     0     112  630.4m 0     0     0     0     0

16   17    18      19      20   21   22   23   24   25   26   27   28   29   30   31
===============================================================================
0 210.1m 840.6m 210.1m 0   112    0    0    0    0    0    0    0    0    0    0

32   33    34    35    36    37    38    39    Total
===============================================
0    0     0     0     0     0     0     0     2.5g

  0       1     2     3     4     5     6     7     8     9      10    11    12    13    14    15
===============================================================================
630.4m   0     0     0     0     0     0     0     0     0    630.4m  0     0     0     0     0

16   17    18      19      20   21   22   23   24   25    26   27   28   29   30   31
===============================================================================
0 210.1m 840.5m 210.1m 0    0    0    0    0    0     0    0    0    0    0    0

32   33    34    35    36    37    38    39   Total
===============================================
 0    0     0     0     0     0     0     0    2.5g
(output truncated)
```

To display performance on a single port with at a 5 second interval:

```
switch:user> portperfshow 0 -t 5
  0       Total
=================
 630.4m 630.4m

  0       Total
=================
 630.3m 630.3m
(output truncated)
```

To display transmitter throughput for a single port at a 5 second interval:

```
switch:user> portperfshow 0 -tx -t 5
   0
========
 210.1m
   0
========
 210.1m
(output truncated)
```

To display receiver throughput for a single port at a 5 second interval:

```
switch:user> portperfshow 0 -rx -t 5
   0
========
 420.3m
   0
========
 420.2m
(output truncated)
```

To display port performance on a chassis for range of ports ('*' indicates a SIM port):

```
switch:user>  portperfshow 0-2
  0     1     2      Total
==========================
  *     0     *       0
```

To display port performance on a chassis for range of ports at an interval of 5 seconds:

```
switch:user>  portperfshow 12/0-12/6 -t 5
           0       1       2       3       4       5       6      Total
=======================================================================
slot 12: 840.6m  0       0       0       0       0     630.4m    1.4g
   0      1       2       3       4       5       6      Total
=======================================================================
slot 12: 840.6m  0       0       0       0       0     630.4m    1.4g
   0      1       2       3       4       5       6      Total
=======================================================================
slot 12: 840.6m  0       0       0       0       0     630.4m    1.4g
(output truncated)
```

To display performance information for a range of ports:

```
switch:user>  portperfshow -x a-b
          10      11     Total
==============================
           0       0       0
```

See Also

portStatsShow

portRouteShow

Displays routing tables for the specified port.

Synopsis

```
portrouteshow [slot/]port
```

Description

Use this command to display the port address ID for a specified port and the contents of the following port routing tables:

External unicast routing table

Displays how the specified port forwards unicast frames to remote domains in the following format: *domain_number*: *ports_bitmap*

domain_number

The remote domain ID to which frames are ultimately routed.

ports_bitmap

The port number on the ASIC pair to which frames for the domain ID forward in bitmap hex format; for example, 0x0100 indicates port 8 on the ASIC pair. The arrangement of ports on an ASIC pair is specific to the system type. For any active port, this table contains at least one entry, which routes unicast frames destined to the embedded port (value 0x10000) of the local domain.

Internal unicast routing table

Displays how the specified port forwards unicast frames to a locally attached NX_Port in the following format: *area_number*: *ports_bitmap*

area_number

The area number of a device (or set of looped devices) attached to the local switch.

ports_bitmap

The format of *ports_bitmap* is the same as the one used in the external unicast routing table.

Broadcast routing table

Displays how the specified port forwards broadcast frames. There is one bit map entry in this table, similar to the bit maps in the other tables; however, this table typically has only Bit 16 set (value 0x10000), indicating this port always routes broadcast frames to the embedded port, for handling by the firmware.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

slot

For bladed systems only, specifies the slot number of the port to display, followed by a slash (/).

port

Specifies the number of the port to display, relative to its slot for bladed systems.

Examples

To display the routing tables for a port:

```
switch:user> portrouteshow 4/15
port address ID: 0x02bf00
external unicast routing table:
   1: 0x4 (vc=3)
   2: 0x10000 (vc=0)

internal unicast routing table:
  60: 0x8000 (vc=2)
  63: 0x1000 (vc=5)
broadcast routing table:
  0x10000
```

See Also

bcastShow, fabricShow, switchShow, topologyShow, uRouteShow

portShow

Displays status and configuration parameters for ports and GbE ports.

Synopsis

```
portshow [slot/][ge]port
portshow [slot/]port -link [-force]
portshow -i [ index1 [-index2] [...]] [-f]
portshow -pid pid
portshow -x [hex1[-hex2] [...]]
portshow option [slot/]ge_port [optional_args] [--filter filter_args]
portshow option [all | ve_port] arguments
     [optional_arguments] [--filter filter_args]
portshow option [all  |ge_port] arguments
     [optional_arguments] [--filter filter_args]
```

Description

Use this command to display general port status and specific configuration parameters for a specified port, GbE port, or VE_Port.

If this command is executed for a specified port with no additional options, it displays general status and configuration for that port. If executed with optional arguments for a Gigabit Ethernet (GbE) port or VE_Port, the command displays extension-related port configuration parameters specific to the Brocade 7840 and Brocade 7810 switches as well as the Brocade FX8-24 and the Brocade SX6 extension blades.

The behavior of this command is platform-specific. Some command options are not available on all platforms. Use the following section headings to navigate this page.

- Display general port status information on all platforms

- Display IP Interface configurations on the Brocade 7840, Brocade 7810, SX6, or FX8-24 platforms:
  - **portshow ipif** - Displays the local IP interfaces.

  - **portshow arp** - Displays the content of the address resolution protocol (ARP) table.

  - **portshow iproute** - Displays static routes on the IP interface.

  - **portshow vlantag** - Displays the IP interface VLAN configuration. Supported on the Brocade FX8-24 only.

  - **portshow autoneg** - Displays autonegotiation status. Not supported on Brocade 7840, 7810, and SX6.

  - **portshow ipsec-policy** - Displays the IPSEC Policy information. Supported on Brocade 7840 switch, Brocade 7810 switch, and the Brocade SX6 extension blade only.

  - **portshow mgmtif** - Displays the inband management interfaces. Supported on the Brocade FX8-24 only.

  - **portshow mgmtroute** - Displays the routes for the inband management interfaces. Supported on the Brocade FX8-24 only.

- – **portshow tcl** - Displays the Traffic Control List (TCL) information. Supported on the Brocade 7840 switch, the Brocade 7810 switch, and the Brocade SX6 extension blade only.

- – **portshow lan-stats** - Displays the LAN statistics. Supported on the Brocade 7840 switch, the Brocade 7810 switch, and the Brocade SX6 extension blade only.

- – **portshow sla** - Displays the Service Level Agreement (SLA) statistics. Supported on the Brocade 7840 switch, the Brocade 7810 switch, and the Brocade SX6 extension blade only.

- – **portshow filter-set** - Displays the details of the configured filter-sets. Supported on the Brocade 7840 switch, the Brocade 7810 switch, and the Brocade SX6 extension blade only.

- – **portshow app-type** - Displays the details of the configured application types. Supported on the Brocade 7840 switch, the Brocade 7810 switch, and the Brocade SX6 extension blade only.

- • Display extension tunnels, circuits, management interfaces and FICON statistics on the Brocade 7840, Brocade 7810, SX6, or FX8-24 platforms:
  - – **portshow fciptunnel** - Displays extension tunnels.

  - – **portshow fcipcircuit** - Displays extension circuits.

  - – **portShow xtun** - Displays FICON and FCP emulation statistics and current runtime conditions.

To display the command usage on the switch, use **portShow** [*action*].

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Some of the features supported by this command may require a license.

Function

General port status display commands supported on all platforms

Synopsis

portshow [*slot/*][**ge**]*port*
portshow -i [*index1*[*-index2*] [...]] [**-f**]
portshow -x [*hex1*[*-hex2*] [...]]
portshow -pid *pid*

Description

Use this command to display general port status and configuration parameters for the specified port. This command is valid on all platforms, but the output is platform-specific and not all fields are displayed on all platforms.

The following general information is displayed when the command is issued for a non-GbE port without additional arguments:

portIndex

Index number assigned to the port.

portName

Name assigned to the port by the **portName** command. On standalone platforms, the default port name is the port number, for example, "port5". On enterprise-class platforms, the default port name is a combination of the slot number and the port number, for example, "slot1 port5".

portHealth

Current health of the port (requires a Fabric Vision license).

Authentication

Authentication type and associated parameters (if applicable) used on the port at port online.

None

No authentication was performed.

FCAP

FCAP authentication was performed.

DHCHAP

DHCHAP authentication was performed. Also displays DH group and hash type used for authentication.

portDisableReason

Provides an explanation for the port's disabled status.

portCFlags

Port control flags.

portFlags

A bit map of port status flags, including information on the type of port, whether it is fully online, and whether logins have been accepted. The port flags display ENCRYPT if the port has been enabled for encryption. The port flags display COMPRESS if the port has been enabled for compression. The port flags display D_PORT if the port has been enabled as a diagnostic port. The port flags display FLOGI_LOGO if the base device logs out and at least one NPIV is online.

portType

The port's type and revision numbers.

POD Port

Ports on Demand License status.

portState

The port's SNMP state:

Online

Up and running.

Offline

Not online, see **portPhys** for more detail.

Testing

Running diagnostics.

Faulty

Failed diagnostics.

Persistently Disabled

Persistently disabled.

Protocol

Protocol used by the port: FC, FCoE, or Ethernet.

portPhys

The port's physical state:

No_Card

No interface card present.

No_Module

No module (GBIC or other) present.

No_Light

Module is not receiving light (valid for 8, 10, 16, and 32 Gb/s FC ports only).

No_SigDet

> No signal detected; displays when a quad small form-factor pluggables (QSFPs) is installed without cables).

Mod_Inv

> Incompatible vendor or module speed mismatch.

No_Sync

> Receiving light but out of sync.

In_Sync

> Receiving light and in sync.

Laser_Flt

> Module is signaling a laser fault.

Port_Flt

> Port marked faulty.

Lock_Ref

> Locking to the reference signal.

portScn

> The port's last State Change Notification.

port generation number

> The port's generation number for the last offline state change.

portId

> The port's 24-bit port ID.

portIfId

> The user port's interface ID.

portWwn

> The port's world wide name.

portWwn of devices(s) connected

> The World Wide Port Names of connected devices. If the base device logs out and one or more NPIVs are online, the PWWN of the NPIVs online are displayed.

Distance

The port's long-distance level. In the case of LD mode, the user configured distance and actual distance also are displayed.

portSpeed

The port's fixed speed (1, 2, 4, or 8Gb/s) or negotiated speed (N1 Gb/s, N2 Gb/s, N4 Gb/s, N8 Gb/s or AN).

FEC

Forward error correction (FEC) status: displays "active" if FEC is enabled on the port and the port is online; displays "inactive" if the feature is disabled. Refer to the **portCfgFec** command for more information.

LE domain

The LE domain ID.

AoQ (Application-oriented QoS)

Indicates that an F_Port or N_Port has negotiated a link that is capable of quality of service (QoS). Both sides of the link have QoS capability and agreed on the protocol. The link could be between an HBA and an Access Gateway, between an Access Gateway and an edge switch, or between an HBA and an edge switch.

Faa (Fabric-Assigned PWWN)

Simplifies server deployment in a Fibre Channel SAN (FC SAN) environment by using a virtual port World Wide Name (PWWN) instead of a physical PWWN to configure zoning and LUN mapping and masking.

FC FastWrite

The status of FC FastWrite (ON or OFF) (Deprecated).

If the port is configured as an EX_Port, the following additional port information is displayed:

EX_Port Mode

The port is configured as an EX_Port.

Fabric ID

The fabric ID assigned to this EX_Port; this is the fabric ID of the edge fabric attached to this EX_Port.

Front Phantom

Information on the front phantom domain presented by this EX_Port. Includes the preferred (if not active) or actual (if active) domain ID for the front domain and the WWN of the front domain.

Pr Switch Info

Information on the principal switch of the edge fabric attached to this EX_Port. Includes the domain ID and WWN of the principal switch.

BB XLate

Information on the xlate (translate) phantom domain presented at this port. Includes the preferred (if not active) or actual (if active) domain ID for the xlate phantom domain and the WWN of the xlate phantom domain. The xlate phantom domain connected at this port is in the same fabric as the router and represents the edge fabric connected to the EX_Port.

Authentication Type

Displays NONE or DH-CHAP. DH-CHAP is the only authentication type supported on EX_Ports.

DH Group

Displays DH group [0-4] if DH-CHAP authentication is used. Otherwise displays N/A.

Hash Algorithm

Displays hash type (MD5 or SHA-1) if DH-CHAP authentication is used. Otherwise, displays N/A.

Edge fabric's primary WWN

If the EX_Port is connected to an edge switch with FCS policy enforcement, the WWN of the primary FCS is displayed when the edge fabric is secure and the primary FCS is online. Otherwise, displays "No Primary".

Edge fabric's version stamp

If the EX_PORT is connected to an edge switch with FCS policy enforcement, the version of the security database is displayed. Otherwise displays N/A.

The **portShow** command displays FCoE ports with "Protocol: FCoE". Only a subset of information is displayed. Refer to the Examples section for an illustration.

Following the general information, the command displays three columns of counters. The first column shows interrupt statistics:

Interrupts

Total number of interrupts.

Unknown

Interrupts that are not counted elsewhere.

Lli

Low-level interface (physical state, primitive sequences).

Proc_rqrd

Frames delivered for embedded N_Port processing.

Timed_out

Frames that have timed out.

Tx_unavail

Frames returned from an unavailable transmitter.

Delim_err

Number of invalid frame delimiters received.

Lr_in

Link reset on the remote switch.

Lr_out

Link reset on the local switch.

Link_failure

Number of link failures.

Loss_of_sync

Number of instances of synchronization loss detected.

Loss_of_sig

Number of instances of signal loss detected.

Protocol_err

Number of primitive sequence protocol errors detected.

Invalid_word

Number of invalid transmission words received.

Invalid_crc

Number of frames received with invalid CRC.

Address_err

Number of frames received with unknown addressing.

Ols_in

Number of Offline Primitive OLS received.

Ols_out

Number of Offline Primitive OLS transmitted.

Frjt

Number of transmitted frames rejected with F_RJT.

Fbsy

Number of transmitted frames busied with F_BSY.

FEC Corrected Blocks

FEC corrected block errors.

FEC Uncorrected Blocks

FEC uncorrected block errors.

The second column displays link error status block counters.

The third column shows the number of F_RJTs and F_BSYs generated. For L_Ports, the third column also displays the number of loop initialization protocols (LIPs) received, number of LIPs transmitted, and the last LIP received.

Operands

This command has the following port operands:

slot

For chassis-based systems only, specifies the slot number of the port to be displayed, followed by a slash (/).

port

Specifies the number of the port to be displayed, relative to its slot for chassis-based systems. Use **switchShow** for a listing of valid port numbers.

-link [-force]

Displays the diagnostic information from cached data for a local switch port and the peer port. The **-force** option displays the real-time diagnostic information from the registers for a port.

-i *index1***[-***index2***]**

> Specifies a port or a range of ports identified by port index numbers. You can specify multiple index ranges separated by a space, for example, 33-38 40-60. Port indexes are supported only if **PortSwap** is disabled. They are not supported on GbE ports and configured F_Port trunks. Use the **-i** option without a port index argument to display the **portSwap** status, or alternately use **portSwapShow**.

-x [*hex1* **[-***hex2***]]**

> Specifies a port or a range of ports identified by port numbers, index number in hexadecimal format. You may specify multiple port ranges separated by a space, for example, -x 21-26 28-3c.

-pid *pid*

> Specifies the diagnostics information of a remote switch port along with its peer port.

Examples

> To display the current state of a D_Port:

```
switch:admin> portshow 28
portName: port28
portHealth: Fabric vision license not present

Authentication: None
portDisableReason: None
portCFlags: 0x1
portFlags: 0x10004103    PRESENT ACTIVE E_PORT \
   G_PORT D_PORT U_PORT LOGIN LED
LocalSwcFlags: 0x0
portType:  24.0
POD Port: Port is licensed
portState: 1    Online
Protocol: FC
portPhys: 6  In_Sync   portScn: 0   Flow control mode 4
port generation number:    0
state transition count:    1

portId:    2d1c00
portIfId:    43020028
portWwn:   20:1c:00:05:33:13:2f:b3
portWwn of device(s) connected:

Distance:  normal
portSpeed:  8Gbps

FEC: Inactive
LE domain: 0
FC Fastwrite: OFF
Interrupts:    0    Link_failure: 0    Frjt:   0
Unknown:       0    Loss_of_sync: 1    Fbsy:   0
```

```
Lli:          14    Loss_of_sig:  2
Proc_rqrd:     4    Protocol_err: 0
Timed_out:     0    Invalid_word: 0
Tx_unavail:    0    Invalid_crc:  0
Delim_err:     0    Address_err:  0
Lr_in:         2    Ols_in:       0
Lr_out:        0    Ols_out:      1
```

To display the current state of a port with encryption enabled:

```
switch:admin> portshow 10/44
portIndex: 348
portName: slot10 port44
portHealth: Fabric vision license not present

Authentication: None
portDisableReason: None
portCFlags: 0x1
portFlags: 0x10000103    PRESENT ACTIVE E_PORT T_PORT\
   T_MASTER G_PORT U_PORT ENCRYPT LOGIN
LocalSwcFlags: 0x0
portType:  24.0
portState: 1   Online
Protocol: FC
portPhys:  6  In_Sync  portScn: 1  Online Trunk master port
port generation number:    44
state transition count:    12
```

To display the state of a VE_Port on a chassis with an FX8-24 blade:

```
switch:admin> portshow 7/12
portIndex: 140
portName: slot7 port12
portHealth: Fabric vision license not present

Authentication: None
portDisableReason: None
portCFlags: 0x1
portFlags: 0x490b PRESENT ACTIVE VIRTUAL E_PORT \
   G_PORT U_PORT LOGICAL_ONLINE LOGIN LED
portType:  12.0
portState: 1   Online
Protocol: FC
portPhys:  255  N/A     portScn:  16   E_Port
port generation number:    1048
state transition count:    26

portId:    018c00
portIfId:   43720806
portWwn:   20:8c:00:05:1e:7a:7a:00
portWwn of device(s) connected:

Distance:  normal
```

To display port status for a GbE port on a Brocade 7840:

```
switch:admin> portshow ge2
Eth Mac Address: 00.05.33.65.82.ca
Port State: 1   Online
Port Phys:  6   In_Sync
Port Flags: 0x3 PRESENT ACTIVE
Port Speed: 10G
```

To display an FCoE port:

```
switch:admin> portshow -i 1801
portIndex: 1801
portName: slot-1 port-1
portHealth: Not Monitored

Authentication: None
portDisableReason: None
portCFlags: 0x1
portFlags: 0x24b03 PRESENT ACTIVE F_PORT G_PORT LOGICAL_ONLINE LOGIN
NOELP LED ACCEPT FLOGI LG_PORT
LocalSwcFlags: 0x0
portType:  0.0
portState: 1Online
Protocol: FCoE
portPhys:  255N/A portScn:   1Online
port generation number:    0
state transition count:    1

portId:    0290c0
portIfId:    4b052004
Associated ifindex: 0x10030800 (Type: Physical Port 3/16)
portWwn:    f1:f5:7c:5b:60:74:07:09
portWwn of device(s) connected:
10:00:00:90:fa:61:8b:18
16b Area list:
PID: 0x90c0, Attr: 0x5
Distance:  normal
portSpeed: Unknown
```

To display the cached data for a port:

```
switch:admin> portshow 32
portIndex:  32
portName: port32
portHealth:
Authentication: None
portDisableReason: None
portCFlags: 0x1
portFlags: 0x18024b03   PRESENT ACTIVE T_FPORT T_FMASTER F_PORT G_PORT
U_PORT LOGICAL_ONLINE LOGIN NOELP LED ACCEPT FLOGI
LocalSwcFlags: 0x0
portType:  24.0
POD Port: Port is licensed
portState: 1   Online
Protocol: FC
portPhys:  6   In_Sync     portScn:   32   F_Port    Trunk master port
```

```
port generation number:    22
state transition count:    1
portId:     323600
portIfId:    43020027
portWwn:   20:20:00:27:f8:81:85:69
Logical portWwn:   50:02:7f:88:18:58:60:32
portWwn of device(s) connected:
25:00:00:27:f8:65:02:3e
Distance:   normal
portSpeed: N8Gbps
FEC: Inactive
Credit Recovery: Inactive
Aoq: Inactive
FAA: Inactive
F_Trunk: Active
LE domain: 0
FC Fastwrite: OFF
Interrupts:     0     Link_failure: 0    Frjt:   0
Unknown:        0     Loss_of_sync: 0    Fbsy:   0
Lli:           28     Loss_of_sig:  0
Proc_rqrd:     24868 Protocol_err: 0
Timed_out:      0     Invalid_word: 0
Tx_unavail:     0     Invalid_crc:  0
Delim_err:      0     Address_err:  0
Lr_in:          4     Ols_in:       1
Lr_out:         2     Ols_out:      4
nodeWwn:   20:20:00:27:f8:81:85:69
PN_PORT Phy Type:  PN Port/PF Port [PN Port/PF Port, lossless Ethernet
MAC]
FEC Corrected Blocks:    0
FEC Uncorrected Blocks: 0


PEER PORT


portWwn:   20:20:00:27:f8:81:85:69
nodeWwn:   20:20:00:27:f8:81:85:69
PN_PORT Phy Type:  PN Port/PF Port [PN Port/PF Port, lossless Ethernet
MAC]
Link_failure: 0        Loss_of_sync: 0          Loss_of_sig:  0
Protocol_err: 0        Invalid_word: 0          Invalid_crc:  0
FEC Corrected Blocks:    0
FEC Uncorrected Blocks: 0
```

To display the information of a remote switch port:

```
switch:admin> portshow -pid 0x010500
SWITCH PORT0xDDAA00

portWwn:   20:20:00:27:f8:81:85:69
nodeWwn:   20:20:00:27:f8:81:85:69
PN_PORT Phy Type:  PN Port/PF Port
Link_failure: 0        Loss_of_sync: 0          Loss_of_sig:  0
Protocol_err: 0        Invalid_word: 0          Invalid_crc:  0
```

```
                    PEER PORT 0xDDAAxx

                    portWwn:   20:20:00:27:f8:81:85:69
                    nodeWwn:   20:20:00:27:f8:81:85:69
                    PN_PORT Phy Type:  PN Port/PF Port
                    Link_failure: 0        Loss_of_sync: 0        Loss_of_sig:  0
                    Protocol_err: 0        Invalid_word: 0        Invalid_crc:  0
```

Function

Display IP Interface configurations on the Brocade 7840, Brocade 7810, SX6, or FX8-24 platforms

Synopsis

portshow *option* [*slot/*]*ge_port* [*optional_args*] [**--filter** *filter_args*]

Description

Use this command to display FCIP-related configuration parameters on the Brocade 7840 switch, the Brocade 7810 switch, the Brocade SX6 extension blade, and the Brocade FX8-24 blade. The parameters displayed by this command are set with the **portCfg** command. The following displays are supported with this command:

- **portshow ipif** - Displays the local IP interfaces.

- **portshow iproute** - Displays static routes on the IP interface.

- **portshow arp** - Displays the content of the address resolution protocol (ARP) table.

- **portshow vlantag** - Displays the IP interface VLAN configuration. Supported on the Brocade FX8-24 only.

- **portshow autoneg** - Displays autonegotiation status. Not supported on Brocade 7840, Brocade 7810, and Brocade SX6 platforms.

- **portshow ipsec-policy** - Displays IPSEC Policy information. Supported on Brocade 7840 switch, Brocade 7810 switch, and the Brocade SX6 extension blade only. The [*slot/*]*ge_port* option is not applicable for **ipsec-policy**.

- **portshow mgmtif** - Displays the inband management interfaces.

- **portshow mgmtroute**- Displays the routes for the inband management interfaces.

- **portshow tcl** - Displays the Traffic Control List (TCL) information. Supported on the Brocade 7840 switch, the Brocade 7810 switch, and the Brocade SX6 extension blade only.

- **portshow lan-stats** - Displays the LAN statistics. Supported on the Brocade 7840 switch, the Brocade 7810 switch, and the Brocade SX6 extension blade only.

- **portshow sla** - Displays the SLA statistics. Supported on the Brocade 7840 switch, the Brocade 7810 switch and the Brocade SX6 extension blade only.

- • **portshow filter-set** - Displays the details of the configured filter-sets.

- • **portshow app-type** - Displays the details of the configured application types.

Notes

IPv6 addresses are supported.

Operands

This command has the following operands:

slot

For chassis-based systems only, specifies the slot number of the port to be displayed, followed by a slash (/).

ge_port

Specifies the number of the GbE port to be displayed relative to the slot number. The GbE ports are numbered ge0 - ge9 on the Brocade FX8-24 blade. The 10GbE ports on the Brocade FX8-24 blade are numbered xge0 and xge1. Brocade 7840 switch, Brocade 7810 switch, and the Brocade SX6 extension blade have two 40GbE ports labeled ge0 and ge1, and 16 1GbE or 10GbE ports labeled ge2-ge17. The Brocade 7810 switch has 2 copper 1Gbe ports and 6 1/10GbE ports. Use the **switchShow** command for a listing of valid ports

ipif

Displays the IP interface ID, IP address, prefix, MTU for IPv4 or IPv6 addresses and displays the VLANs associated with each IPIF and Flags. Flags are explained in the command output (refer to the example below).

--link-local-l

Displays the link-local interface addresses.

iproute

Displays the IP address, prefix, gateway, metrics, and flags.

--link-local-l

Displays the link-local interface routes. This operand is optional.

arp

Displays the address resolution protocol (ARP) and IPv6 neighbor discovery table. You can display the content of the ARP table, but you cannot modify its contents.

--link-local-l

Displays the neighbor discovery entries for the link-local addresses. This operand is optional.

--lmac-m

Displays the local MAC address. This operand is optional.

vlantag

Displays the VLAN Tagging configuration. For each entry, the output displays the IP interface address, the destination IP address, the VLAN ID, the L2 CoS priority, and a flag. This display includes tunnel- and IPIF-level configurations. The following flags indicate the type of configuration:

Perm

Permanent entry. Permanent entries are configured at the IP interface level with the **portCfg vlantag** command.

Perm Net

Network-wide permanent entry. The same as the permanent entry except that no destination address was defined (defaults to 0.0.0.0), so traffic to all destinations is tagged.

App

Application layer VLAN configuration defined at the circuit level.

autoneg

Displays the auto-negotiation status. Not supported on Brocade 7840 switch, Brocade 7810, and Brocade SX6.

ipsec-policy

Displays IPSEC Policy information. Currently supported on Brocade 7840 switch, Brocade 7810, and Brocade SX6 only.

mgmtif

Displays the inband management interfaces configured for a specified GbE Port or for all GbE Ports. For each GbE Port, the display includes the interface status (enabled or disabled), the interface IPv4 Address, the netmask, effective MTU, and annotated port flags.

mgmtroute

Displays the management routes configured for a specified GbE Port or for all GbE Ports. For each GbE Port, the display includes the destination IPv4 Address, the netmask, the gateway address, and annotated port flags.

tcl

Displays TCL information. The following options are supported:

-s | --summary

Displays summary view of all the TCLs.

-d | --detail

Displays detailed view of all the TCLs.

-p | --priority

Sorts the TCL list based on the priority.

-S | --sort *sort_field*

Sorts the TCL list based on specified sort field. Valid values for *sort_field* are **name** (TCL name), **priority** (priority ID of the TCL), **src-addr** (source IP address), and **dst-addr** (destination IP address).

portshow lan-stats *actions* **[***args***]**

Displays the LAN IP extension statistics. Supported on the Brocade 7840 switch, the Brocade 7810, and the Brocade SX6 extension blade only.

--per-flow

Displays the details of the LAN connections based on the throughput. If the number of connections is more than 25, the top 25 throughput connections are displayed. If the number of connections is less than 25, all the available connections are displayed.

-top [*count***]**

Displays the specified number of top throughput connections.

-bottom [*count***]**

Displays the specified number of bottom throughput connections.

-tcp

Displays the TCP error counter values for the LAN connections. Use this operand with **-top** or **-bottom** to display TCP error counter values for the specified number of top or bottom throughput connections.

-application [*app_name* **|** *port***]**

Displays aggregate throughput of the well-known applications.

app_name

   Displays the aggregation throughput and individual connection information which contributes towards the aggregated throughput for the specified application.

port

   Displays the aggregation throughput and individual connection information which contributes towards the aggregated throughput for the specified port number.

--per-flow -compression

   Displays the details of the LAN connections based on compression. If the number of connections is more than 25, the top 25 throughput connections are displayed. If the number of connections is less than 25, all the available connections are displayed.

-top [*count*]

   Displays the specified number of top compression connections.

-bottom [*count*]

   Displays the specified number of bottom compression connections.

-tcp

   Displays the TCP error counter values for the LAN connections. Use this operand with **-top** or **-bottom** to display TCP error counter values for the specified number of top or bottom compression connections.

--known-apps

   Displays the list of supported well-known applications for the aggregation statistics.

--global

   Displays the global LAN statistics for the switch.

-dp

   Displays the global LAN statistics of each data processor within the switch.

-reset

   Resets the global LAN statistics.

-lifetime

   Displays the entire lifetime global LAN statistics even after the statistics are reset.

--hist-stats

   Displays the most recently closed per-flow LAN statistics.

-all

Displays a summary view of the per-flow LAN statistics. The following operand is optional:

-index

Specifies a port identified by connection index number.

-detail

Displays details about the LAN statistics including TCP flags used to close the connection. The following operands are required:

-dp

Displays the global LAN statistics of each data processor within the switch.

-index

Specifies a port identified by port index number.

-freeze

Freezes the LAN connection statistic table.

-thaw

Clears the static LAN connection statistic table.

-dp

Specifies the data processor ID to filter on.

-filter

Limits the display to the specified filter criteria. Use **portShow lan-stats --hist-stats -filter -help** for details.

-Rx | -Tx

Displays connection in the specified flow sorting the highest Rx or Tx bytes.

-newest | -oldest

Displays connections in the specified flow sorting the recently opened or the oldest connection first.

--ip-pair

Displays statistics for the IP-Extension flow stats aggregated by IP-Pair that includes unique ID for each IP-Pair. By default, IP-Pairs are sorted with highest Rx+Tx bytes and are displayed at the top.

-index

> Specifies a port identified by port index number.

-reset

> Resets the IP-Pair statistics along with the timer to start a fresh new cycle.

-detail

> Displays detailed IP-Pair statistics.

-summary

> Displays the IP-Pair statistics in summary format (default format).

-hist

> Displays the IP-Pair historical summary.

-days

> Displays history for the specified number of days. The maximum value is 7. The option is valid only when **-index** count is specified.

-filter

> Limits the display to the specified filter criteria. Use **portShow lan-stats --ip-pair -filter -help** for details.

-Rx | -Tx

> Displays connections in the specified flow sorting the highest Rx or Tx bytes.

-newest | -oldest

> Displays connections in the specified flow sorting the recently opened or the oldest connection first.

-interval

> Displays the interval in seconds and must be greater than 10 seconds. The option is valid only when **-index** count is specified.

--flow

> Displays all connections in the specified flow. The default sorting is based on the **-throughput** option displaying the highest throughput first.

-throughput

> Displays connections in the specified flow sorting the highest throughput first.

-compression

> Displays connections in the specified flow sorting the highest compression in the beginning.

-RTT

> Displays connections in the specified flow sorting the connection with highest LAN RTT in the beginning.

-oop

> Displays connections in the specified flow sorting the highest OOP (out of order packets) in the beginning.

-retransmit

> Displays connections in the specified flow sorting the highest retransmit packet counter.

-Rx | -Tx

> Displays connections in the specified flow sorting by the highest Rx or Tx bytes.

-newest | -oldest

> Displays connections in the specified flow sorting by the most recently opened or the oldest connection first.

-top *count*

> Displays connections in the specified flow sorting based on the **-throughput** option and displaying only the top 20 connections.

-bottom *count*

> Displays connections in the specified flow sorting based on the **-throughput** option and displaying only the bottom 20 connections.

-interval

> Displays the interval in seconds and must be greater than 10 seconds. The option is valid only when **-index** count is specified.

-detail

> Displays a detailed statistics of the connections. The following operands are required:

-index

> Prints connection in that particular index and the connection can be in current or historical stats. Maximum allowed count is 65535 (64K-1).

-reset

>   Resets all connection statistics.

default

>   Displays active connections with brief statistics of each connection.

sla [*name* | all]

>   Displays the configuration parameters for a specific SLA or all SLAs. The following
>   optional arguments are supported:

-s | --summary

>   Displays a summary view of the configuration parameters for a specific SLA or all SLAs.

-d | --detail

>   Displays a detailed view of the configuration parameters for a specific SLA or all SLAs.

filter-set

>   Displays the name, default action, and filter statement of the configured filter-sets.

app-type

>   Displays the application name, port ranges, and description of the configured application
>   types.

--filter *filter_args*

>   Filters the **portShow** output based on the specified filter arguments. The filter arguments
>   can be specified in any combination or as a conditional statement using the logical AND
>   or OR operator. A conditional statement can have up to 30 conditions. This operand is
>   supported with **ipif**, **iproute**, **tcl**, and **lan-stats** options. The following filter arguments are
>   supported:

--set *name*

>   Specifies the filter-set name that is configured using the **portcfg filter-set** command. Use
>   **portshow filter-set** to list the details of the configured filter-sets.

--port [*slot*/]*port*

>   Filters the output based on the specified port number.

--slot *slot*

>   Filters the output based on the specified slot number.

--ipaddr *ip_address*

Filters the output based on the specified IP address.

--dp [*slot/***]***dp#*

Filters the output based on the specified dual processor ID.

--circuit *cid*

Filters the output based on the specified FCIP circuit ID within the tunnel.

--priority *value*

Filters the output based on the specified priority ID. Valid values for *value* are control, high, medium, low, ip-high, ip-medium, and ip-low.

--ha-type *type*

Filters the output based on the HA type. Valid values for *type* are main, local-backup, and remote-backup.

--tcp-port *value*

Filters the output based on the specified TCP port number. The valid range for *value* is from 0 through 65535. Use the **portshow lan-stats --known-apps** for the list of supported application types.

--retransmits *value*

Filters the output based on the retransmits exceeding specified value.

--rtt *ms*

Filters the output based on the specified circuit round trip time in milliseconds.

--bytes *bytes***[k | m | g]**

Filters the output based on bandwidth (bytes per second) exceeding the specified value. Specify **k** for KB/s, **m** for MB/s, and **g** for Gb/s.

--conn-cnt *value*

Filters on tunnel and circuit objects where the connected count is greater than or equal to the specified *value*.

--vlan *vlan_id*

Filters the output based on VLAN ID.

--oper-status *oper*

> Filters the output based on the specified operation status of a tunnel. You can specify the exact operation string or the states such as active, inactive, healthy, and unhealthy.

--default [show | hide]

> Sets the default display action if the specified filter statement is not supported. The default action is **hide**.

--show

> Displays the objects matching the filter criteria.

--hide

> Hides the objects matching the filter criteria.

--or

> The logical OR operator.

--and

> The logical AND operator.

Examples

> To display the IP interface and static route configured for failover crossports on the Brocade FX8-24:

```
switch:admin> portshow ipif 8/xge0
 Port          IP Address                        / Pfx   MTU    VLAN   Flags
--------------------------------------------------------------------------
-----------
 8/xge0       192.168.10.20                      / 24    1500   n/a    U R M
 8/xge0       192.168.11.21                      / 24    1500   n/a    U R M X
--------------------------------------------------------------------------
-----------
Flags: U=Up B=Broadcast D=Debug L=Loopback P=Point2Point R=Running
      N=NoArp PR=Promisc M=Multicast S=StaticArp LU=LinkUp X=Crossport

switch:admin> portshow iproute 8/xge0
 Port          IP Address                / Pfx  Gateway               Flags
--------------------------------------------------------------------------
-----------
 8/xge0        192.168.0.0               / 24    *                      U C
 8/xge0        192.168.0.111             / 32    *                      U H L
 8/xge0        192.168.1.0               / 24    *                      U C X
 8/xge0        192.168.1.111             / 32    *                      U H L X
--------------------------------------------------------------------------
-----------
 Flags: U=Usable G=Gateway H=Host C=Created(Interface)
```

```
            S=Static L=LinkLayer X=Crossport
```

To display the IP interface and static route configured on Brocade 7840:

```
switch:admin> portshow iproute -l
 Port          IP Address                / Pfx  Gateway            Flags
-------------------------------------------------------------------------
----
 ge0.dp0       192.168.0.0               / 24   *                  U C
 ge0.dp0       192.168.0.1               / 32   *                  U H L
 ge0.dp0       192.168.2.0               / 24   192.168.0.1        U G S
 ge0.dp0       fe80::                    / 64   *                  U C
 ge0.dp0       fe80::5:33ff:f065:7b08    / 128  *                  U H L
 ge0.dp0       ff01::                    / 32   *                  U C
 ge0.dp0       ff02::                    / 32   *                  U C
 ge0.dp1       192.168.0.0               / 24   *                  U C
 ge0.dp1       fe80::                    / 64   *                  U C
 ge0.dp1       fe80::5:33ff:f165:7b08    / 128  *                  U H L
 ge0.dp1       ff01::                    / 32   *                  U C
 ge0.dp1       ff02::                    / 32   *                  U C
 ge1.dp0       192.168.1.0               / 24   *                  U C
 ...
 ge17.dp1      fe80:11::5:33ff:f165:7b19 / 128  *                  U H L
 ge17.dp1      ff01:11::                 / 32   *                  U C
 ge17.dp1      ff02:11::                 / 32   *                  U C
-------------------------------------------------------------------------
----
 Flags: U=Usable G=Gateway H=Host C=Created(Interface)
        S=Static L=LinkLayer X=Crossport
```

To display the IP interfaces configured on Brocade 7840:

```
switch:admin> portshow ipif  -l
 Port          IP Address                  / Pfx   MTU   VLAN  Flags
-------------------------------------------------------------------------
----
 ge0.dp0       fe80::5:33ff:f065:7b08       / 64   1500   0    U R M
 ge0.dp0       192.168.0.10                 / 24   1500   0    U R M
 ge0.dp1       fe80::5:33ff:f165:7b08       / 64   1500   0    U R M
 ge0.dp1       192.168.0.11                 / 24   1500   0    U R M
 ge1.dp0       fe80:1::5:33ff:f065:7b09     / 64   1500   0    U R M
 ge1.dp0       192.168.1.10                 / 24   1236   100  U R M
 ge1.dp1       fe80:1::5:33ff:f165:7b09     / 64   1500   0    U R M
 ge1.dp1       2000::10                     / 64   1500   0    U R M
 ge2.dp0       fe80:2::5:33ff:f065:7b0a     / 64   1500   0    U R M
 ge2.dp1       fe80:2::5:33ff:f165:7b0a     / 64   1500   0    U R M
 ge3.dp0       fe80:3::5:33ff:f065:7b0b     / 64   1500   0    U R M
 ge3.dp1       fe80:3::5:33ff:f165:7b0b     / 64   1500   0    U R M
 ge4.dp0       fe80:4::5:33ff:f065:7b0c     / 64   1500   0    U R M
 ge4.dp1       fe80:4::5:33ff:f165:7b0c     / 64   1500   0    U R M
 ...
 ge11.dp1      fe80:b::5:33ff:f165:7b13     / 64   1500   0    U R M
 ge12.dp0      fe80:c::5:33ff:f065:7b14     / 64   1500   0    U R M
 ge12.dp1      fe80:c::5:33ff:f165:7b14     / 64   1500   0    U R M
```

```
ge13.dp0      fe80:d::5:33ff:f065:7b15        / 64    1500   0      U R M
ge13.dp1      fe80:d::5:33ff:f165:7b15        / 64    1500   0      U R M
ge14.dp0      fe80:e::5:33ff:f065:7b16        / 64    1500   0      U R M
ge14.dp1      fe80:e::5:33ff:f165:7b16        / 64    1500   0      U R M
ge15.dp0      fe80:f::5:33ff:f065:7b17        / 64    1500   0      U R M
ge15.dp1      fe80:f::5:33ff:f165:7b17        / 64    1500   0      U R M
ge16.dp0      fe80:10::5:33ff:f065:7b18       / 64    1500   0      U R M
ge16.dp1      fe80:10::5:33ff:f165:7b18       / 64    1500   0      U R M
ge17.dp0      fe80:11::5:33ff:f065:7b19       / 64    1500   0      U R M
ge17.dp1      fe80:11::5:33ff:f165:7b19       / 64    1500   0      U R M
------------------------------------------------------------------------
----
Flags: U=Up B=Broadcast D=Debug L=Loopback P=Point2Point R=Running
       N=NoArp PR=Promisc M=Multicast S=StaticArp LU=LinkUp X=Crossport
```

To display the ARP tables on the Brocade 7840:

```
switch:admin> portshow arp

Port      IP Address       MAC Address        Flags
----------------------------------------------------------------
ge6.dp0   77.195.6.1       00:00:00:00:00:00  Dynamic
ge6.dp0   192.168.0.10     00:05:33:65:84:0e  Dynamic Resolved
ge8.dp0   10.1.8.76        00:05:33:65:84:10  Dynamic Resolved
----------------------------------------------------------------


switch:admin> portshow arp ge6

Port      IP Address       MAC Address        Flags
----------------------------------------------------------------
ge6.dp0   77.195.6.1       00:00:00:00:00:00  Dynamic
ge6.dp0   192.168.0.10     00:05:33:65:84:0e  Dynamic Resolved
----------------------------------------------------------------
```

To display the auto-negotiation of 1GbE port:

```
switch:admin> portshow autoneg 1/ge2
Auto-Negotiation Configuration:
Port: 1/ge2
Auto-Negotiate: Enabled
```

To display the IPSEC policy for a Brocade 7840 switch:

```
switch:admin> portshow ipsec-policy --ike
IPSec Policy     Key
 IKE-ID Oper Flg Local-Addr     Remote-Addr     IKE Rekey     ESP Rekey
------------------------------------------------------------------------
----
 policy1          123456789012
  dp0.0  UP  R   192.168.0.20   192.168.0.120  -         -    -        -
  dp0.1  UP  I   192.168.0.20   192.168.0.121  2h44m4s   0    3h41m1s  1
  dp1.0  UP  I   192.168.0.21   192.168.0.120  2h43m58s  0    41m16s   0
------------------------------------------------------------------------
----
Flags: *=Name Truncated  I=Initiator R=Responder
```

To display detailed output of IPSEC policy Hash Match:

switch:admin> portshow ipsec-policy
```
IPSec Policy  Hash                        Hash Match Certificate
----------------------------------------------------------------------
------
157_170_17460  ---                                  MisMatch   Expired
157_170_23026  10x38x138x170x23026secp384r1CA.pem  Matched    Valid
157_170_25042  10x38x138x170x25042secp384r1CA.pem  Matched    Valid
----------------------------------------------------------------------
------
Flags: *=Name Truncated. Use "portshow ipsec-policy -d for details".
```

switch:admin> portshow ipsec-policy -d
```
IPSec-policy: 157_170_17460
------------------------------------------------
  Certificate:          Expired
  Hash:                 ----
  Hash Match:           Mismatch
  Keypair:              10x38x138x170x17460
  Profile:              pki
  Authentication:       ECDSA_P384
  Encryption:           AES_256_CBC
  Integrity:            HMAC_SHA_384_192
  Diffie Hellman:       ECDH_P384
  Pseudo Random Function: HMAC_384
  Num IKE Sessions:     0

IPSec-policy: 157_170_23026
------------------------------------------------
  Certificate:          10x38x138x170x23026secp384r1CA.pem
  Hash:                 d55436bcdc18092b8ca1c5aa7d0805af606052db
  Hash Match:           Matched
  Keypair:              10x38x138x170x23026
  Profile:              pki
  Authentication:       ECDSA_P384
  Encryption:           AES_256_CBC
  Integrity:            HMAC_SHA_384_192
  Diffie Hellman:       ECDH_P384
  Pseudo Random Function: HMAC_384
  Num IKE Sessions:     0

IPSec-policy: 157_170_25042
------------------------------------------------
  Certificate:          10x38x138x170x25042secp384r1CA.pem
  Hash:                 4a1174b9706d1cd400662fb14a75ac0bd8dd4435
  Hash Match:           Matched
  Keypair:              10x38x138x170x25042
  Profile:              pki
  Authentication:       ECDSA_P384
  Encryption:           AES_256_CBC
  Integrity:            HMAC_SHA_384_192
```

```
     Diffie Hellman:            ECDH_P384
     Pseudo Random Function: HMAC_384
     Num IKE Sessions:          12
```

To display detailed output of all the TCLs:

```
switch:admin> portshow tcl -d
TCL: hostAtoB
==========================================
 Admin Status:        Enabled
 Priority:            10
 Target:              24-Medium (tid:9)
 VLAN:                ANY
 L2COS:               ANY
 DSCP:                ANY
 Source Address:      10.0.0.0/8
 Destination Address: ANY
 L4 Protocol:         ANY
 Protocol Port:       ANY
 Segment Preservation: Disabled
 Action:              Allow
 Cfgmask:             0x085c3a27
 Hit Count:           0

 TCL: default
==========================================
 Admin Status:        Enabled
 Priority:            65535
 Target:              -
 VLAN:                ANY
 L2COS:               ANY
 DSCP:                ANY
 Source Address:      ANY
 Destination Address: ANY
 L4 Protocol:         ANY
 Protocol Port:       ANY
 Segment Preservation: Disabled
 Action:              Deny
 Cfgmask:             0x08c9007
 Hit Count:           0
```

To display the LAN connections based on the throughput (in the following example, the number of connections is more than 25):

```
switch:admin> portshow lan-stats --per-flow
***Displaying Top 25 connections by throughput***

Src-Address      Dst-Address      Sport  Dport  Pro Tx(B/s)  Rx(B/s)
-------------------------------------------------------------------
192.168.20.223   192.168.10.225   49678  49864  TCP 10.5m    10.5m
192.168.20.223   192.168.10.225   49695  49864  TCP 10.5m    10.5m
192.168.20.223   192.168.10.225   49672  49864  TCP 10.5m    10.5m
192.168.20.223   192.168.10.225   49687  49864  TCP 10.5m    10.5m
192.168.20.223   192.168.10.225   49690  49864  TCP 10.5m    10.5m
```

```
192.168.20.223    192.168.10.225    49689  49864  TCP 10.5m    10.5m
192.168.20.223    192.168.10.225    49693  49864  TCP 10.5m    10.5m
192.168.20.223    192.168.10.225    49683  49864  TCP 10.4m    10.4m
192.168.20.223    192.168.10.225    49679  49864  TCP 10.4m    10.4m
192.168.20.223    192.168.10.225    49674  49864  TCP 10.4m    10.4m
192.168.20.223    192.168.10.225    49694  49864  TCP 10.4m    10.4m
192.168.20.223    192.168.10.225    49671  49864  TCP 10.4m    10.4m
192.168.20.223    192.168.10.225    49691  49864  TCP 10.4m    10.4m
192.168.20.223    192.168.10.225    49670  49864  TCP 10.3m    10.3m
192.168.20.223    192.168.10.225    49675  49864  TCP 10.3m    10.3m
192.168.20.223    192.168.10.225    49680  49864  TCP 10.3m    10.3m
192.168.20.223    192.168.10.225    49676  49864  TCP 10.3m    10.3m
192.168.20.223    192.168.10.225    49686  49864  TCP 10.3m    10.3m
192.168.20.223    192.168.10.225    49673  49864  TCP 10.0m    10.0m
192.168.20.223    192.168.10.225    49681  49864  TCP 10.0m    10.0m
192.168.20.223    192.168.10.225    49688  49864  TCP 9.9m     9.9m
192.168.20.223    192.168.10.225    49696  49864  TCP 9.9m     9.9m
192.168.20.223    192.168.10.225    49692  49864  TCP 9.9m     9.9m
192.168.20.223    192.168.10.225    49677  49864  TCP 9.8m     9.8m
192.168.20.223    192.168.10.225    49669  49374  TCP 9.7m     9.7m
-----------------------------------------------------------------------
Sport=Source-Port Dport=Destination-Port Pro=Protocol
```

To display the specified number of top throughput connections:

```
switch:admin> portshow lan-stats --per-flow -top 5
Src-Address      Dst-Address      Sport  Dport  Pro Tx(B/s)  Rx(B/s)
-----------------------------------------------------------------------
-
192.168.20.223    192.168.10.225    49695  49864  TCP 15.7m    15.7m
192.168.20.223    192.168.10.225    49678  49864  TCP 15.7m    15.7m

192.168.20.223    192.168.10.225    49672  49864  TCP 15.7m    15.7m
192.168.20.223    192.168.10.225    49690  49864  TCP 15.6m    15.6m
192.168.20.223    192.168.10.225    49689  49864  TCP 15.6m    15.6m
-----------------------------------------------------------------------
-
Sport=Source-Port Dport=Destination-Port Pro=Protocol
```

To display the TCP error counter values:

```
switch:admin> portshow lan-stats --per-flow -tcp
***Displaying Top 1 connections by throughput***

Src-Address        Dst-Address         Sport  Dport  Pro Tx(B/s)  Rx(B/s)
TCP  TxPkt  RxPkt   TxDrp  RxDrp  ReTx   DpAck  OOO    RTT        FlwCtrl
-----------------------------------------------------------------------
-------
192.168.20.223     192.168.10.225      49679  49864  TCP 17.4m    17.4m
     0     1.2m    0      0      0      0      0      42          0
-----------------------------------------------------------------------
-------
Sport=Source-Port Dport=Destination-Port Pro=Protocol
TxPkt=Tx-Packets Rxpkt=Rx-Packets
TxDrp=TX-Drops RxDrp=RX-Drops
```

```
ReTx=ReTransmission OOO=out-of-order
DpAck=Duplicate-Acks RTT=Round-Trip-Time(milliseconds)
FlwCtrl=Number of Flow-controls
```

To display the specified number of bottom compression connections:

```
switch:admin> portshow lan-stats --per-flow -compression -bottom 5
Src-Address       Dst-Address       Sport  Dport  Pro CTx(B) CRx(B)  CR
-----------------------------------------------------------------------
-----
192.168.10.225  192.168.20.223   51300  53086  TCP 104     8      0.00:1
192.168.20.223  192.168.10.225   53087  49374  TCP 239     143    0.00:1
192.168.20.223   192.168.10.225   53094  51301  TCP 195.2m  217.7m
10.3:1
192.168.20.223   192.168.10.225   53099  51301  TCP 197.3m  220.2m
10.4:1
192.168.20.223   192.168.10.225   53097  51301  TCP 159.4m  177.8m
10.4:1
-----------------------------------------------------------------------
------
Sport=Source-Port Dport=Destination-Port Pro=Protocol
CTx(B)=Post-Compression bytes Rx(B)=Pre-Compression bytes
CR=Compression-Ratio
```

To display aggregate throughput of well-known applications:

```
switch:admin> portshow lan-stats --per-flow -application
 Aggregate Info:
Port        APP        TX(B/s)      RX(B/s)
-------------------------------------------------------
80         HTTP       145.5m       120.1m
8080       HTTP       100.2m       112.1m
69         TFTP       601.0m       423.3m
-          Unknown    406.5m       406.5m
-------------------------------------------------------
Sport=Source-Port Dport=Destination-Port Pro=Protocol
App=Application Name
```

To display the supported well-known applications:

```
switch:admin> portshow lan-stats --known-apps
App                   Port-Id(s)
----------------------------------------------
CIFS                  139,445
FCIP                  3225-3226
FTP                   20-21,989-990,115
HTTP                  80,8080,8000-8001,3128
HTTPS                 443
iSCSI                 3260
Isilon-SyncIQ         5666-5667
LDAP                  389,8404,636
MS-SQL                1443
MySQL                 3306
NETAPP-SNAP-MIRROR    10566
NFS                   2049
ORACLE-SQL            66,1525,1521
```

```
RSYNC                    873
SRDF                     1748
SSH                      22
SSL-SHELL                614
TELNET                   23,107,513,992
TFTP                     69
VERITAS-BACKUP           6101-6102,6106,3527,1125
VTS-GRID Control         1415-1416
VTS-GRID Data            350
-------------------------------------------------
```

To display the global LAN statistics:

```
switch:admin> portshow lan-stats --global
LAN Global stats
-------------------------------------------------
Active TCP conn                     :25
Establish TCP conn                  :116
Closed TCP conn                     :91
TCP Tx-Bytes                        :50.3m
TCP Rx-Bytes                        :24.4m
TCP Tcl-Deny conn                   :0
TCP Tcl lookup fail                 :0
Sync-Recv                           :111
Sync-fail                           :0
Drop-Bytes                          :0
Drop-Pkts                           :0
Stale Reset from Host               :0
Number of times
Max TCP conn exceeded as client     :0
Number of times
Max TCP conn exceeded as server     :0
Number of times Max TCP conn
per second exceeded as client       :0
Number of times Max TCP conn
per second exceeded as server       :0
Number of times
Max UDP conn exceeded               :7
Number of times
TX PDU preserve ON                  :0
Number of times
RX PDU preserve ON                  :0
Total IPV6 pkts                     :1012
FlowControl on                      :0
FlowControl off                     :0
Active UDP conn                     :0
Establish UDP conn                  :619
Closed UDP conn                     :619
UDP route lookup fail               :586
UDP PDU drops due to
PKO flow control                    :12800
TX UDP PDUs                         :22919200
TX UPD PDU drops                    :13386
RX UDP PDUs                         :1991
```

```
RX UDP Tcl lookup fail PDUs      :85
RX UDP Tcl-Deny PDUs             :1012
Total RX UDP PDU drops           :1104
RX UDP PDU drops due to
stream flow control              :0
TX ICMP PDUs                     :0
TX ICMP PDU drops                :0
RX ICMP PDUs                     :3
RX ICMP Tcl lookup fail PDUs     :3
RX ICMP Tcl-Deny PDUs            :0
Total RX ICMP PDU drops          :3
RX ICMP PDU drops due to
stream flow control              :0
TX ASIS IP PDUs                  :0
TX ASIS IP PDU drops             :0
RX ASIS IP PDUs                  :36
RX ASIS IP Tcl lookup fail PDUs  :20
RX ASIS IP Tcl-Deny PDUs         :8
Total RX ASIS IP PDU drops       :28
RX ASIS IP PDU drops due to
stream flow control              :0
RX Error IP Checksum             :0
RX Error TCP Checksum            :0
RX Error MAC                     :0
RX Error CRC                     :0
RX Error Parity                  :0
RX Error Length                  :0
TX UDP pkts < 64 bytes      :0
TX UDP pkts < 128 bytes     :0
TX UDP pkts < 256 bytes     :0
TX UDP pkts < 512 bytes     :0
TX UDP pkts < 1024 bytes    :22919200
TX UDP pkts < 1500 bytes    :0
TX UDP pkts < 3000 bytes    :0
TX UDP pkts < 4500 bytes    :0
TX UDP pkts < 6000 bytes    :0
TX UDP pkts < 9000 bytes    :0
RX UDP pkts < 64 bytes      :79
RX UDP pkts < 128 bytes     :992
RX UDP pkts < 256 bytes     :80
RX UDP pkts < 512 bytes     :0
RX UDP pkts < 1024 bytes    :840
RX UDP pkts < 1500 bytes    :0
RX UDP pkts < 3000 bytes    :0
RX UDP pkts < 4500 bytes    :0
RX UDP pkts < 6000 bytes    :0
RX UDP pkts < 9000 bytes    :0
--------------------------------------------------
```

To display detailed LAN connection statistics:

```
switch:admin> portshow lan-stats --hist-stats -detail \
    -dp dp0 -index 17
```

```
Warning: It is recommended to freeze the table when using detailed
stats.

DP0 Connection Detail:(Thawed)
------------------------------------------------------------------
 Slot/DP | Connection:    DP0 | 5
 Src IP Address:          192.78.10.242
 Src Port:                53795
 Dst IP Address:          192.79.10.243
 Dst Port:                59039
 Start time:              08/18/15 21:17:26 UTC
 End time:                08/18/15 21:17:59 UTC
 Close reason/Flag:       Remote LAN / TX FIN
 Current/Previous State:  Time-Wait / FIN-Wait-2
 Last 5 Connection States:
  State/Reason Code 1:    SYN-Sent / User Connect
  State/Reason Code 2:    Established / Connection Success
  State/Reason Code 3:    FIN-Wait-1 / User Close
  State/Reason Code 4:    FIN-Wait-2 / RX ACK for FIN
  State/Reason Code 5:    Time-Wait / Timer Cleanup
 L4 Protocol/MSS:         TCP / 1460
 TX Stats
  TX Bytes/Packets:       710717432 / 542617
  Slow Starts:            0
  FastRetrans/RetransTO:  0 / 0
  Initial/Max Send Seq:   1490083657 / 2179096399
 RX Stats
  RX Bytes/Packets:       689012740 / 504638
  Out of Orders/Dup Ack:  0 / 0
  Initial Receive Seq:    1799596954
```

To freeze the LAN statistic table:

```
switch:admin> portshow lan-stats --hist-stats -freeze
DP0 Connection Summary:(Frozen)
-----------------------------------------------------------------------
-----------
 Idx  Src-Address       Dst-Address        Sport  Dport  Pro  Tx(B)
Rx(B)
-----------------------------------------------------------------------
-----------
First 5 Connections:
 0    192.78.10.242     192.79.10.243      53786  49374  TCP  271      72
 1    192.78.10.242     192.79.10.243      53785  59038  TCP  120       8
 2    192.78.10.242     192.79.10.243      53788  59039  TCP  711.1m
689.4m
 3    192.78.10.242     192.79.10.243      53787  59039  TCP  712.3m
690.5m
 4    192.78.10.242     192.79.10.243      53791  59039  TCP  713.0m
691.2m
Last 5 Connections:
 27   192.78.10.242     192.79.10.243      53816  59039  TCP  697.2m
675.9m
```

```
 28   192.78.10.242      192.79.10.243       53814 59039  TCP  701.1m
679.7m
 29   192.78.10.242      192.79.10.243       53815 59039  TCP  700.4m
679.0m
 30   192.78.10.242      192.79.10.243       53810 59039  TCP  707.7m
686.1m
 31   192.78.10.242      192.79.10.243       53817 59039  TCP  691.0m
669.9m
------------------------------------------------------------------------
-----------
Total Connection count:   32
Oldest Entry:             08/18/15 21:17:59
Newest Entry:             08/18/15 21:17:59
Close RX/TX FIN:          1 / 31
Close RX/TX RST:          0 / 0
Total TX Errors
 Slow Starts:             0
 FastRetrans/RetransTO:   0 / 0
Total RX Errors
 Out of Orders/Dup Ack:   0 / 0
```

To display the throughput stats on an IP-Pair basis:

```
switch:admin> portshow lan-stats --ip-pair

 DP      Idx SrcAddr            DstAddr             Active  TxB       RxB
------------------------------------------------------------------------
-----------
 DP0     0   10.0.2.10          20.0.2.20           1       1.8m      8.4m
 DP0     1   10.0.1.10          20.0.1.20           1       2.1m      3.3m
 DP0     2   10.0.3.10          20.0.3.20           1       2.4m      7.7m
....
 DP1     5   10.1.6.10          20.1.6.20           1       2.6m      67.4m
 DP1     6   10.1.7.10          20.1.7.20           1       5.7m      3.3m
 DP1     7   10.1.8.10          20.1.8.20           1       31.1m     1.4m
 DP1     8   10.1.9.10          20.1.9.20           1       4.2m      4.3m
------------------------------------------------------------------------
-----------
```

To thaw the LAN statistic table:

```
portshow lan-stats --hist-stats -thaw
DP0 Connection Summary:(Thawed)
------------------------------------------------------------------------
-----------
 Idx  Src-Address        Dst-Address         Sport Dport  Pro  Tx(B)
Rx(B)
------------------------------------------------------------------------
-----------
First 5 Connections:
 0    192.78.10.242      192.79.10.243       53786 49374  TCP  271     72
 1    192.78.10.242      192.79.10.243       53785 59038  TCP  120      8
 2    192.78.10.242      192.79.10.243       53788 59039  TCP  711.1m
689.4m
```

```
 3   192.78.10.242      192.79.10.243       53787 59039  TCP  712.3m
690.5m
 4   192.78.10.242      192.79.10.243       53791 59039  TCP  713.0m
691.2m
Last 5 Connections:
27   192.78.10.242      192.79.10.243       53816 59039  TCP  697.2m
675.9m
28   192.78.10.242      192.79.10.243       53814 59039  TCP  701.1m
679.7m
29   192.78.10.242      192.79.10.243       53815 59039  TCP  700.4m
679.0m
30   192.78.10.242      192.79.10.243       53810 59039  TCP  707.7m
686.1m
31   192.78.10.242      192.79.10.243       53817 59039  TCP  691.0m
669.9m
--------------------------------------------------------------------
-----------
Total Connection count:   32
Oldest Entry:             08/18/15 21:17:58
Newest Entry:             08/18/15 21:17:58
Close RX/TX FIN:          1 / 31
Close RX/TX RST:          0 / 0
Total TX Errors
 Slow Starts:             0
 FastRetrans/RetransTO:   0 / 0
Total RX Errors
 Out of Orders/Dup Ack:   0 / 0
```

To display the SLA statistics:

```
switch:admin> portshow sla
 Name   PktLoss   Runtime   Timeout
---------------------------------
 netA   0.50%     15m       1h
---------------------------------
```

To display the details of the configured filter-sets:

```
switch:admin> portshow filter-set
 Name           ACT/DEF    Filter Statement
-----------------------------------------------------
 tcpErrors   SHOW/HIDE  (retx:100 && bytes:1000000)
-----------------------------------------------------
 ACT: Action for objects matching filter
 DEF: Default behavior for objects where filter doesn't apply
```

To display all tunnels and only circuits using IP address 10.0.0.1:

```
switch:admin> portshow fciptunnel -c
    --filter -ipaddr 10.0.0.1 --default show
```

To display only per-flow statistics that use both IP address 192.168.0.10 AND TCP port 336:

```
switch:admin> portshow lan-stats --per-flow -all
    --filter -ipaddr 192.168.0.10 -tcp-port 336 -and
```

To display tunnels based on the operational status:

```
switch:admin> portshow fciptunnel -c
 Tunnel Circuit  OpStatus  Flags     Uptime  TxMBps  RxMBps ConnCnt
CommRt Met/G
------------------------------------------------------------------------
----------
 24    -        Up       --------I   5m30s   0.00    0.00   6      -      -
 24    0 ge2    Up       ----ah--4   5m31s   0.00    0.00   6   1000/
1000  0/-
 25    -        Up       ---------   5m27s   0.00    0.00   6      -      -
 25    0 ge3    Up       ----ah--4   5m27s   0.00    0.00   6   1000/
1000  0/-
 34    -        InProg   --------I   0s      0.00    0.00   0      -      -
 34    0 ge2    InProg   ----ah--4   0s      0.00    0.00   0   2500/
5000  0/-
------------------------------------------------------------------------
----------
 Flags (tunnel): i=IPSec f=Fastwrite T=TapePipelining F=FICON
r=ReservedBW
                 a=FastDeflate d=Deflate D=AggrDeflate P=Protocol
                 I=IP-Ext
       (circuit): h=HA-Configured v=VLAN-Tagged p=PMTU i=IPSec 4=IPv4
6=IPv6
                 ARL a=Auto r=Reset s=StepDown t=TimedStepDown  S=SLA

switch:admin> portshow fciptunnel -c --filter --oper-status unhealthy
 Tunnel Circuit  OpStatus  Flags     Uptime  TxMBps  RxMBps ConnCnt
CommRt Met/G
------------------------------------------------------------------------
----------
 34    -        InProg   --------I   0s      0.00    0.00   0      -      -
 34    0 ge2    InProg   ----ah--4   0s      0.00    0.00   0   2500/
5000  0/-
------------------------------------------------------------------------
----------
 Flags (tunnel): i=IPSec f=Fastwrite T=TapePipelining F=FICON
r=ReservedBW
                 a=FastDeflate d=Deflate D=AggrDeflate P=Protocol
                 I=IP-Ext
       (circuit): h=HA-Configured v=VLAN-Tagged p=PMTU i=IPSec 4=IPv4
6=IPv6
                 ARL a=Auto r=Reset s=StepDown t=TimedStepDown  S=SLA
```

To display the list of configured application types:

```
switch:admin> portshow app-type
 Application   Port Ranges         Description
--------------------------------------------------------------------
 Data-Domain   2051                Brocade Data Domain
 FTP           20-21,989-990,115   Includes Control data FTPS and

                                   Simple FTP
 LDAP          389,8404,636        Includes LDAP secure
 TELNET        23,107,513,992      Includes Telnet connections
 TFTP          69                  TFTP File Transfer
```

–––

Function

Display FCIP tunnels, circuits, management interfaces and FICON statistics on the Brocade 7840, Brocade 7810, SX6, or FX8-24 platforms:

Synopsis

portshow *option* [**all** | [*slot/*]*ve_port*]] *arguments* [*optional_arguments*]

Description

Use this command to display configuration parameters and status information for FCIP tunnels and FCIP circuits on the GbE/10GbE ports on the Brocade 7840, Brocade 7810, Brocade SX6, and FX8-24 platforms. The FCIP tunnels on the local and remote GbE ports act as Virtual E_Ports (VE_Ports) connecting the local and remote fabrics. The following display options are supported on these platforms:

- **portShow fciptunnel** - Displays Fibre Channel over IP (FCIP) tunnels including the following:
  – Additional performance information

  – FICON configuration parameters

  – IPSec status (enabled or disabled), mode (legacy if configured) and key

  – Circuits within the tunnel

  – QoS statistics including performance for each priority

  – FCIP Tunnel hierarchy listing circuit IDs and TCP connection information for the tunnel

- **portShow fcipcircuit** - Displays status and configuration for FCIP circuits:
  – TCP statistics for the circuit

  – Circuit-level VLAN tagging configuration

  – Circuit-level Differentiated Services (DSCP) markings

- **portShow xtun** - Displays FICON and FCP emulation statistics and current runtime conditions.

Operands

This command has the following operands:

slot

For chassis-based systems only, specifies the slot number of the VE_Port to be displayed, followed by a slash (/).

ve_port

Displays information for a single specified FCIP tunnel. On the Brocade 7840, Brocade 7810, SX6, or FX8-24, specify the VE_Port number associated with the tunnel configured on one of the GbE ports. VE_Ports are numbered 12-31 on the Brocade FX8-24 blade.

all

Displays information for all configured FCIP tunnels.

fciptunnel

Displays configuration and status per FCIP tunnel. The following operands are supported with **fciptunnel** and **fcipcircuit**.

-c | --circuit

Displays the FCIP circuits within the tunnel. This operand can be used with any other operand to include circuit displays.

-t | --tcp

Displays the TCP statistics for the circuit. The **-c** option must be specified with this option.

--reset

Displays the current time-based statistic and then resets TCP statistics for the circuit to establish a baseline.

--lifetime

Displays the entire lifetime statistics for FCIP Tunnels, Circuits and the associated TCP connections. This option will ignore any time based deltas that were created previously set using the **--reset** option.

-p | --perf

Displays additional performance information for the specified FCIP tunnels.

--lifetime

Displays the entire lifetime statistics for FCIP Tunnels, Circuits and the associated TCP connections. This option will ignore any time based deltas that were created previously set using the **--reset** option.

-q | --qos

Displays the QoS statistics including performance for each priority. This operand is optional with the **--perf** option.

-C | --config

Displays only the configuration information

-i | --ipsec

Displays IPSec status (enabled or disabled) and key if enabled. If IPSec is enabled and configured in legacy mode, the mode information is displayed in parenthesis. This option is valid for **portShow fciptunnel** only. This option is deprecated but still recognized. Use the **-C | --config** option instead.

-h | --hier

Displays the FCIP tunnel hierarchy listing basic circuit IDs and TCP connection information for the tunnel.

-s | --summary

Displays a summary view of the tunnel configuration parameters for a specific VE_Port. You can use the summary option with the **-perf** and the **- qos** option. When used with the **-perf** option, the summary option forces the **--circuit** option. Flags indicate ipsec-configured tunnels, legacy ipsec tunnels, and compression mode. Circuit flags indicate vlan tagging, crossport configuration, and ipv4 or ipv6 configuration.

-d | --detail

Displays a full view configuration details for all configured tunnels when used with the **all** port specifier. This view provides an alternative to specifying a specific VE_Port or to using the **--perf** option for a comprehensive view.

-l | --ip-address

Displays the IP addresses configured the specified circuits. You must use this option with either the **--summary** or the **--circuit** option. This option is deprecated but still recognized. Use the **-C | --config** option instead.

--hcl-status

Displays the HA status of the FCIP tunnel.

fcipcircuit

Displays FCIP circuit configuration and status. The following operands are supported with **portShow fcipcircuit**:

circuit_ID

Specifies a single circuit within the FCIP tunnel. The circuit ID is an integer value between 1 and 19 on the Brocade FX8-24. This operand is required.

-t | --tcp

Displays the TCP statistics for the specified circuit.

--reset

> Displays the current time-based statistics and then resets TCP statistics for the circuit to establish a baseline.

--lifetime

> Displays the entire lifetime statistics for FCIP Tunnels, Circuits and the associated TCP connections. This option will ignore any time based deltas that were created previously set using the **--reset** option.

-p | --perf

> Displays additional performance information for the specified FCIP circuit.

--lifetime

> Displays the entire lifetime statistics for FCIP Tunnels, Circuits and the associated TCP connections. This option will ignore any time based deltas that were created previously set using the **--reset** option.

-q | --qos

> Displays the QoS statistics including performance for each priority. This operand is optional with the **--perf** option.

-C | --config

> Displays only the configuration information

xtun

> Displays FICON and FCP emulation statistics and current runtime conditions for a specified set of parameters. The following arguments are supported:

-fcp

> Displays the SCSI FastWrite/Tape Pipelining command sub-menu when issued with a VE_Port number. The syntax for **-fcp** is as follows:
>
> **portshow xtun** [*slot/*]*ve_port* **-fcp** [*level*] [*command*] [*param*] [*options*]
>
> The following optional operands are supported with **-fcp** to display FCP emulation statistics and status information:

-help

> Displays the command usage. You must specify a VE_Port number to display the help functions, for example: **portshow xtun 7/12 -fcp -help**.

level

> Specifies the level for which information is displayed. You can specify one or more of the following levels. With each additional level, this command generates progressively more information.

-port

> Displays data at the port level.

-it

> Displays data at the Initiator Target (SID/DID) FCP level.

-itn

> Displays data at the Initiator Target nexus (SID/DID) level.

-itl

> Displays data at the Initiator Target LUN (SID/DID/LUN) level.

-twb

> Displays data at the Exchange (SID/DID/LUN/Exchange) level.

command

> Specifies the type of information to be displayed. This operand is optional; if omitted, the default (**-stats**) is used. You can specify more than one command option. Valid commands include the following:

-stats

> Displays FCP emulation statistics. This is the default display.

-info

> Displays general FCP emulation information.

-cfg

> Displays the FCP emulation configuration.

-dump

> Displays a raw data dump including data for all information types.

param

> Limits output to one or more of the following parameters, given the commands and levels specified with this command. This operand is optional; if omitted, output for all parameters is displayed. There is no default parameter.

-sid *SID*

    Displays output for the specified SID only.

-did *DID*

    Displays output for the specified DID only.

-lun *LUN*

    Displays output for the specified LUN only.

-timer

    Displays timer information only.

options

    Affects all levels and commands globally. Only one option is supported.

-zero

    Displays zero-valued statistics. Note that some commands may show zero-valued information regardless of whether or not this option is specified.

-ficon

    Displays sub-menu for FICON emulation display commands when issued with a VE_Port number. The syntax for **-ficon** is as follows:

    portshow xtun [*slot/*]*ve_port* **-ficon** [*command*] [*options*]

    The following optional commands are supported with **-ficon**; if omitted, the usage for all parameters is displayed. The **xtun -ficon** command options include displays for all types of FICON Emulation.

-help

    Displays the command usage. You must specify a VE_Port number to display the help functions, for example, **portshow xtun 7/12 -ficon -help**.

-stats

    Displays global FICON Emulation statistics for the tunnel including FICON XRC Emulation, FICON Tape Write, FICON Tape Read, FICON Teradata Write, and FICON Teradata Read statistics.

-fdpb *adrs*

    Displays FICON ports or a specific FICON Device Path Block.

-fchb *adrs*

>   Displays FICON logical partitions (LPARs) or a specific FICON Channel Control Block.

-fcub *adrs*

>   Displays FICON images (the same output as with **-images**) or a specific FICON Control Unit Block.

-images

>   Displays FICON images.

-fdcb *adrs*

>   Displays FICON devices or specific FICON Device Control Block.

-tapeperf

>   Starts the emulated Tape Read and Write performance monitor or displays the performance statistics.

>   when you first issue this command or any other performance monitor commands after a reboot, the command starts the performance monitor, takes a snapshot of current statistics, and saves them with a time stamp. When you issue the command again, it displays the time elapsed between the two iterations of the command and the average time delta statistics. A new time stamp and current statistics are saved as a basis for the next iteration.

-teraperf

>   Starts the emulated Teradata performance monitor or displays the performance statistics.

-printperf

>   Starts the emulated Printer performance monitor or displays the performance statistics.

-xrcperf

>   Starts the emulated XRC performance monitor or displays the performance statistics.

-structs

>   Displays FICON control block sizes.

-emul

>   Displays comprehensive FICON emulation statistics. Use one of the following options to display emulation statistics about a specific component.

-emulxrc

   Displays FICON XRC emulation statistics.

-emultape

   Displays FICON Tape emulation statistics.

-emultera

   Displays FICON Teradata emulation statistics.

-emulprint

   Displays FICON Printer emulation statistics.

-act

   Displays the current Active Exchange information.

options

   The following additional option is supported.

-clear

   Resets the specified statistics. This operand is optional; it requires a preceding
   command.

-mem *adrs length*

   Specifies the SE memory length in words to display. The valid range for *length* is 0 to
   1024.

-dram2

   Display the current usage of the dynamic memory allocator.

-pools

   Display the current free pool allocation (FPA) buffer usage.

-tcb

   Displays tunnel statistics.

-drshow

   Displays the current Descriptor Ring status

-smem

   Displays the current Shadow Memory data.

-rte

> Displays the current Routing Info SE memory.

--filter *filter_args*

> Filters the **portShow** output based on the specified filter arguments. The filter arguments can be specified in any combination or as a conditional statement using the logical AND or OR operator. A conditional statement can have up to 30 conditions. The following filter arguments are supported:

-ipaddr *ip_address*

> Filters the output based on the specified IP address.

-port [*slot/***]***port*

> Filters the output based on the specified port number.

-tcp-port *port*

> Filters the output based on the specified TCP port number.

-dp [*slot/***]dp#**

> Filters the output based on the specified dual processor ID.

-retransmits *value*

> Filters the output based on the retransmits exceeding specified value.

-rtt *ms*

> Filters the output based on the specified circuit round trip time in milliseconds.

-conn-cnt *value*

> Filters on tunnel and circuit objects where the connected count is greater than or equal to the specified *value*.

-bps *value***[k | m]**

> Filters the output based on bandwidth (bytes per second) exceeding the specified value. Specify **k** for KB/s and **m** for MB/s.

-or

> The logical OR operator.

-and

> The logical AND operator.

-default show | hide

> Sets the default display action if the specified filter statement is not supported. The default action is **hide**.

Examples

To display FCIP tunnel configuration parameters on the Brocade SX6 blade with Ficon enabled:

```
switch:admin> portshow fciptunnel 8/27 -d

 Tunnel: VE-Port:8/27 (idx:11, DP1)
 =====================================================
  Oper State            : Online
  TID                   : 219
  Flags                 : 0x00000000
  IP-Extension          : Disabled
  Compression           : None
  QoS BW Ratio          : 50% / 30% / 20%
  Fastwrite             : Enabled
  Tape Pipelining       : Read/Write
  IPSec                 : Disabled
  Load-Level (Cfg/Peer): Failover (Failover / Failover)
  Local WWN             : 10:00:00:05:33:e7:d2:13
  Peer WWN              : 10:00:00:05:33:65:a8:05
  RemWWN (config)       : 00:00:00:00:00:00:00:00
  FICON                 : Enabled
    XRC                 : Enabled
    Tape Pipelining     : Read/Write
    Read Block id       : Enabled
    Tin Tir             : Enabled
    DevAck              : Enabled
    Tera Read           : Disabled
    Tera Write          : Disabled
    Print               : Disabled
  FICON Max Read Pipe  : 32
  FICON Max Write Pipe : 32
  FICON Max Read Devs  : 16
  FICON Max Write Devs : 16
  FICON Write Timer    : 300
  FICON Write Chain    : 3200000
  FICON OXID Base      : 0x8000
  FICON Debug Flags    : 0x77c90000
  cfgmask               : 0x003fc7ff 0x40000208
  Flow Status           : 0
  ConCount/Duration     : 1 / 35m19s
  Uptime                : 50m13s
  Stats Duration        : 35m19s
 Receiver Stats       : 846212584 bytes / 4594438 pkts /  560.99 KBps Avg
  Sender Stats          : 216803637504 bytes / 29122536 pkts /  144.36
MBps Avg
  TCP Bytes In/Out      : 3135072280 / 223666014748
  ReTx/OOO/SloSt/DupAck: 0 / 0 / 0 / 0
```

```
    RTT (min/avg/max)    : 1 / 1 / 1 ms
    Wan Util             : 26.3%
    TxQ Util             : 0.0%
```

To display an FCIP tunnel with FICON disabled:

```
switch:admin> portshow fciptunnel 8/26 -d

 Tunnel: VE-Port:8/26 (idx:10, DP1)
 ======================================================
  Oper State          : Disabled
  TID                 : 218
  Flags               : 0x00000000
  IP-Extension        : Disabled
  Compression         : None
  QoS BW Ratio        : 50% / 30% / 20%
  Fastwrite           : Disabled
  Tape Pipelining     : Disabled
  IPSec               : Disabled
  Load-Level (Cfg/Peer): Failover (Failover / Failover)
  Local WWN           : 10:00:00:05:33:e7:d2:11
  Peer WWN            : 00:00:00:00:00:00:00:00
  RemWWN (config)     : 00:00:00:00:00:00:00:00
  cfgmask             : 0x000004ff 0x40000208
  Flow Status         : 0
  ConCount/Duration   : 0 / 1h6m7s
  Uptime              : 0s
  Stats Duration      : 0s
  Receiver Stats      : 0 bytes / 0 pkts /    0.00 Bps Avg
  Sender Stats        : 0 bytes / 0 pkts /    0.00 Bps Avg
  TCP Bytes In/Out    : 0 / 0
  ReTx/OOO/SloSt/DupAck: 0 / 0 / 0 / 0
  RTT (min/avg/max)   : 0 / 0 / 0 ms
  Wan Util            : 0.0%
  TxQ Util            : 0.0%
```

To display an FCIP tunnel with additional circuit information:

```
switch:admin> portshow fciptunnel 8/27 -d

 Tunnel: VE-Port:8/27 (idx:11, DP1)
 ======================================================
  Oper State          : Online
  TID                 : 219
  Flags               : 0x00000000
  IP-Extension        : Disabled
  Compression         : None
  QoS BW Ratio        : 50% / 30% / 20%
  Fastwrite           : Enabled
  Tape Pipelining     : Read/Write
  IPSec               : Disabled
  Load-Level (Cfg/Peer): Failover (Failover / Failover)
  Local WWN           : 10:00:00:05:33:e7:d2:13
  Peer WWN            : 10:00:00:05:33:65:a8:05
  RemWWN (config)     : 00:00:00:00:00:00:00:00
```

```
            FICON               : Enabled
              XRC               : Enabled
              Tape Pipelining   : Read/Write
              Read Block id     : Enabled
              Tin Tir           : Enabled
              DevAck            : Enabled
              Tera Read         : Disabled
              Tera Write        : Disabled
              Print             : Disabled
            FICON Max Read Pipe  : 32
            FICON Max Write Pipe : 32
            FICON Max Read Devs  : 16
            FICON Max Write Devs : 16
            FICON Write Timer    : 300
            FICON Write Chain    : 3200000
            FICON OXID Base      : 0x8000
            FICON Debug Flags    : 0x77c90000
            cfgmask              : 0x003fc7ff 0x40000208
            Flow Status          : 0
            ConCount/Duration    : 1 / 35m19s
            Uptime               : 50m13s
            Stats Duration       : 35m19s
           Receiver Stats       : 846212584 bytes / 4594438 pkts /  560.99 KBps Avg
            Sender Stats         : 216803637504 bytes / 29122536 pkts /  144.36
       MBps Avg
            TCP Bytes In/Out     : 3135072280 / 223666014748
            ReTx/OOO/SloSt/DupAck: 0 / 0 / 0 / 0
            RTT (min/avg/max)    : 1 / 1 / 1 ms
            Wan Util             : 26.3%
            TxQ Util             : 0.0%
```

To display additional performance parameters on tunnel 1/12 (add -c to display all circuits):

```
switch:admin> portshow fciptunnel 8/27 -c

 Tunnel: VE-Port:8/27 (idx:11, DP1)
 ====================================================
  Oper State           : Online
  TID                  : 219
  Flags                : 0x00000000
  IP-Extension         : Disabled
  Compression          : None
  QoS BW Ratio         : 50% / 30% / 20%
  Fastwrite            : Enabled
  Tape Pipelining      : Read/Write
  IPSec                : Disabled
  Load-Level (Cfg/Peer): Failover (Failover / Failover)
  Local WWN            : 10:00:00:05:33:e7:d2:13
  Peer WWN             : 10:00:00:05:33:65:a8:05
  RemWWN (config)      : 00:00:00:00:00:00:00:00
  FICON                : Enabled
    XRC                : Enabled
    Tape Pipelining    : Read/Write
    Read Block id      : Enabled
```

```
      Tin Tir            : Enabled
      DevAck             : Enabled
      Tera Read          : Disabled
      Tera Write         : Disabled
      Print              : Disabled
   FICON Max Read Pipe   : 32
   FICON Max Write Pipe  : 32
   FICON Max Read Devs   : 16
   FICON Max Write Devs  : 16
   FICON Write Timer     : 300
   FICON Write Chain     : 3200000
   FICON OXID Base       : 0x8000
   FICON Debug Flags     : 0x77c90000
   cfgmask               : 0x003fc7ff 0x40000208
   Flow Status           : 0
   ConCount/Duration     : 1 / 33m59s
   Uptime                : 48m53s
   Stats Duration        : 33m59s
  Receiver Stats      : 811663752 bytes / 4406845 pkts /  554.94 KBps Avg
  Sender Stats        : 207944106140 bytes / 27935226 pkts /  143.31
MBps Avg
   TCP Bytes In/Out      : 3005648720 / 214490692956
   ReTx/OOO/SloSt/DupAck: 0 / 0 / 0 / 0
   RTT (min/avg/max)     : 1 / 1 / 1 ms
   Wan Util              : 24.3%
   TxQ Util              : 0.0%

  Circuit 8/27.0 (DP1)
  =======================================================
   Admin/Oper State      : Enabled / Online
   Flags                 : 0x00000000
   IP Addr (L/R)         : 192.168.2.170 8/ge2 <-> 192.168.2.164
   HA IP Addr (L/R)      : 192.168.2.70 8/ge2 <-> 192.168.2.64
   Configured Comm Rates: 2000000 / 5000000 kbps
   Peer Comm Rates       : 2000000 / 5000000 kbps
   Actual Comm Rates     : 2000000 / 5000000 kbps
   Keepalive (Cfg/Peer) : 1000 (1000 / 1000) ms
   Metric                : 0
   Connection Type       : Default
   ARL-Type              : Reset
   PMTU                  : Disabled
   SLA                   : (none)
   Failover Group        : 0
   VLAN-ID               : NONE
   L2Cos (FC:h/m/l)      : 0 / 0 / 0 (Ctrl:0)
   L2Cos (IP:h/m/l)      : 0 / 0 / 0
   DSCP (FC:h/m/l)       : 0 / 0 / 0 (Ctrl:0)
   DSCP (IP:h/m/l)       : 0 / 0 / 0
   cfgmask               : 0x40000000 0x00013c2f
   Flow Status           : 0
   ConCount/Duration     : 1 / 33m59s
   Uptime                : 48m53s
   Stats Duration        : 33m59s
```

```
  Receiver Stats        : 405802244 bytes / 2203254 pkts /  277.42 KBps Avg
   Sender Stats          : 103969139456 bytes / 13967446 pkts /    71.69
MBps Avg
   TCP Bytes In/Out      : 1502340852 / 107217064500
   ReTx/OOO/SloSt/DupAck: 0 / 0 / 0 / 0
   RTT (min/avg/max)     : 1 / 1 / 1 ms
   Wan Util              : 24.5%

  Circuit 8/27.1 (DP1)
  ====================================================
   Admin/Oper State      : Enabled / Online
   Flags                 : 0x00000000
   IP Addr (L/R)         : 192.168.3.170 8/ge3 <-> 192.168.3.164
   HA IP Addr (L/R)      : 192.168.3.70 8/ge3 <-> 192.168.3.64
   Configured Comm Rates: 2000000 / 5000000 kbps
   Peer Comm Rates       : 2000000 / 5000000 kbps
   Actual Comm Rates     : 2000000 / 5000000 kbps
   Keepalive (Cfg/Peer) : 1000 (1000 / 1000) ms
   Metric                : 0
   Connection Type       : Default
   ARL-Type              : Reset
   PMTU                  : Disabled
   SLA                   : (none)
   Failover Group        : 0
   VLAN-ID               : NONE
   L2Cos (FC:h/m/l)      : 0 / 0 / 0 (Ctrl:0)
   L2Cos (IP:h/m/l)      : 0 / 0 / 0
   DSCP (FC:h/m/l)       : 0 / 0 / 0 (Ctrl:0)
   DSCP (IP:h/m/l)       : 0 / 0 / 0
   cfgmask               : 0x40000000 0x00013c2f
   Flow Status           : 0
   ConCount/Duration     : 1 / 33m59s
   Uptime                : 48m53s
   Stats Duration        : 33m59s
  Receiver Stats        : 405861508 bytes / 2203591 pkts /  277.52 KBps Avg
   Sender Stats          : 103974966684 bytes / 13967780 pkts /    71.62
MBps Avg
   TCP Bytes In/Out      : 1503305492 / 107273625304
   ReTx/OOO/SloSt/DupAck: 0 / 0 / 0 / 0
   RTT (min/avg/max)     : 1 / 1 / 1 ms
   Wan Util              : 24.1%
```

To display TCP connections for the circuits on the tunnel:

```
switch:admin> portshow fciptunnel 8/27 -circuit

 Tunnel: VE-Port:8/27 (idx:11, DP1)
 ====================================================
  Oper State            : Online
  TID                   : 219
  Flags                 : 0x00000000
  IP-Extension          : Disabled
  Compression           : None
  QoS BW Ratio          : 50% / 30% / 20%
```

```
    Fastwrite            : Enabled
    Tape Pipelining      : Read/Write
    IPSec                : Disabled
    Load-Level (Cfg/Peer): Failover (Failover / Failover)
    Local WWN            : 10:00:00:05:33:e7:d2:13
    Peer WWN             : 10:00:00:05:33:65:a8:05
    RemWWN (config)      : 00:00:00:00:00:00:00:00
    FICON                : Enabled
      XRC                : Enabled
      Tape Pipelining    : Read/Write
      Read Block id      : Enabled
      Tin Tir            : Enabled
      DevAck             : Enabled
      Tera Read          : Disabled
      Tera Write         : Disabled
      Print              : Disabled
    FICON Max Read Pipe  : 32
    FICON Max Write Pipe : 32
    FICON Max Read Devs  : 16
    FICON Max Write Devs : 16
    FICON Write Timer    : 300
    FICON Write Chain    : 3200000
    FICON OXID Base      : 0x8000
    FICON Debug Flags    : 0x77c90000
    cfgmask              : 0x003fc7ff 0x40000208
    Flow Status          : 0
    ConCount/Duration    : 1 / 36m53s
    Uptime               : 51m46s
    Stats Duration       : 36m52s
   Receiver Stats        : 888449704 bytes / 4823789 pkts /  518.43 KBps Avg
    Sender Stats         : 227615878740 bytes / 30565366 pkts /  133.07
MBps Avg
    TCP Bytes In/Out     : 3293193644 / 234818572912
    ReTx/OOO/SloSt/DupAck: 0 / 0 / 0 / 0
    RTT (min/avg/max)    : 1 / 1 / 1 ms
    Wan Util             : 31.1%
    TxQ Util             : 0.0%

  Circuit 8/27.0 (DP1)
  ===================================================
    Admin/Oper State     : Enabled / Online
    Flags                : 0x00000000
    IP Addr (L/R)        : 192.168.2.170 8/ge2 <-> 192.168.2.164
    HA IP Addr (L/R)     : 192.168.2.70 8/ge2 <-> 192.168.2.64
    Configured Comm Rates: 2000000 / 5000000 kbps
    Peer Comm Rates      : 2000000 / 5000000 kbps
    Actual Comm Rates    : 2000000 / 5000000 kbps
    Keepalive (Cfg/Peer) : 1000 (1000 / 1000) ms
    Metric               : 0
    Connection Type      : Default
    ARL-Type             : Reset
    PMTU                 : Disabled
    SLA                  : (none)
```

```
     Failover Group        : 0
     VLAN-ID               : NONE
     L2Cos (FC:h/m/l)      : 0 / 0 / 0 (Ctrl:0)
     L2Cos (IP:h/m/l)      : 0 / 0 / 0
     DSCP (FC:h/m/l)       : 0 / 0 / 0 (Ctrl:0)
     DSCP (IP:h/m/l)       : 0 / 0 / 0
     cfgmask               : 0x40000000 0x00013c2f
     Flow Status           : 0
     ConCount/Duration     : 1 / 36m53s
     Uptime                : 51m47s
     Stats Duration        : 36m53s
    Receiver Stats     : 444186300 bytes / 2411679 pkts /  259.59 KBps Avg
    Sender Stats          : 113803731376 bytes / 15282510 pkts /   66.53
MBps Avg
    TCP Bytes In/Out      : 1646503476 / 117412356592
    ReTx/OOO/SloSt/DupAck: 0 / 0 / 0 / 0
    RTT (min/avg/max)     : 1 / 1 / 1 ms
    Wan Util              : 31.4%

    TCP Connection 8/27.0 HA-Type:Local-Backup Pri:Low Conn:0x055665f4
    ===================================================
     Local / Remote Port      : 3225 / 55379
     Duration                 : 36m52s
     MSS                      : 1460 bytes
     ARL Min / Cur / Max      : 33328 / 33328 / 833328
     ARL Reset Algo           : Reset
     Send Window
      Size / Scale            : 20832256 / 9
      Slow Start Threshold    : 16777216
      Congestion Window       : 16778676
      Pkts InFlight           : 0
     Recv Window
      Size / Scale            : 20832768 (Max:20832768) / 9
     SendQ Nxt / Min / Max    : 0x8e5c8b31 / 0x8e5c8b31 / 0x8e5c8b31
     RecvQ Nxt / Min / Max    : 0x0e776252 / 0x0e776252 / 0x0fb54402
     RecvQ Pkts               : 0
     Sender Stats
      Sent Bytes / Pkts       : 510608 / 5742
      Unacked Data            : 0
      Retransmits Slow / Fast : 0 / 0 (High:0)
      SlowStart               : 0
     Receiver Stats
      Recv Bytes / Pkts       : 536792 / 5742
      Out-of-Order            : 0 (High:0)
      Duplicate ACKs          : 0
     RTT / Variance (High)    : 0 ms (0 ms) / 0 ms (0 ms)
[output truncated]
```

To display the time based set of statistics:

```
switch:admin> portshow fciptunnel 8/27 -cp

 Tunnel: VE-Port:8/27 (idx:11, DP1)
   ===================================================
```

```
     Oper State          : Online
     TID                 : 219
     Flags               : 0x00000000
     IP-Extension        : Disabled
     Compression         : None
     QoS BW Ratio        : 50% / 30% / 20%
     Fastwrite           : Enabled
     Tape Pipelining     : Read/Write
     IPSec               : Disabled
     Load-Level (Cfg/Peer): Failover (Failover / Failover)
     Local WWN           : 10:00:00:05:33:e7:d2:13
     Peer WWN            : 10:00:00:05:33:65:a8:05
     RemWWN (config)     : 00:00:00:00:00:00:00:00
     FICON               : Enabled
       XRC               : Enabled
       Tape Pipelining   : Read/Write
       Read Block id     : Enabled
       Tin Tir           : Enabled
       DevAck            : Enabled
       Tera Read         : Disabled
       Tera Write        : Disabled
       Print             : Disabled
     FICON Max Read Pipe  : 32
     FICON Max Write Pipe : 32
     FICON Max Read Devs  : 16
     FICON Max Write Devs : 16
     FICON Write Timer    : 300
     FICON Write Chain    : 3200000
     FICON OXID Base      : 0x8000
     FICON Debug Flags    : 0x77c90000
     cfgmask             : 0x003fc7ff 0x40000208
     Flow Status         : 0
     ConCount/Duration   : 1 / 38m38s
     Uptime              : 53m32s
     Stats Duration      : 38m38s
    Receiver Stats       : 4495871308 bytes / 5361838 pkts /   88.46 MBps
   Avg
    Sender Stats         : 230389776820 bytes / 31031771 pkts /   14.02
   MBps Avg
    TCP Bytes In/Out      : 7012468568 / 237786788876
    ReTx/OOO/SloSt/DupAck: 0 / 0 / 0 / 0
    RTT (min/avg/max)    : 1 / 1 / 1 ms
    Wan Util             : 3.2%
    TxQ Util             : 0.0%

   Circuit 8/27.0 (DP1)
   ====================================================
    Admin/Oper State     : Enabled / Online
    Flags                : 0x00000000
    IP Addr (L/R)        : 192.168.2.170 8/ge2 <-> 192.168.2.164
    HA IP Addr (L/R)     : 192.168.2.70 8/ge2 <-> 192.168.2.64
    Configured Comm Rates: 2000000 / 5000000 kbps
    Peer Comm Rates      : 2000000 / 5000000 kbps
```

```
Actual Comm Rates     : 2000000 / 5000000 kbps
Keepalive (Cfg/Peer) : 1000 (1000 / 1000) ms
Metric                : 0
Connection Type       : Default
ARL-Type              : Reset
PMTU                  : Disabled
SLA                   : (none)
Failover Group        : 0
VLAN-ID               : NONE
L2Cos (FC:h/m/l)      : 0 / 0 / 0 (Ctrl:0)
L2Cos (IP:h/m/l)      : 0 / 0 / 0
DSCP (FC:h/m/l)       : 0 / 0 / 0 (Ctrl:0)
DSCP (IP:h/m/l)       : 0 / 0 / 0
cfgmask               : 0x40000000 0x00013c2f
Flow Status           : 0
ConCount/Duration     : 1 / 38m38s
Uptime                : 53m33s
Stats Duration        : 38m38s
Receiver Stats        : 2250048596 bytes / 2680666 pkts /   44.28 MBps
Avg
Sender Stats          : 115191206632 bytes / 15515761 pkts /    7.02
MBps Avg
TCP Bytes In/Out      : 3497989220 / 118885996076
ReTx/OOO/SloSt/DupAck: 0 / 0 / 0 / 0
RTT (min/avg/max)     : 1 / 1 / 1 ms
Wan Util              : 3.2%

 Circuit 8/27.1 (DP1)
 =====================================================
 Admin/Oper State      : Enabled / Online
 Flags                 : 0x00000000
 IP Addr (L/R)         : 192.168.3.170 8/ge3 <-> 192.168.3.164
 HA IP Addr (L/R)      : 192.168.3.70 8/ge3 <-> 192.168.3.64
 Configured Comm Rates: 2000000 / 5000000 kbps
 Peer Comm Rates       : 2000000 / 5000000 kbps
 Actual Comm Rates     : 2000000 / 5000000 kbps
 Keepalive (Cfg/Peer) : 1000 (1000 / 1000) ms
 Metric                : 0
 Connection Type       : Default
 ARL-Type              : Reset
 PMTU                  : Disabled
 SLA                   : (none)
 Failover Group        : 0
 VLAN-ID               : NONE
 L2Cos (FC:h/m/l)      : 0 / 0 / 0 (Ctrl:0)
 L2Cos (IP:h/m/l)      : 0 / 0 / 0
 DSCP (FC:h/m/l)       : 0 / 0 / 0 (Ctrl:0)
 DSCP (IP:h/m/l)       : 0 / 0 / 0
 cfgmask               : 0x40000000 0x00013c2f
 Flow Status           : 0
 ConCount/Duration     : 1 / 38m38s
 Uptime                : 53m33s
 Stats Duration        : 38m38s
```

```
  Receiver Stats       : 2245929472 bytes / 2681187 pkts /    44.17 MBps
Avg
  Sender Stats         : 115198570188 bytes / 15516010 pkts /     7.00
MBps Avg
  TCP Bytes In/Out      : 3514474436 / 118900788176
  ReTx/OOO/SloSt/DupAck: 0 / 0 / 0 / 0
  RTT (min/avg/max)    : 1 / 1 / 1 ms
  Wan Util             : 3.2%
```

To display the entire lifetime statistics for FCIP Tunnels, Circuits and the associated TCP connections:

```
switch:admin> portshow fciptunnel 8/27 -ctL

 Tunnel: VE-Port:8/27 (idx:11, DP1)
 ====================================================
  Oper State         : Online
  TID                : 219
  Flags              : 0x00000000
  IP-Extension       : Disabled
  Compression        : None
  QoS BW Ratio       : 50% / 30% / 20%
  Fastwrite          : Enabled
  Tape Pipelining    : Read/Write
  IPSec              : Disabled
  Load-Level (Cfg/Peer): Failover (Failover / Failover)
  Local WWN          : 10:00:00:05:33:e7:d2:13
  Peer WWN           : 10:00:00:05:33:65:a8:05
  RemWWN (config)    : 00:00:00:00:00:00:00:00
  FICON              : Enabled
    XRC              : Enabled
    Tape Pipelining  : Read/Write
    Read Block id    : Enabled
    Tin Tir          : Enabled
    DevAck           : Enabled
    Tera Read        : Disabled
    Tera Write       : Disabled
    Print            : Disabled
  FICON Max Read Pipe : 32
  FICON Max Write Pipe : 32
  FICON Max Read Devs : 16
  FICON Max Write Devs : 16
  FICON Write Timer   : 300
  FICON Write Chain   : 3200000
  FICON OXID Base     : 0x8000
  FICON Debug Flags   : 0x77c90000
  cfgmask             : 0x003fc7ff 0x40000208
  Flow Status         : 0
  ConCount/Duration   : 2 / 1h15m52s
  Uptime              : 54m58s
  Stats Duration      : 54m58s
  Receiver Stats      : 12183885664 bytes / 7267213 pkts /    86.35
MBps Avg
```

```
  Sender Stats        : 272470084404 bytes / 37117428 pkts /    13.91
MBps Avg
  TCP Bytes In/Out    : 15336120428 / 281269480752
  ReTx/OOO/SloSt/DupAck: 35 / 0 / 20 / 0
  RTT (min/avg/max)   : 1 / 1 / 11 ms
  Wan Util            : 3.2%
  TxQ Util            : 0.0%

 Circuit 8/27.0 (DP1)
 ======================================================
  Admin/Oper State    : Enabled / Online
  Flags               : 0x00000000
  IP Addr (L/R)       : 192.168.2.170 8/ge2 <-> 192.168.2.164
  HA IP Addr (L/R)    : 192.168.2.70 8/ge2 <-> 192.168.2.64
  Configured Comm Rates: 2000000 / 5000000 kbps
  Peer Comm Rates     : 2000000 / 5000000 kbps
  Actual Comm Rates   : 2000000 / 5000000 kbps
  Keepalive (Cfg/Peer) : 1000 (1000 / 1000) ms
  Metric              : 0
  Connection Type     : Default
  ARL-Type            : Reset
  PMTU                : Disabled
  SLA                 : (none)
  Failover Group      : 0
  VLAN-ID             : NONE
  L2Cos (FC:h/m/l)    : 0 / 0 / 0 (Ctrl:0)
  L2Cos (IP:h/m/l)    : 0 / 0 / 0
  DSCP (FC:h/m/l)     : 0 / 0 / 0 (Ctrl:0)
  DSCP (IP:h/m/l)     : 0 / 0 / 0
  cfgmask             : 0x40000000 0x00013c2f
  Flow Status         : 0
  ConCount/Duration   : 2 / 1h15m52s
  Uptime              : 54m59s
  Stats Duration      : 54m59s
  Receiver Stats      : 6093629652 bytes / 3633882 pkts /   43.17 MBps
Avg
  Sender Stats        : 136234172252 bytes / 18558931 pkts /    6.94
MBps Avg
  TCP Bytes In/Out    : 9506571664 / 191565449080
  ReTx/OOO/SloSt/DupAck: 33 / 0 / 18 / 0
  RTT (min/avg/max)   : 1 / 1 / 11 ms
  Wan Util            : 3.2%

 TCP Connection 8/27.0 HA-Type:Local-Backup Pri:Low Conn:0x055665f4
 ======================================================
  Local / Remote Port : 3225 / 55379
  Duration            : 46m42s
  MSS                 : 1460 bytes
  ARL Min / Cur / Max : 33328 / 33328 / 833328
  ARL Reset Algo      : Reset
  Send Window
   Size / Scale       : 20832256 / 9
   Slow Start Threshold : 16777216
```

```
         Congestion Window      : 16778676
          Pkts InFlight         : 0
         Recv Window
          Size / Scale          : 20832768 (Max:20832768) / 9
         SendQ Nxt / Min / Max   : 0x8e5cea51 / 0x8e5cea51 / 0x8e5cea51
         RecvQ Nxt / Min / Max   : 0x0e77cb0a / 0x0e77cb0a / 0x0fb5acba
         RecvQ Pkts              : 0
         Sender Stats
          Sent Bytes / Pkts      : 650880 / 7292
          Unacked Data           : 0
          Retransmits Slow / Fast : 0 / 0 (High:0)
          SlowStart              : 0
         Receiver Stats
          Recv Bytes / Pkts      : 682504 / 7292
          Out-of-Order           : 0 (High:0)
          Duplicate ACKs         : 0
         RTT / Variance (High)    : 0 ms (0 ms) / 0 ms (0 ms)
```

To display IPSec parameters on an IPSec-enabled tunnel:

```
switch:admin> portshow fciptunnel 24 -i

Tunnel: VE-Port:24 (idx:0, DP0)
 ====================================================
  Oper State          : Enabled
  TID                 : 24
  Flags               : 0x00000000
  IP-Extension        : Disabled
  Compression         : None
  QoS BW Ratio        : 50% / 30% / 20%
  Fastwrite           : Disabled
  Tape Pipelining     : Disabled
  IPSec               : Enabled
  IPSec-Policy        : myPolicy1
  Load-Level (Cfg/Peer): Failover (Failover / Failover)
  Local WWN           : 10:00:00:05:33:65:82:c8
  Peer WWN            : 10:00:00:05:33:65:84:08
  RemWWN (config)     : 00:00:00:00:00:00:00:00
  cfgmask             : 0x0000001f 0x4000020c
  Flow Status         : 0
  ConCount/Duration   : 2 / 29m9s
  Uptime              : 26s
  Stats Duration      : 26s
  Receiver Stats      : 28260 bytes / 164 pkts /  941.00 Bps Avg
  Sender Stats        : 28096 bytes / 165 pkts /  935.00 Bps Avg
  TCP Bytes In/Out    : 190584 / 236132
  ReTx/OOO/SloSt/DupAck: 0 / 0 / 0 / 0
  RTT (min/avg/max)   : 1 / 1 / 1 ms
  Wan Util            : 0.0%
  TxQ Util            : 0.0%
```

To display the FCIP tunnel hierarchy on the Brocade FX8-24:

```
switch:admin> portshow fciptunnel 1/12--hier
FCIP Tunnel 1/12
```

```
| High Level Tunnel Stats:
|   Operational Status: Up
|   Connected Count: 1
|   Max Comm Rate: 2500000
|   Compression Ratio: 1 : 1
|   Compressed Bytes: 0
|   Uncompressed Bytes: 0
|   Bytes In: 68942140
|     Bytes In Avg: 85
|   Bytes Out: 30983544
|     Bytes Out Avg: 16
|   Packets In: 92126
|     Packets In Avg: 0
|   Packets Out: 70728
|   Packets Out Avg: 0
| Aggregate TCP Stats:
|   TCP Bytes In: 842506236
|   TCP Bytes Out: 1446465008
|   TCP Packets In: 16072571
|   TCP Packets Out: 16063156
|   Retransmits: 0
|   Longest RTT: 0 ms
|   Out Of Sequence: 0
|   Slow Starts: 0
| Circuit Count: 2
| TCP Count: 24
| Circuits:
|--> Circuit 1/12.1
|     |   High Level Circuit Stats:
|     |   Operational Status: Up
|     |     Connected Count: 1
|     |     Max Comm Rate: 2500000
|     |     Bytes In: 712
|     |       Bytes In Avg: 0
|     |     Bytes Out: 700
|     |       Bytes Out Avg: 0
|     |     Packets In: 4
|     |       Packets In Avg: 0
|     |     Packets Out: 5
|     |     Packets Out Avg: 0
|     |   Aggregate TCP Stats:
|     |     TCP Bytes In: 68632640
|     |     TCP Bytes Out: 174210892
|     |     TCP Packets In: 2639463
|     |     TCP Packets Out: 2639467
|     |     Retransmits: 0
|     |     Longest RTT: 0 ms
|     |     Out Of Sequence: 0
|     |     Slow Starts: 0
|     |   TCP Count: 12
|     |   TCP Connections:
|     |---> TCP Conn 1/12.1:15240914
|     |---> TCP Conn 1/12.1:15240915
```

```
     |     |---> TCP Conn 1/12.1:15240916
     |     |---> TCP Conn 1/12.1:15241504
     |     |---> TCP Conn 1/12.1:15241505
     |     |---> TCP Conn 1/12.1:15241506
     |     |---> TCP Conn 1/12.1:15241307
     |     |---> TCP Conn 1/12.1:15241308
     |     |---> TCP Conn 1/12.1:15241309
     |     |---> TCP Conn 1/12.1:15241111
     |     |---> TCP Conn 1/12.1:15241111
     |     |---> TCP Conn 1/12.1:15241112
     |--> Circuit 1/12.0
     |      | High Level Circuit Stats:
     |      | Operational Status: Up
     |      |   Connected Count: 1
     |      |   Max Comm Rate: 2500000
     |      |   Bytes In: 68941428
     |      |     Bytes In Avg: 82
     |      |   Bytes Out: 30982844
     |      |     Bytes Out Avg: 11
     |      |   Packets In: 92122
     |      |     Packets In Avg: 0
     |      |   Packets Out: 70723
     |      |   Packets Out Avg: 0
     |      | Aggregate TCP Stats:
     |      |   TCP Bytes In: 773873596
     |      |   TCP Bytes Out: 1272254116
     |      |   TCP Packets In: 13433108
     |      |   TCP Packets Out: 13423689
     |      |   Retransmits: 0
     |      |   Longest RTT: 0 ms
     |      |   Out Of Sequence: 0
     |      |   Slow Starts: 0
     |      | TCP Count: 12
     |      | TCP Connections:
     |---> TCP Conn 1/12.0:15240899
     |---> TCP Conn 1/12.0:15240900
     |---> TCP Conn 1/12.0:15240901
     |---> TCP Conn 1/12.0:15241489
     |---> TCP Conn 1/12.0:15241490
     |---> TCP Conn 1/12.0:15241491
     |---> TCP Conn 1/12.0:15241292
     |---> TCP Conn 1/12.0:15241293
     |---> TCP Conn 1/12.0:15241294
     |---> TCP Conn 1/12.0:15241096
     |---> TCP Conn 1/12.0:15241097
     |---> TCP Conn 1/12.0:15241097
```

To display a tunnel on a Brocade FX8-24 with automatic compression enabled:

```
switch:admin> portshow fciptunnel 1/21
Tunnel ID: 1/21
   Tunnel Description:
   Admin Status: Enabled
   Oper Status: Up
```

```
            Compression: On (Auto-Mode)
            Fastwrite: Off
            Tape Acceleration: Off
            TPerf Option: Off
            IPSec: Disabled
            QoS Percentages: High 50%, Med 30%, Low 20%
            Remote WWN: Not Configured
            Local WWN: 10:00:00:05:1e:52:fe:00
            Peer WWN: 10:00:00:05:1e:39:a4:76
            Circuit Count: 2
            Flags: 0x00000000
            FICON: Off
```

To display a tunnel on a Brocade FX8-24 with automatic compression enabled in summary view (The "A" flag indicates Auto-Mode:

```
switch:admin> portshow fciptunnel 1/21 -s
------------------------------------------------------------------------
--
Tunnel Circuit OpStatus Flags Uptime TxMBps RxMBps ConnCnt CommRt Met/G
------------------------------------------------------------------------
--
1/21   -        Up    A------ 31m29s  0.00   0.00    2      -        -/-
1/21   0 1/xge1 Up    ---4--s 31m29s  0.00   0.00    2      2500/2500 0/-
1/21   1 1/xge0 Up    ---4-xs 31m29s  0.00   0.00    2      2500/2500 1/-
------------------------------------------------------------------------
--
Flags:  tunnel: c=compression m=moderate compression
                 a=aggressive compression
               A=Auto compression f=fastwrite t=Tapepipelining F=FICON
                 T=TPerf i=IPSec l=IPSec Legacy
 Flags: circuit: s=sack v=VLAN Tagged x=crossport 4=IPv4 6=IPv6
                 L=Listener I=Initiator
```

To display a tunnel on a Brocade FX8-24 with IPSec enabled in legacy mode:

```
switch:admin> portshow fciptunnel 1/12
---------------------------------------------
Tunnel ID: 1/12
   Tunnel Description:
   Admin Status: Enabled
   Oper Status: Up
   Compression: Off
   Fastwrite: Off
   Tape Acceleration: Off
   TPerf Option: Off
   IPSec: Enabled (legacy)
   QoS Percentages: High 50%, Med 30%, Low 20%
   Remote WWN: Not Configured
   Local WWN: 10:00:00:05:1e:52:fe:00
   Peer WWN: 10:00:00:05:1e:39:a4:76
   Circuit Count: 1
   Flags: 0x00000000
   FICON: Off
```

To display a summary view of the FCIP tunnel and circuits showing then legacy flag for the tunnel:

```
switch:admin> portshow fciptunnel 8/12 -s
----------------------------------------------------------------------
--
Tunnel Circuit OpStatus Flags Uptime TxMBps RxMBps ConnCnt CommRt Met/G
----------------------------------------------------------------------
--
8/12  -          InProg  cft--l- 3m3s  0.00    0.00    1      -        -
8/12  0 8/xge1 InProg  ---4v-s 3m3s  0.00    0.00    1   5000/5000  0/-
8/12  1 8/xge0 InProg  ---4-xs 3m0s  0.00    0.00    1   1000/1000  0/-
8/12  2 8/xge1 InProg  ---6--s 3m0s  0.00    0.00    1   2000/2000  0/-
----------------------------------------------------------------------
--
 Flags:  tunnel: c=compression m=moderate compression
                   a=aggressive compression
             A=Auto compression f=fastwrite t=Tapepipelining F=FICON
                 T=TPerf i=IPSec l=IPSec Legacy
 Flags: circuit: s=sack v=VLAN Tagged x=crossport 4=IPv4 6=IPv6
```

To display a summary view of an FCIP tunnel and its circuits on the Brocade FX8-24 with the --perf option :

```
switch:admin> portshow fciptunnel 7/12 --summary --perf
----------------------------------------------------------------------
-
Tunnel Circuit TxMBps RxMBps ComRatio RTT(ms) ReTx  OutOfSeq SlowStart
----------------------------------------------------------------------
-
1/22  -          0.00  0.00  1.00:1     -       0         0          0
1/22  0 1/xge0 0.00  0.00    -        0       0         0          0
1/22  1 1/xge1 0.00  0.00    -        0       0         0          0
----------------------------------------------------------------------
-
```

To display a summary view of the QoS configuration on FCIP tunnels and circuits on the Brocade FX8-24:

```
switch:admin> portshow fciptunnel 7/12 --summary --qos
-------- ---------------------------------------------------------
Tunnel  Circuit Priority  Uptime    Tx Bps   Rx Bps TxPkts/s RxPkts/s
------- --------------- ----------------- - ----------------------
1/22    -       -         2d23h10m  0.00     0.00     0.00     0.00
1/22    -       F-Class 2d23h10m  0.00     0.00     0.00     0.00
1/22    -       High    2d23h10m  0.00     0.00     0.00     0.00
1/22    -       Medium  2d23h10m  0.00     0.00     0.00     0.00
1/22    -       Low     2d23h10m  0.00     0.00     0.00     0.00
----- --------------- -----------------------------------------

switch:admin> portshow fciptunnel 7/12 --summary --qos --circuit
----------------------------------------------------------------------
 Tunnel Circuit  Priority  Uptime   Tx Bps   Rx Bps TxPkts/s RxPkts/s
----------------------------------------------------------------------
 1/22   -        -         2d23h11m  0.00     0.00     0.00     0.00
```

```
1/22   -           F-Class  2d23h11m   0.00     0.00     0.00     0.00
1/22   -           High     2d23h11m   0.00     0.00     0.00     0.00
1/22   -           Medium   2d23h11m   0.00     0.00     0.00     0.00
1/22   -           Low      2d23h11m   0.00     0.00     0.00     0.00
1/22   0 1/xge0 -           2d23h11m   0.00     0.00     0.00     0.00
1/22   0 1/xge0 F-Class     2d23h11m   0.00     0.00     0.00     0.00
1/22   0 1/xge0 Medium      2d23h11m   0.00     0.00     0.00     0.00
1/22   0 1/xge0 Low         2d23h11m   0.00     0.00     0.00     0.00
1/22   1 1/xge1 -           2d23h11m   0.00     0.00     0.00     0.00
1/22   1 1/xge1 F-Class     2d23h11m   0.00     0.00     0.00     0.00
1/22   1 1/xge1 High        2d23h11m   0.00     0.00     0.00     0.00
1/22   1 1/xge1 Medium      2d23h11m   0.00     0.00     0.00     0.00
1/22   1 1/xge1 Low         2d23h11m   0.00     0.00     0.00     0.00
------------------------------------------------------------------
```

To display the IP addresses configured for the circuits on the Brocade FX8-24:

```
switch:admin> portshow fciptunnel --circuit --config
 Tunnel Circuit    AdminSt Flags    Local IP             Remote Ip
----------------------------------------------------------------------
-----------
 8/12   -          Enabled -------
 8/12   0 8/xge1   Enabled ---4--s 192.168.0.16         192.168.0.116
 8/24   -          Enabled -------
 8/24   0 8/xge0   Enabled ---4--s 192.168.0.11         192.168.0.111
----------------------------------------------------------------------
-----------
 Flags (tunnel): c=compression m=moderate compression a=aggressive
compression
               A=Auto compression f=fastwrite t=Tapepipelining F=FICON
                 T=TPerf i=IPSec l=IPSec Legacy
    (circuit): s=sack v=VLAN Tagged x=crossport 4=IPv4 6=IPv6
                 L=Listener I=Initiator
```

To display all FCIP circuits on the Brocade FX8-24:

```
switch:admin> portshow fcipcircuit all
----------------------------------------------------------------------
---
Tunnel Circuit OpStatus Flags  Uptime TxMBps RxMBps ConnCnt CommRt Met/
G
----------------------------------------------------------------------
---
1/12  0 1/xge1  Up    ---4--s   3d2m   000    0.00     1   2500/2500  0/-
1/12  1 1/xge0  Up    ---4-xs   3d2m   0.00   0.00     1   2500/2500  1/-
1/21  0 1/xge1  Up    ---4--s   3d1m   0.00   0.00     1   2500/2500  0/-
1/21  1 1/xge0  Up    ---4-xs   3d2m   0.00   0.00     1   2500/2500  1/-
1/22  0 1/xge0  Up    ---4--s   3d1m   0.00   0.00     1   2500/2500  0/-
1/22  1 1/xge1  Up    ---4-xs   3d2m   0.00   0.00     1   2500/2500  1/-
1/31  0 1/xge0  Up    ---4--s   3d2m   0.00   0.00     1   2500/2500  0/-
1/31  1 1/xge1  Up    ---4-xs   3d2m   0.00   0.00     1   2500/2500  1/-
----------------------------------------------------------------------
---
Flags:circuit:s=sack v=VLAN Tagged x=crossport 4=IPv4 6=IPv6
```

```
                        T=Test(CPerf) L=Listener I=Initiator


    switch:admin> portshow fciptunnel --hcl-status

    Checking FCIP Tunnel HA Status.

    Current Status        : Ready
    CP Version            : v8.1.0
    DP0 Status:
       State              : Online - Inactive
       Version            : v8.1.0
       Current FC HA Stage : IDLE
       Current IP HA Stage : IDLE
       IP SVI Swapped     : NO
    DP1 Status:
       State              : Online - Inactive
       Version            : v8.1.0
       Current FC HA Stage : IDLE
       Current IP HA Stage : IDLE
       IP SVI Swapped     : NO


     Tunnel 24 (FID:128) FC:HA Online IP:HA Online - Traffic will not be
    disrupted.
     Tunnel 25 (FID:128) FC:HA Online IP:Disabled - Traffic will not be
    disrupted.
     Tunnel 34 (FID:128) FC:HA Ready IP:HA Ready - FC and IP traffic will
    be disrupted.
```

To display the details for all FCIP circuits on the Brocade FX8-24 (Note that both circuits are configured as initiators):

```
switch:admin> portshow fcipcircuit all --detail
  -------------------------------------------
  Circuit ID: 1/12.0
     Circuit Num: 0
     Admin Status: Enabled
     Oper Status: Up
     Connection Type: Initiator
     Remote IP: 192.168.12.200
     Local IP: 192.168.12.100
     Metric: 0
     Failover Group ID: (Not Config/Active)
     Min Comm Rt: 2500000
     Max Comm Rt: 2500000
     SACK: On
     Min Retrans Time: 100
     Max Retransmits: 8
     Keepalive Timeout: 10000
     Path MTU Disc: 0
     VLAN ID: (Not Configured)
     L2CoS: (VLAN Not Configured)
     DSCP:  F:  0 H:  0 M:  0 L:  0
     Flags: 0x00000000
```

```
                ---------------------------------------------
                Circuit ID: 1/12.1
                   Circuit Num: 1
                   Admin Status: Enabled
                   Oper Status: Up
                   Connection Type: Initiator
                   Remote IP: 192.168.12.201
                   Local IP: 192.168.12.101
                   Metric: 1
                   Failover Group ID: (Not Config/Active)
                   Min Comm Rt: 2500000
                   Max Comm Rt: 2500000
                   SACK: On
                   Min Retrans Time: 100
                   Max Retransmits: 8
                   Keepalive Timeout: 10000
                   Path MTU Disc: 0
                   VLAN ID: (Not Configured)
                   L2CoS: (VLAN Not Configured)
                   DSCP:  F:  0 H:  0 M:  0 L:  0
                   Flags: 0x00000000
                ---------------------------------------------
                Circuit ID: 1/21.0
                   Circuit Num: 0
                   Admin Status: Enabled
            (Output truncated)
```

To display additional performance parameters for a circuit:

```
switch:admin> portshow fcipcircuit 1/12 0 --perf
        ---------------------------------------------
        Tunnel ID: 1/12
           Tunnel Description:
           Admin Status: Enabled
           Oper Status: Up
           Compression: Off
           Fastwrite: Off
           Tape Acceleration: Off
           TPerf Option: Off
           IPSec: Disabled
           QoS Percentages: High 50%, Med 30%, Low 20%
           Remote WWN: Not Configured
           Local WWN: 10:00:00:05:1e:52:fe:00
           Peer WWN: 10:00:00:05:1e:39:a4:76
           Circuit Count: 2
           Flags: 0x00000000
           FICON: Off
           Oper Status: Up
           Flow Ctrl State: Off
           Connected Count: 1
           Tunnel Duration: 3 days, 19 hours, 54 minutes, 5 seconds
              Compression Statistics:
                 0 Uncompressed Bytes
                 0 Compressed Bytes
```

```
             1.00 : 1 Compression Ratio
      Performance Statistics: Overall Throughput
         31073824 Output Bytes
            16 Bps 30s Avg, 93 Bps Lifetime Avg
         70932 Output Packets
            0 pkt/s 30s Avg, 0 pkt/s Lifetime Avg
         69170308 Input Bytes
            85 Bps 30s Avg, 209 Bps Lifetime Avg
         92393 Input Packets
            0 pkt/s 30s Avg, 0 pkt/s Lifetime Avg
         TCP Stats:
            1450493536 Output Bytes
            16107875 Output Packets
            844887492 Input Bytes
            16117320 Input Packets
            Retransmits: 0
            Round Trip Time: 0 ms
            Out Of Order: 0
            Slow Starts: 0
```

To display QoS prioritization for the default circuit:

```
switch:admin> portshow fcipcircuit 1/12 0 --perf --qos
   -------------------------------------------
   Circuit ID: 1/12.0
      Circuit Num: 0
      Admin Status: Enabled
      Oper Status: Up
      Connection Type: Default
      Remote IP: 192.168.12.200
      Local IP: 192.168.12.100
      Metric: 0
      Failover Group ID: (Not Config/Active)
      Min Comm Rt: 2500000
      Max Comm Rt: 2500000
      SACK: On
      Min Retrans Time: 100
      Max Retransmits: 8
      Keepalive Timeout: 10000
      Path MTU Disc: 0
      VLAN ID: (Not Configured)
      L2CoS: (VLAN Not Configured)
      DSCP:  F:  0 H:  0 M:  0 L:  0
      Flags: 0x00000000
      Flow Ctrl State: Off
      Connected Count: 1
      Circuit Duration: 3 days, 19 hours, 57 minutes, 42 seconds
      Performance Statistics - Priority: F-Class
         Oper Status: Up
         Flow Ctrl State: Off
         Connected Count: 1
         Duration: 3 days, 19 hours, 57 minutes, 42 seconds
         4732308 Output Bytes
            10 Bps 30s Avg, 14 Bps Lifetime Avg
```

```
                    41359 Output Packets
                       0 pkt/s 30s Avg, 0 pkt/s Lifetime Avg
                    7223112 Input Bytes
                       27 Bps 30s Avg, 21 Bps Lifetime Avg
                    45277 Input Packets
                       0 pkt/s 30s Avg, 0 pkt/s Lifetime Avg
                    TCP Stats:
                       318824216 Output Bytes
                       3419555 Output Packets
                       184935644 Input Bytes
                       3419605 Input Packets
                       Retransmits: 0
                       Round Trip Time: 0 ms
                       Out Of Order: 0
                       Slow Starts: 0
                 Performance Statistics - Priority: High
                    Oper Status: Up
                    Flow Ctrl State: Off
                    Connected Count: 1
                    Duration: 3 days, 19 hours, 57 minutes, 41 seconds
                    0 Output Bytes
                       0 Bps 30s Avg, 0 Bps Lifetime Avg
                    0 Output Packets
                       0 pkt/s 30s Avg, 0 pkt/s Lifetime Avg
                    0 Input Bytes
                       0 Bps 30s Avg, 0 Bps Lifetime Avg
                    0 Input Packets
                       0 pkt/s 30s Avg, 0 pkt/s Lifetime Avg
                    TCP Stats:
                       308550696 Output Bytes
                       3310618 Output Packets
                       176126080 Input Bytes
                       3310620 Input Packets
                       Retransmits: 0
                       Round Trip Time: 0 ms
                       Out Of Order: 0
                       Slow Starts: 0
                 Performance Statistics - Priority: Medium
                    Oper Status: Up
                    Flow Ctrl State: Off
                    Connected Count: 1
                    Duration: 3 days, 19 hours, 57 minutes, 43 seconds
                    26358236 Output Bytes
                       17 Bps 30s Avg, 79 Bps Lifetime Avg
                    29611 Output Packets
                       0 pkt/s 30s Avg, 0 pkt/s Lifetime Avg
                    61983140 Input Bytes
                       298 Bps 30s Avg, 187 Bps Lifetime Avg
                    47166 Input Packets
                       0 pkt/s 30s Avg, 0 pkt/s Lifetime Avg
                    TCP Stats:
                       340704236 Output Bytes
                       3429074 Output Packets
```

```
                       239375444 Input Bytes
                       3438474 Input Packets
                       Retransmits: 0
                       Round Trip Time: 0 ms
                       Out Of Order: 0
                       Slow Starts: 0
                 Performance Statistics - Priority: Low
                    Oper Status: Up
                    Flow Ctrl State: Off
                    Connected Count: 1
                    Duration: 3 days, 19 hours, 57 minutes, 42 seconds
                    0 Output Bytes
                       0 Bps 30s Avg, 0 Bps Lifetime Avg
                    0 Output Packets
                       0 pkt/s 30s Avg, 0 pkt/s Lifetime Avg
                    0 Input Bytes
                       0 Bps 30s Avg, 0 Bps Lifetime Avg
                    0 Input Packets
                       0 pkt/s 30s Avg, 0 pkt/s Lifetime Avg
                    TCP Stats:
                       308551588 Output Bytes
                       3310627 Output Packets
                       176126612 Input Bytes
                       3310630 Input Packets
                       Retransmits: 0
                       Round Trip Time: 0 ms
                       Out Of Order: 0
                       Slow Starts: 0
```

To display a summary view for the circuits on the Brocade 7840:

```
switch:admin> portshow fciptunnel --circuit

 Tunnel Circuit  OpStatus  Flags     Uptime  TxMBps  RxMBps ConnCnt
CommRt Met/G
-------------------------------------------------------------------
-----------
 24    -        Up      --------    36s   0.00    0.00   1     -    -/-
 24   0 ge2    Up     ---ah--4     36s   0.00    0.00   1  2500/
5000  0/-
 24   1 ge3    Up     ---ah--4     10s   0.00    0.00   1  2500/
5000  0/-
 28    -        Up      --------    13s   0.00    0.00   1     -    -/-
 28   0 ge4    Up     ---a---4     13s   0.00    0.00   1  2500/
5000  0/-
 34    -        InProg --------     0s   0.00    0.00   0     -    -/-
 34   0 ge2    InProg ---ah--4      0s   0.00    0.00   0  2500/
5000  0/-
 34   1 ge3    InProg ---ah--4      0s   0.00    0.00   0  2500/
5000  0/-
-------------------------------------------------------------------
-----------
 Flags (tunnel): i=IPSec f=Fastwrite T=TapePipelining F=FICON
r=ReservedBW
```

```
                         a=FastDeflate d=Deflate D=AggrDeflate
            (circuit): h=HA-Configured v=VLAN-Tagged p=PMTU 4=IPv4 6=IPv6
                       ARL a=Auto r=Reset s=StepDown t=TimedStepDown
```

To display the IP addresses configured for the circuits on the Brocade 7840:

```
switch:admin> portshow fciptunnel 24 --circuit
 Tunnel: VE-Port:24 (idx:0)
 ======================================================
  Oper State          : In Progress
  TID                 : 24
  Flags               : 0x00000000
  Compression         : None
  QoS BW Ratio        : 50% / 30% / 20%
  Fastwrite           : Disabled
  Tape Pipelining     : Disabled
  IPSec               : Disabled
  Local WWN           : 10:00:00:05:1e:65:7d:08
  Peer WWN            : 00:00:00:00:00:00:00:00
  RemWWN (config)     : 00:00:00:00:00:00:00:00
  cfgmask             : 0x40000008 0x0000001f
  Failover Count      : 0
  Flow Status         : 0
  ConCount/Duration   : 0 / 0s
  Receiver Stats      : 0 bytes / 0 pkts /    0.00 Bps Avg
  Sender Stats        : 0 bytes / 0 pkts /    0.00 Bps Avg
  TCP Bytes In/Out    : 0 / 0
  ReTx/OOO/SloSt/DupAck: 0 / 0 / 0 / 0
  RTT (min/avg/max)   : 0 / 0 / 0 ms

  Circuit 24.0 (dp:0)
  ======================================================
  Admin/Oper State    : Enabled / In Progress
  Flags               : 0x00000000
  IP Addr (L/R)       : 192.168.2.20 ge2 - 192.168.2.10
  HA IP Addr (L/R)    : 192.168.2.21 ge2 - 192.168.2.11
  Configured Comm Rates: 2500000 / 5000000 kbps
  Peer Comm Rates     : 0 / 0 kbps
  Actual Comm Rates   : 2500000 / 5000000 kbps
  Keepalive Timeout   : 6000 ms
  Metric              : 0
  Connection Type     : Default
  ARL-Type            : Auto
  PMTU                : Disabled
  Failover Group      : 0
  VLAN-ID             : NONE
  L2Cos (f/h/m/l)     : 0/0/0/0
  DSCP (f/h/m/l)      : 0/0/0/0
  cfgmask             : 0x00003c2f 0x40000000
  Flow Status         : 1
  ConCount/Duration   : 0 / 0s
  Receiver Stats      : 0 bytes / 0 pkts /    0.00 Bps Avg
  Sender Stats        : 0 bytes / 0 pkts /    0.00 Bps Avg
  TCP Bytes In/Out    : 0 / 0
```

```
      ReTx/OOO/SloSt/DupAck: 0 / 0 / 0 / 0
      RTT (min/avg/max)    : 0 / 0 / 0 ms

   Circuit 24.1 (dp:0)
   =======================================================
    Admin/Oper State    : Enabled / In Progress
    Flags               : 0x00000000
    IP Addr (L/R)       : 192.168.3.20 ge3 - 192.168.3.10
    HA IP Addr (L/R)    : 192.168.3.21 ge3 - 192.168.3.11
    Configured Comm Rates: 2500000 / 5000000 kbps
    Peer Comm Rates     : 0 / 0 kbps
    Actual Comm Rates   : 2500000 / 5000000 kbps
    Keepalive Timeout   : 6000 ms
    Metric              : 0
    Connection Type     : Default
    ARL-Type            : Auto
    PMTU                : Disabled
    Failover Group      : 0
    VLAN-ID             : NONE
    L2Cos (f/h/m/l)     : 0/0/0/0
    DSCP (f/h/m/l)      : 0/0/0/0
    cfgmask             : 0x00003c2f 0x40000000
    Flow Status         : 1
    ConCount/Duration   : 0 / 0s
    Receiver Stats      : 0 bytes / 0 pkts /    0.00 Bps Avg
    Sender Stats        : 0 bytes / 0 pkts /    0.00 Bps Avg
    TCP Bytes In/Out    : 0 / 0
    ReTx/OOO/SloSt/DupAck: 0 / 0 / 0 / 0
    RTT (min/avg/max)   : 0 / 0 / 0 ms
```

To display FCP emulation statistics using the command with two levels and a single command:

```
switch:admin> portshow xtun 1/13 -fcp -itl -itn -stats
```

To display FCP emulation statistics, information, and configuration information using the command with a single level and three commands:

```
switch:admin> portshow xtun 1/13 -fcp -itl -stats  \
    -info -cfg
```

To display FICON statistics on the Brocade SX6 blade:

```
switch:admin> portshow xtun 8/27 -ficon -stats

FICON FCIP VePort=219 Statistics:
 Emulation Common Statistical Counts (decimal)
 =============================================
 TotalIngressFrames   =            307196261
 TotalEgressFrames    =             21636019
 TotalFCEgressFrames  =             10323404
 TotalCmds            =              7420486
 TotalEmulDvcLvlAcks  =                  734
 TotalEmulatedOps     =              1889025
 Idle Accepted Status =                   92
 Idle Not Accpt Status =                  14
```

```
   Idle Accepted ATTN    =                        4
 MaxRetryQueueDepth    =          0  MaxEgressQueueDepth  =        3360
 TotalCUBusyResponses  =          5  TotalCUEndResponses  =           5
 TotalEmulatedCUBusys  =          5  TotalEmulCUEnd       =           5
 WIRE Buffer Percentages LocalFree= 99 LocalLow= 99 PeerFree= 99
PeerLow=99
 XBAR Buffer Percentages LocalFree=100 LocalLow=100 PeerFree=100
PeerLow=100


 FICON Configuration Status:
 --------------------------------------------------------------------
  FICON Host side Paths =      0 Device Side Paths=   0
  FICON LPARS Connected =      5   Curr LCUs =    12 Total Devices= 128
  Current Egress Q Count=   3360    RetryQCnt =      0
  Current Free Headers  =    348    HdrsInUse =      0
  Active Emulation Count= 12


 No Emulated XRC Operations
 -------------------------


 Tape Write Emulation Statistical Counts (decimal)
 -------------------------------------------------------------
  Current Bytes in write pipe       =                 0
  Maximum Bytes in write pipe       =          14680064
  Largest write chain processed     =            229377
  Total number of emulated Write Bytes=     249337825280
  Number of emulated Write Chains   =           1086924
  Total number of emulated Write CCWs =         4348063
  Average Emulated Writes Blocksize =             57344
  Average Writes in Emulated Chains =                 4
  Write emulation slowdowns         =             30980
  Slowdowns at Start of Chain       =               407
  Slowdowns at End of chain         =              5291
  Current Host side Write FDCB Count =                0
  Max Concurrent Write FDCB Count   =                 8
  Current Write Limited FDCB Count  =                 0


 Tape Read Emulation Statistical Counts (decimal)
 ---------------------------------------------------
  Total number of emulated Read Bytes =        73229283205
  Total number of emulated Read Chains=            802101
  Total number of emulated Read CCWs  =           1180476
  Average Emulated Bytes per chain    =             91296
  Average Emulated Read Blocksize     =             62033
  Average CCWs in Emulated Chains     =                 1
  Current Read FDCBs Count            =                 8
  Max Concurrent Read FDCB Count      =                 0
  Current Read Limited FDCB Count     =                 8


 No Emulated Tera Operations
 ---------------------------


 No Emulated Printer Operations
```

```
                          ---------------------------

FICON Debug Flags (ftrace and others) = 0x77c90000 (Default =
0x77c90000)
 --------------------------------------------------------
  Bit 31 [0x80000000] = 0 : TRIGGER_ON_SELRESET
  Bit 30 [0x40000000] = 1 : TRIGGER_ON_PURGEPATH
  Bit 29 [0x20000000] = 1 : TRIGGER_ON_RRS_MISS
  Bit 28 [0x10000000] = 1 : TRIGGER_ON_LRJ

  Bit 27 [0x08000000] = 0 : TRIGGER_ON_UNIT_CHECK
  Bit 26 [0x04000000] = 1 : TRIGGER_ON_LOOKUP_FAIL
  Bit 25 [0x02000000] = 1 : TRIGGER_ON_FDCB_ABORT
  Bit 24 [0x01000000] = 1 : TRIGGER_ON_NOFDCB_ABORT

  Bit 23 [0x00800000] = 1 : TRIGGER_ON_LINKDOWN
  Bit 22 [0x00400000] = 1 : TRIGGER_ON_SENSE_CMD
  Bit 21 [0x00200000] = 0 : TRIGGER_ON_BUSYATTN
  Bit 20 [0x00100000] = 0 : TRIGGER_ON_XRCUNS

  Bit 19 [0x00080000] = 1 : DISPLAY_FDCB_ON_ERROR
  Bit 18 [0x00040000] = 0 : TRIGGER_ON_LOW_WIREPOOL
  Bit 17 [0x00020000] = 0 : TRIGGER_ON_READ_UNITCHECK
  Bit 16 [0x00010000] = 1 : TRIGGER_ON_STATE_SAVE

  Bit 15 [0x00008000] = 0 : TRIGGER_ON_SUSPEND
  Bit 14 [0x00004000] = 0 : MINIMIZE_RASLOGS
  Bit 13 [0x00002000] = 0 : TRIGGER_ON_LONG_IO
  Bit 12 [0x00001000] = 0 : FORCE_DISABLE_IDLE_STACC

  Bit 11 [0x00000800] = 0 : FORCE_DISABLE_3203_PRINT
  Bit 10 [0x00000400] = 0 : FORCE_DISABLE_3211_PRINT
  Bit  9 [0x00000200] = 0 : FORCE_DISABLE_3800_PRINT
  Bit  8 [0x00000100] = 0 : FORCE_DISABLE_3900_PRINT

  Bit  5 [0x00000020] = 0 : DISABLE_TAPE_MULTIPATH_PROTECTION
  Bit  4 [0x00000010] = 0 : ACCEPT_READTRACK_STATUS

  Bit  3 [0x00000008] = 0 : FORCE_DISABLE_READ_PIPE
  Bit  2 [0x00000004] = 0 : FORCE_DISABLE_WRITE_PIPE
  Bit  1 [0x00000002] = 0 : FORCE_DISABLE_XRC_EMUL
  Bit  0 [0x00000001] = 0 : DISABLE_PERSIST_IU_PACE
```

To display the FICON Device Path Blocks:

```
switch:admin> portshow xtun 23 -ficon -fdpb

 FDPB (FICON Device Path Block - one per path) Count = 4
 --------------------------------------------------------------- \
 (0x)         Side Path:                Emul Type Tag           \
 =========== ==== ================= ==== ==== ========== \
 041004E000   H   0x1763016401****** Yes  Tape 0x14340000 \
  flg=10 parms=2001F0 typ=002086 mod=A04 mfg=IBM plnt=02  \
```

```
  0410062880   H   0x17630164FE****** No  FCUP 0x14FD0000 \
  0410052000   H   0x1763086403****** Yes  Disk 0x14830000 \
   flg=10 parms=2001F2 typ=002086 mod=A04 mfg=IBM plnt=02  \

  0410084000   H   0x176308640E****** Yes  ESCN 0x14A40000 \
   flg=10 parms=2001F2 typ=002086 mod=A04 mfg=IBM plnt=02  \



       ------------------------
       EgrOx IngOx Valid VTN
       ===== ===== ===== ===
         0     1    Y     1
     sq=0000000E77DF tg=80F0

         0     0    Y     1
         0     0    Y     1
     sq=0000000E77DF tg=80F2

         1     1    Y     1
      sq=0000000E77DF tg=80F2
      (Output split)
```

To display the FICON Channel Blocks (all blocks and a specified block):

```
switch:admin> portshow xtun 16 -ficon -fchb 041055B680

FCHB (FICON CHannel Block - one per LPAR) Count = 1
----------------------------------------------------------------
(0x)         Side Path:                CU Count  Emul ChTIN CuTIN
=========== ==== ================== ========  ========== =====
041055B680   D  0x106301640106****  0x0004     0x0000 0x0000

FCHB Flags:
     tinInProgress=N   emuTinAckPending=N  emuTirInProgress=N
emuTirAckPending=N  emuTinLackPending=N    emuTirPending=N
  emuTirReceived=N emuTinFinalAckPend=N    emuTirPending=N
emuTinSuccessful=N    emuTinReceived=N       emuTirSent=N
      fcrPresent=N           fchbValid=Y

FCHB Control variables:
  tinOrigOxid=0xFFFF  tirOrigOxid=0xFFFF   tinAckRxid=0xFFFF
   tinAckOxid=0xFFFF  allocChOxid=0xFFFF  allocChOIdx=0x0000
   tinTirOxid=0xFFFF
```

To display FICON FCUB information (FICON Images accessed through the tunnel)

```
switch:admin> portshow xtun 23 -ficon -fcub

 FCUB (FICON Control Unit Block) Count = 29


               FC Egress parms:
 (0x)        Side Path:                 devRange DevCnt Model  \
 =========== ==== ================== ========  ==== =====
 0410083800   H  0x17630164010604**   00-0F    0x10  3490   \
```

```
0410047500    H    0x17630164010605**    00-0F    0x10    3490   \
0410048E80    H    0x17630164010606**    00-0F    0x10    3490   \
0410049700    H    0x17630164010607**    00-0F    0x10    3490   \
0410054000    H    0x17630164010004**      -      0x00    0000   \
041006B100    H    0x17630864030600**    00-7F    0x80    3990   \
041006C000    H    0x17630864030601**    00-7F    0x80    3990   \
04100A4000    H    0x17630864030000**      -      0x00    0000   \
0410072000    H    0x176308640E0600**      -      0x00    0000   \
0410073100    H    0x176308640E0601**      -      0x00    0000   \
0410075100    H    0x176308640E0602**      -      0x00    0000   \
0410076880    H    0x176308640E0603**      -      0x00    0000   \
0410078000    H    0x176308640E0604**      -      0x00    0000   \
0410078880    H    0x176308640E0605**      -      0x00    0000   \
041007A000    H    0x176308640E0606**      -      0x00    0000   \


                    FC Egress parms:
Type  LPE BL CHPID         Tag V Ve P B P VC EGID
====  === == ===== ========== = == = = = == ====
TAPE  Yes    00F0  0x15698E1E Y  Y 2 0 1 02 000D
TAPE  Yes    00F0  0x15B5E15F Y  Y 2 0 2 02 000D
TAPE  Yes    00F0  0x15D1509C Y  Y 2 0 4 02 000D
TAPE  Yes    00F0  0x150D3FDD Y  Y 2 0 2 02 000D
UNKN  No     00F0  0x15CDB71F Y  Y 2 0 1 02 000D
DISK  Yes    00F2  0x1538206F Y  Y 2 0 4 02 0007
DISK  Yes    00F2  0x15E44F2E Y  Y 2 0 1 02 0007
UNKN  No     00F2  0x159C196E Y  Y 2 0 3 02 0007
UNKN  No     00F2  0x152D3BA3 Y  Y 2 0 3 02 0007
UNKN  No     00F2  0x15F154E2 Y  Y 2 0 4 02 0007
UNKN  No     00F2  0x1595E521 Y  Y 2 0 4 02 0007
UNKN  No     00F2  0x15498A60 Y  Y 2 0 3 02 0007
UNKN  No     00F2  0x155C86A7 Y  Y 2 0 1 02 0007
UNKN  No     00F2  0x1580E9E6 Y  Y 2 0 1 02 0007
UNKN  No     00F2  0x15E45825 Y  Y 2 0 3 02 0007
(output split and truncated)
```

To reset the Device Path Block statistics:

```
switch:admin> portshow xtun 16 -ficon -fdpb -clear
```

To display a FICON Teradata, Tape, or XRC emulation statistics for a specified Device Control
Block:

```
switch:admin> portshow xtun 16 -ficon -fdcb 0x041008B980
FDCB (FICON Device Control Block):Port=10 Side=Host Active=No
             DeviceType=TERA
-------------------------------------------------------------
 FDCB
 (0x)        hDom hPrt dDom dPrt lch  lcu  dev  state
============ ==== ==== ==== ==== ==== ==== ==== =====
0x041008B980 63   04   64   02   02   08   03   0x00


CONTROL
=======
active       =  No Send_SYR      =  No crrSet        =  No
```

```
xrcEstablished  =  No sssSet            =  No dvcAckEmulInProg  =  No
discardIgrFrames=  No resetEmulPending  =  No interceptLack     =  No
interceptLack2  =  No onStartPendingQueue=  No discardEgrFrames =  No
deferDeviceType =  No emulBaAcceptPending=  No mappingOxid      =  No
xrcEmulEnable   = Yes tapeWriteEmulEnable= Yes tapeReadEmulEnabled= Yes
dvcAckEmulEnable= Yes fdcbLocked         = Yes vtnValid         = Yes
fcrPresent      =  No deviceNotInstalled =  No onCuBusyQueue    =  No
egressParmsSet  = Yes statusFlags        = 0x4000

QUEUE COUNTS
====================
 fcEgressQueue   =           0  egressQMax =           0
 ficonRetryQueue =           0  retryQMax  =           0
 cmdHdrQueue     =           0  cmdHdrQMax =          32

MISC (hex)
==========
state       = 0x00    prevState    = 0x18   lastStateArray= 0x1C371415
statusFlags = 0x4000
errorCode   = 0x00      ingressOxid  = 0xFFFF
egressOxid  = 0xFFFF    allocatedOxid= 0xFFFF    unsolIngrOxid = 0xFFFF
lastStatus  = 0x0C      lastCmd      = 0x00      tokenFlags    = 0x00
lastCmdArray= 0x773E3E64 lastStsArray= 0x08040C0Cl \
                                        astXprtArray=0x08040C0C
lastSeqId   = 0x00      curSeqId     = 0xB1
lastXportEmulMsg = 0x4F  statusFctlHi = 0x18    curIuCnt      = 0x0001
token       = 0x00000000
endingChOxid = 0xFFFF    endingCuOxid= 0xFFFF
emulDvcAckSeqs= 0x00000003 lastEvtFromCu= 0x00  priorEvtFrmCu = 0x85
abortOxid    = 0xFFFF    fdcbWorkSched = 0
deviceType   = 0x54455241

EMUL_HDR (hex)
==============
 funct = 0x00 msg = 0x00
 parm1 = 0x00 parm2 = 0x0000 parm3 = 0x00000000

STATS (dec)
===========
 cmdCount            =      274865
 emulatedOps         =      274565 resequencedIuCount  =           0
 cancelCount         =           0 selectiveResetCount =           1
 purgePathCount      =           0 abortCount          =           0
 normStatus          =      274408 attnStatus          =           0
 attnBusyStatus      =           0 ceStatus            =           0
 deStatus            =           0 retryStatus         =           0
 immRetryStatus      =           0 devBusyStatus       =           0
 cuBusyStatus        =           0 ceDeUxStatus        =           1
 deUxStatus          =           0 pendDeStatus        =           0
 deUcStatus          =           0 unusualStatus       =           0
 chLinkBusyCount     =           1 cuLinkBusyCount     =           0
 unusualStsArray = 0x00000000
 pGb             = 0x0000000000
```

```
 tag               = 0x0285CF9E
 senseDeviceType   = 0xFF30884000000000
 ingressFrameCount= 0x000000000011ADCE
 egressFrameCount  = 0x00000000000432AB

TERADATA CONTROL
============
 writeSuspendFlag   = OFF finalStatusPndg = OFF waitCuRsp       =  OFF
 cuBusyRsp          = OFF suspendCompleted= OFF rexmitPending   =  OFF
 synStatusSent      = OFF unitCheckPndg   = OFF unAnsweredExchg =  OFF
 queuedCntlFrame    = OFF controlFunctAc  = OFF controlFunctDon =  OFF
 unitChkPresented   = OFF senseDataSaved  = OFF snsDataPresente =  OFF
 waitingForSenseData= OFF lackOwed        = OFF rexmitLbySent   =  OFF
 readEmulAct        = OFF writeEmulAct    = OFF iuPacingNeeded  =   ON

TERADATA MISC
=========
 writeTrigger      = 0x0000           readBlkTrigger  = 0x0000
 teraDhEndCount    = 0x0
 teraEsCount       = 0x0000           writeOpsInPipe   = 0x00000000
 maxWritePipe      = 0x0000           maxReadPipe      = 0x0002
 teraCmdCode       = 0x64             teraStatus       = 0x0d
 emulTeraWriteOps  = 0x00043085       emulTeraReadOps = 0x00000000
 emulTeraWrtBytes  = 0x00000001679cb8b0
 emulTeraReadBytes = 0x0000000000000000
 emulTeraWriteCcws = 0x00043085       emulTeraReadCcws= 0x00000000
 multUnitCheckCnt  = 0x00000000
 currentWriteChain = 160
 largestWriteChain = 43936
 bytesInWritePipe  = 0
 atMaxWrtBytesCount = 0
IU Pacing Values:crrsIssued=0 creditsOutstanding=0
currentCreditBurst=0

 Historic Emulation Headers:
 ===========================
 current index = 1
 ToPeerEmulHdr[0]=funct=2:msg=1:p1=0x00:p2=0x0000:p3=0x0285cf9e
 ToPeerEmulHdr[1]=funct=2:msg=7:p1=0x00:p2=0x3085:p3=0x00000000
 ToPeerEmulHdr[2]=funct=2:msg=7:p1=0x00:p2=0x3085:p3=0x00000000
 ToPeerEmulHdr[3]=funct=2:msg=18:p1=0x00:p2=0x3085:p3=0x00000000
 current index = 0
 FromPeerEmlHd[0]=funct=2:msg=15:p1=0x0c:p2=0x3066:p3=0x00000003
 FromPeerEmlHd[1]=funct=7:msg=8:p1=0x5f:p2=0x0062:p3=0x00000000
 FromPeerEmlHd[2]=funct=7:msg=6:p1=0x00:p2=0x0000:p3=0x00000000
 FromPeerEmlHd[3]=funct=7:msg=8:p1=0x5f:p2=0x0062:p3=0x00000000
 convIngressOxid   = 0xffff           convIngressOxid    = 0xffff
 timedOps          = 0x00043066

TERA IO TIMING:
===============
 last elapsedTime  = 0.397
 maxElapsedTime    = 0.504
```

```
 totalTime             = 145.132
 longIOtimes           = 0x0000005D
 startOfChainDelayCnt= 0x0000          endOfChainDelayCnt  = 0x5B
 readPacedCount        = 0x0000        writePacedCount     = 0x0000

Ave Chain SIO time  = 0.000 seconds

ReadPipe Cntls:
===============
 readBlkEmulation=OFF        entireCP=OFF      waitForAccept=OFF
        endOfCP=OFF      commandRetry=OFF      goToIdleState=OFF
    sentUExceptn=OFF         earlyEnd=OFF        dackPending=OFF
  sofCNReceived=OFF        noActiveIO=OFF        sendSOFRep=OFF
   blkIneligible=OFF       rdBlkValid1=OFF       rdBlkValid2=OFF
earlyIdleStatus=ON         reducePipe=OFF          doBSNoOp=OFF
       waitForDe=OFF     readCpLimited=OFF
 statusFramesOnQueue = 0x0000          readBlocksSent   = 0x0000
 readBlocksRequested = 0x0000          readCpsRequested = 0x0000
```

To display FICON emulation statistics on the Brocade SX6 (as the following examples show, this command can display emulation statistics for Teradata, Tape, XRC, and Printer depending on the FICON devices and FICON Emulation Features that are enabled on the tunnel.):

```
switch:admin> portshow xtun 8/27 -ficon -emultera
                                           TAPE EMULATION STATS
+-----------------+---------------+-+-----+----+----+----+---------
--+
|    FDCB Ptr     |    Path       |H|State|Emul|Emul|Rtry| Emulated |
|(0x)             |(0x)           |D|     |Pipe|Q'd | Qd | Tape Ops |
+-----------------+---------------+-+-----+----+----+----+---------
--+
|0x8000000500EBC900|DB6841614D02030E|D| 0x3C|0x11|0007|0000|
149487|
|0x8000000500EC3400|DB6841614D020401|D| 0x3C|0x11|0005|0000|
149436|


----------+------+----------+------+
Emulated  |RdAvg |Emulated  |WtAvg |
Read CCWs | Size |Write CCWs| Size |
----------+------+----------+------+
    149487| 65534|         0|     0|
    149436| 65533|         0|     0|
(Output split and truncated)
switch:admin> portshow xtun 23 -ficon -emultape
                            TAPE EMULATION STATS
+-----------------+---------------+-+-----+----+----+----+----+----
-------+
|    FDCB Ptr     |    Path       |H|State|Cmds| Cmd|Data|Data|
Emulated  |
|     (0x)        |    (0x)       |D|     | Qd | Max| Qd |Max | RRS Ops   |
+-----------------+---------------+-+-----+----+----+----+----+----
-------+
|0x8000000500C79C00|196300640006002B|H| 0x00|0000|0072|0000|0001|
2677|
```

```
|0x8000000500C22F00|1963006400060027|H| 0x00|0000|0072|0000|0001|
1850|
|0x8000000500C14D80|196300640006002F|H| 0x00|0000|0072|0000|0001|
2657|
|0x8000000500C1AD80|1963006400060023|H| 0x00|0000|0072|0000|0001|
3546|
[...]
---+------+------+------+
Avg|  RRS|  RRS | Large|
RRS|  TLF|  Read|Chains|
---+------+------+------+
 39| 34819|  9791|     0|
 25| 42323|  6798|     0|
 35| 37134|  7371|     0|
 44| 31723|  8203|     0|
[...]
(Output split and truncated)
switch:admin> portshow xtun 23 -ficon -images
 FCUB (FICON Control Unit Block) Count = 11

 (0x)             Side Path:               devRange DevCnt Model
================ ==== ================== ======== ==== =====
8000000500C82600   H 0x19630064000601**      -      0x00  3990
8000000500BFAB00   H 0x19630064000600**    20-BF    0x80  3990
8000000500C81F00   D 0x19640F63040601**    00-07    0x08  3088
8000000500C83300   H 0x196302640A0510**    00-0F    0x10  3590


                                FC Egress parms:
Type  LPE BL CHPID       Tag V Ve P B P VC EGID cbState
====  === == ===== ========== = == = = = == ==== =======
DISK  Yes    0000  0x02908700 Y  Y 2 0 0 05 0010    0
DISK  Yes    0000  0x0290E841 Y  Y 2 0 0 05 0010    0
FCTC  Yes    0000  0x02C4D969 Y  Y 2 0 0 15 0013    0
TAPE  Yes    0000  0x023D22B4 Y  Y 2 0 3 15 0012    0
(Output split and truncated)
```

To display FICON emulation statistics for the FCIP tunnel:

```
switch:admin> portshow xtun 23 -ficon -stats

FICON FCIP Tunnel=7 Statistics:
Emulation Common Statistical Counts (decimal)
=============================================
TotalIngressFrames     =          1824707656
TotalEgressFrames      =          1665499614
TotalFCEgressFrames    =           136476952
TotalCmds              =           152548501
TotalEmulDvcLvlAcks    =               81667
TotalEmulatedOps       =            23893981
Idle Accepted Status   =             8000016
Idle Not Accpt Status  =            11886003
MaxRetryQueueDepth     =          0  MaxEgressQueueDepth  =     2316
TotalCUBusyResponses   =          0  TotalCUEndResponses  =        0
TotalEmulatedCUBusys   =          0  TotalEmulCUEnd       =        0
```

```
TotalSelectiveResets  =          0    TotalChLinkBusy     =          0
TotalCancels          =          0    TotalAborts         =          0
TotalEmulErrors       =          0    TotalCuLinkBusy     =          0
TotalPurgePaths       =          0    Xport LRC CheckErrors=         0
Generated Link Busys  =          0    Failed Generate Frame=         0


WIRE Buffer Percentages LocalFree= 95 LocalLow= 94 PeerFree= 95
PeerLow=93
XBAR Buffer Percentages LocalFree= 98 LocalLow= 97 PeerFree= 98
PeerLow=97


FICON Configuration Status:
-----------------------------------------------------------------------
  FICON Host side Paths =   3 Device Side Paths=   1
  FICON LPARS Connected =   5    Curr LCUs =      17 Total Devices= 200
  Current Egress Q Count=   0    RetryQCnt =       0
  Current Free Headers  = 892    HdrsInUse =       0
  Active Emulation Count=   4


XRC Emulation Statistical Counts (decimal)
--------------------------------------------------------------
Total Emulated RRS Chains          =            1950996
Total Emulated RRS Commands        =           18732495
Total Received RRS Bytes           =        145156149548
Total XRC RRS Requests in Bytes    =        315684784416
Average RRS Request BlkSize         =               7748
Average RRS Requests per Chain      =                  9
Largest RRS Request Byte Count     =           12714240
Ratio of RRS Read Bytes to the
Requested Read bytes = 459 read : 1000 requested


Tape Write Emulation Statistical Counts (decimal)
--------------------------------------------------------------
  Current Bytes in write pipe       =                  0
  Maximum Bytes in write pipe       =           21359520
  Largest write chain processed     =            4128769
  Total number of emulated Write Bytes=        1374007085422
  Number of emulated Write Chains    =           11665734
  Total number of emulated Write CCWs =           39204146
  Average Emulated Writes Blocksize  =              35047
  Average Writes in Emulated Chains  =                  3
  Write emulation slowdowns          =             138931
  Slowdowns at Start of Chain        =              83938
  Slowdowns at End of chain          =              54993
  Current Host side Write FDCB Count =                  4
  Max Concurrent Write FDCB Count    =                 16
  Current Write Limited FDCB Count   =                  0


Tape Read Emulation Statistical Counts (decimal)
--------------------------------------------------
  Total number of emulated Read Bytes =        1299985900584
  Total number of emulated Read Chains=           10277251
  Total number of emulated Read CCWs  =           35565516
```

```
     Average Emulated Bytes per chain   =                    126491
     Average Emulated Read Blocksize    =                     36551
     Average CCWs in Emulated Chains    =                         3
     Current Read FDCBs Count           =                         0
     Max Concurrent Read FDCB Count     =                        16
     Current Read Limited FDCB Count    =                         0

  Tera Write Emulation Statistical Counts (decimal)
  ---------------------------------------------------------------
     Current Bytes in write pipe        =                         0
     Maximum Bytes in write pipe        =                   1405952
     Largest write chain processed      =                     43936
     Total number of emulated Write Bytes=                19204226768
     Number of emulated Write Chains    =                    989882
     Total number of emulated Write CCWs =                   989882
     Average Emulated Writes Blocksize  =                     19400
     Average Writes in Emulated Chains  =                         1
     Write emulation slowdowns          =                       114
     Slowdowns at Start of Chain        =                         0
     Slowdowns at End of chain          =                       114
     Single Chain Emulation Counter     =                         0
     Write Paced Count                  =                         0
     Current Host side Write FDCB Count =                         1
     Max Concurrent Write FDCB Count    =                         1
     Current Write Limited FDCB Count   =                         0

  Tera Read Emulation Statistical Counts (decimal)
  ----------------------------------------------------
     Total number of emulated Read Bytes =             17688908128
     Total number of emulated Read Chains=                  825572
     Total number of emulated Read CCWs  =                  825572
     Average Emulated Bytes per chain    =                   21426
     Average Emulated Read Blocksize     =                   21426
     Average CCWs in Emulated Chains     =                       1
     Read Block Paced Count              =                       0
     Read Not Ready Situations Count     =                       0
     Current Read FDCBs Count            =                       1
     Max Concurrent Read FDCB Count      =                       1
     Current Read Limited FDCB Count     =                       1

  Printer Write Emulation Statistical Counts (decimal)
  ---------------------------------------------------------------
     Current Bytes in write pipe        =                         0
     Maximum Bytes in write pipe        =                     45627
     Largest write chain processed      =                      9150
     Total number of emulated Write Bytes=                 27375500
     Number of emulated Write Chains    =                      3500
     Total number of emulated Write CCWs =                     6500
     Average Emulated Writes Blocksize  =                      4211
     Average Writes in Emulated Chains  =                         1
     Current Host side Write FDCB Count =                         1
     Max Concurrent Write FDCB Count    =                         1
     Current Write Limited FDCB Count   =                         1
```

```
FICON Debug Flags (ftrace and others) = 0xffc98030 (Default =
0xf7c90000)
---------------------------------------------------------
  Bit 31 [0x80000000] = 1 : TRIGGER_ON_SELRESET
  Bit 30 [0x40000000] = 1 : TRIGGER_ON_PURGEPATH
  Bit 29 [0x20000000] = 1 : TRIGGER_ON_RRS_MISS
  Bit 28 [0x10000000] = 1 : TRIGGER_ON_LRJ

  Bit 27 [0x08000000] = 1 : TRIGGER_ON_UNIT_CHECK
  Bit 26 [0x04000000] = 1 : TRIGGER_ON_LOOKUP_FAIL
  Bit 25 [0x02000000] = 1 : TRIGGER_ON_FDCB_ABORT
  Bit 24 [0x01000000] = 1 : TRIGGER_ON_NOFDCB_ABORT

  Bit 23 [0x00800000] = 1 : TRIGGER_ON_LINKDOWN
  Bit 22 [0x00400000] = 1 : TRIGGER_ON_SENSE_CMD
  Bit 21 [0x00200000] = 0 : TRIGGER_ON_BUSYATTN
  Bit 20 [0x00100000] = 0 : TRIGGER_ON_XRCUNS

  Bit 19 [0x00080000] = 1 : DISPLAY_FDCB_ON_ERROR
  Bit 18 [0x00040000] = 0 : TRIGGER_ON_LOW_WIREPOOL
  Bit 17 [0x00020000] = 0 : TRIGGER_ON_READ_UNITCHECK
  Bit 16 [0x00010000] = 1 : TRIGGER_ON_STATE_SAVE

  Bit 15 [0x00008000] = 1 : TRIGGER_ON_SUSPEND
  Bit 11 [0x00000800] = 0 : FORCE_DISABLE_3203_PRINT
  Bit 10 [0x00000400] = 0 : FORCE_DISABLE_3211_PRINT
  Bit  9 [0x00000200] = 0 : FORCE_DISABLE_3800_PRINT
  Bit  8 [0x00000100] = 0 : FORCE_DISABLE_3900_PRINT

  Bit  4 [0x00000010] = 1 : ACCEPT_READTRACK_STATUS

  Bit  3 [0x00000008] = 0 : FORCE_DISABLE_READ_PIPE
  Bit  2 [0x00000004] = 0 : FORCE_DISABLE_WRITE_PIPE
  Bit  1 [0x00000002] = 0 : FORCE_DISABLE_XRC_EMUL
  Bit  0 [0x00000001] = 0 : DISABLE_PERSIST_IU_PACE
```

To display FICON Teradata Read and Write performance data:

```
switch:admin> portshow xtun 16 -ficon -teraperf
Tera Performance Monitor Data:
==============================
    Sample Time Period in ms: 4318

 Tera Write Performance Data:
 ----------------------------
    Emulated Chains per sec: 1186
       Emulated CCWs per sec: 1186
         Ave Write Block Size: 22617
           Emulated Write BPS: 26831514

 Tera Read Performance Data:
 ----------------------------
    Emulated Chains per sec: 1069
```

```
        Emulated CCWs per sec: 1069
          Ave Read Block Size: 10780
            Emulated Read BPS: 11531104
```

To display FICON Printer performance data:

```
switch:admin> portshow xtun 23 -ficon -printperf

Printer Performance Monitor Data:
==================================
    Sample Time Period in ms: 7460
----------------------------
No Emulated Printer operations
----------------------------
No Emulated Read operations
```

To display FICON tape performance data:

```
switch:admin> portshow xtun 23 -ficon -tapeperf

Tape Performance Monitor Data:
===============================
    Sample Time Period in ms: 2461
 Tape Write Performance Data:
 ----------------------------
    Emulated Chains per sec: 480
      Emulated CCWs per sec: 3069
       Ave Write Block Size: 32760
          Emulated Write BPS: 100540440
 ----------------------------
 No Emulated Read operations
```

To display FICON XRC performance data:

```
switch:admin> portshow xtun 23 -ficon -xrcperf

XRC Performance Monitor Data:
============================
    Sample Time Period in ms: 11340
      Emulated Chains per sec: 16
   Emulated RRS Cmds per sec: 16
 Emulated RRS Bytes per sec: 640
     Average RRS Update Size: 40
```

See Also

portCfg, portLoginShow, switchShow

portStats64Show

Displays the 64-bit hardware statistics for a port.

Synopsis

portstats64show [*slot/*]port [**-long**]

Description

Use this command to display 64-bit hardware statistics for a specified port. When used without the **-long** option, two integers are reported for most values, the lower and upper 32-bits are reported as two separate numbers. In this case, the top word is the most significant. When issued with the **-long** option, the command displays the counters as one single 64-bit number.

stat64_wtx

Number of 4-byte words transmitted.

stat64_wrx

Number of 4-byte words received.

stat64_ftx

Number of frames transmitted.

stat64_frx

Number of frames received.

stat64_c2_frx

Number of class 2 frames received.

stat64_c3_frx

Number of class 3 frames received.

stat64_lc_rx

Number of link control frames received.

stat64_mc_rx

Number of multicast frames received.

stat64_mc_to

Number of multicast timeouts.

stat64_mc_tx

Number of multicast frames transmitted.

tim64_rdy_pri

Number of times R_RDY was high priority.

tim64_txcrd_z

Number of times that the TX BB_credit was at zero.

er64_enc_in

Number of encoding errors inside of frames.

er64_crc

Number of frames with CRC errors.

er64_trunc

Number of frames shorter than minimum.

er64_toolong

Number of frames longer than maximum.

er_bad_eof

Number of frames with bad end-of-frame.

er64_enc_out

Number of encoding error outside of frames.

er64_disc_c3

Number of class 3 frames discarded.

er64_pcs_blk

Number of Physical Coding Sublayer (PCS) block errors. This counter records encoding violations on 10Gb/s or 16Gb/s ports.

stat64_fec_cor

The number of errors corrected by FEC. Displayed only on 16Gb/s-capable platforms and not on 32Gb/s-capable platforms.

stat64_fec_uncor

The number of errors left uncorrected by FEC.

stat64_rateTxFrame

>   Tx frame rate (frames/second).

stat64_rateRxFrame

>   Rx frame rate (frames/second).

stat64_rateTxPeakFrame

>   Tx peak frame rate (frames/second).

stat64_rateRxPeakFrame

>   Rx peak frame rate (frames/seconds).

stat64_rateTxWord

>   Tx Word rate (words/seconds).

stat64_rateRxWord

>   Rx Word rate (words/seconds).

stat64_rateTxPeakWord

>   Tx peak Word rate (words/sec).

stat64_rateRxPeakWord

>   Rx peak Word rate (words/sec).

stat64_aveTxFrameSize>

>   Average Tx Frame size

stat64_aveRxFrameSize

>   Average Rx Frame size

stat64_PRJTFramees

>   Number of P_RJT frames returned to the port.

stat64_PBSYFrames

>   Number of P_BSY frames returned to the port.

stat64_inputBuffersFull

>   Number of occurrences when all input buffers are full.

stat64_rxClass1Frames

> Number of class 1 frames received.

stat64_aveTxFrameSize

> Average Tx Frame size, based on the word and frame counts during the last five seconds.

stat64_aveRxFrameSize

> Average Rx Frame size, based on the word and frame counts during the last five seconds.

The following counters provided by SNMP are displayed with **portStats64Show -long** on switches running Fabric OS v6.4.0 or later:

swConnUnitZeroTenancy, zero_tenancy

> Number of times a zero tenancy occurred.

swConnUnitFLNumOfTenancy, fl_tenancy

> Number of times the FL_Port had a loop tenancy.

swConnUnitNLNumOfTenancy,, nl_tenancy

> Number of times any NL_Port had a loop tenancy.

swConnUnitStopTenancyStarvation, Starve_stop

> Number of loop tenancies stopped due to starvation.

swConnUnitOpend, opened

> Number of times the FL_Port entered OPENED state.

swConnUnitTransferConnection, transfer

> Number of times the FL_Port entered TRANSFER state.

swConnUnitOpen, open

> Number of times the FL_Port entered OPEN state.

swConnUnitInvalidARB, er_inv_arb

> Number of invalid arbitrated loops (ARBs).

The following counters are platform-specific and applicable only to 8Gb/s-capable ASICs only. Refer to the *Brocade Fabric OS Troubleshooting and Diagnostics User Guide*, Appendix A, for a table that correlates ASIC type with switch models.

swConnUnitFTB1Miss, er_type1_miss

The number of FCR frames with transmit errors.

swConnUnitFTB2Miss, er_type2_miss

The number of frames with routing errors.

swConnUnitFTB6Miss, er_type6_miss

The number of FCR frames with receive errors.

swConnUnitZoneMiss, er_zone_miss

Number of frames with hard zoning miss

swConnUnitLunZoneMiss, er_lun_zone_miss

Number of frames with logical unit number (LUN) zoning miss.

swConnUnittStatRxMulticastToObjects, stat_mc_to

The number of multicast timeouts.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

This command is not supported on FCoE ports.

Operands

This command has the following operands:

slot

For bladed systems only, specify the slot number of the port to be displayed, followed by a slash (/).

port

Specify a port number to be displayed, relative to its slot for bladed systems. Use **switchShow** to display a list of valid ports.

-long

Displays the counters as one single 64-bit number. This operand is optional; if omitted, the lower and upper 32-bits are reported as two separate numbers.

Examples

To display the 64-bit hardware statistics for a port:

```
switch:user> portstats64show 4/15


stat64_wtx     0      top_int : 4-byte words transmitted
               21618 bottom_int : 4-byte words transmitted
stat64_wrx     0      top_int : 4-byte words received
               22492 bottom_int : 4-byte words received
stat64_ftx     0      top_int : Frames transmitted
               596    bottom_int : Frames transmitted
stat64_frx     0      top_int : Frames received
               614    bottom_int : Frames received
stat64_c2_frx 0      top_int : Class 2 frames received
               0      bottom_int : Class 2 frames received
stat64_c3_frx 0      top_int : Class 3 frames received
               0      bottom_int : Class 3 frames received
stat64_lc_rx  0      top_int : Link control frames received
               462    bottom_int : Link control frames received
stat64_mc_rx  0      top_int : Multicast frames received
               0      bottom_int : Multicast frames received
stat64_mc_to  0      top_int : Multicast timeouts
               0      bottom_int : Multicast timeouts
stat64_mc_tx  0      top_int : Multicast frames transmitted
               0      bottom_int : Multicast frames transmitted
tim64_rdy_pri 0      top_int : Time R_RDY high priority
               0      bottom_int : Time R_RDY high priority
tim64_txcrd_z 0      top_int : Time BB_credit zero
               34211 bottom_int : Time BB_credit zero
er64_enc_in   0      top_int : Encoding errors inside of frames
               0      bottom_int : Encoding errors inside of frames
er64_crc      0      top_int : Frames with CRC errors
               0      bottom_int : Frames with CRC errors
er64_trunc    0      top_int : Frames shorter than minimum
               0      bottom_int : Frames shorter than minimum
er64_toolong  0      top_int : Frames longer than maximum
               0      bottom_int : Frames longer than maximum
er64_bad_eof  0      top_int : Frames with bad end-of-frame
               0      bottom_int : Frames with bad end-of-frame
er64_enc_out  0      top_int : Encoding error outside of frames
               135762 bottom_int : Encoding error outside of frames
er64_disc_c3  0      top_int : Class 3 frames discarded
               0      bottom_int : Class 3 frames discarded
er64_pcs_blk  0      top_int : PCS block errors
               0      bottom_int : PCS block errors
stat64_fec_cor   0     top_int : FEC corrected errors detected
                 0     bottom_int : FEC corrected errors detected
stat64_fec_uncor 0     top_int : FEC uncorrected errors detected
                 0      bottom_int : FEC uncorrected errors detected
stat64_rateTxFrame     0     Tx frame rate (fr/sec)
stat64_rateRxFrame     0     Rx frame rate (fr/sec)
stat64_rateTxPeakFrame 9     Tx peak frame rate (fr/sec)
```

```
stat64_rateRxPeakFrame 9    Rx peak frame rate (fr/sec)
stat64_rateTxWord      0    Tx Word rate (words/sec)
stat64_rateRxWord      0    Rx Word rate (words/sec)
stat64_rateTxPeakWord  264  Tx peak Word rate (words/sec)
stat64_rateRxPeakWord  272  Rx peak Word rate (words/sec)
stat64_aveTxFrameSize  504  Average Tx Frame size
stat64_aveRxFrameSize  511  Average Rx Frame size
stat64_PRJTFrames      0    top_int : 4-byte words transmitted
                       0    bottom_int : 4-byte words transmitted
stat64_PBSYFrames      0    top_int : 4-byte words transmitted
                       0    bottom_int : 4-byte words transmitted
stat64_inputBuffersFull 0   top_int : 4-byte words transmitted
                       0    bottom_int : 4-byte words transmitted
stat64_rxClass1Frames  0    top_int : 4-byte words transmitted
                       0    bottom_int : 4-byte words transmitted
stat64_aveTxFrameSize  0    Average Tx Frame size
stat64_aveRxFrameSize  0    Average Rx Frame size
```

To display the counters as one single 64-bit number:

```
switch:admin> portstats64show 12 -long
zero64_tenancy      0   zero_tenancy
fl64_tenancy        0   number of times FL has the tenancy
nl64_tenancy        0   number of times NL has the tenancy
starve64_stop       0   tenancies stopped due to starvation
opened64            0   FL_Port opened
transfer64          0   loop_transfer
open64              0   loop_open
er64_inv_arb        0   Invalid ARB
er64_type1_miss     0   frames with FTB type 1 miss
er64_type2_miss     0   frames with FTB type 2 miss
er64_type6_miss     0   frames with FTB type 6 miss
er64_zone_miss      0   frames with hard zoning miss
er64_lun_zone_miss 0   frames with LUN zoning miss
lli64               0   Low level interrupts
```

See Also

portStatsClear, portStatsShow

portStatsClear

Clears port hardware statistics.

Synopsis

```
portstatsclear [slot/]port
portstatsclear -i [index1[-index2] [...] [-f]]
portstatsclear -x [hex1[-hex2] [...]]
portstatsclear -slot [slot1[-slot2][...]
portstatsclear -h
```

Description

Use this command to clear the hardware statistics for the specified ports. Including ALPA-based CRC monitor, End-to-End monitor, and Filter-based performance monitor statistics.

You can identify a single port to be cleared by its port number or by its port index number in decimal or hexadecimal format. Port ranges are supported with port numbers, index numbers(decimal or hexadecimal) or by specifying a slot or a slot range. Use **switchShow** for a listing of valid ports, slots, and port index numbers.

Specifying multiple ports with the index (**-i**) or slot (**-s**) option is supported only if **PortSwap** is disabled. They are not supported on GbE ports and configured F_Port trunks. Use the **-i** option without a port index argument to display the **portSwap** status, or alternately use **portSwapShow**.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

This command is not supported on FCoE ports.

Operands

This command has the following operands:

slot

> For bladed systems only, specify the slot number of the port to be cleared, followed by a slash (/).

port

> Clears a single port identified by the port number, relative to its slot on bladed systems. Port ranges are not supported with this command. Use **switchShow** for a listing of valid ports.

-i *index1[-index2]*

> Clears a single port or a range of ports identified by port index numbers. You may specify multiple index ranges separated by a space, for example, **-i** 33-47 65-73.

-f

> Ignores nonexisting ports. This operand is valid only with the **-i** option.

-x [*hex1* [-*hex2*]]

> Clears a port or a range of ports identified by port numbers, index number in hexadecimal format. You may specify multiple port ranges separated by a space, for example, -x 21-26 28-3c.

-slot [*slot1*[-*slot2*]

> Clears all ports on a slot or on a range of slots, for example, **-s** 3-5. You may specify multiple slot ranges separated by a space, for example, **-s** 3-5 8-10.

-h

> Displays the command usage.

Examples

> To clear hardware statistics for a single port specified by its port number:
>
> switch:admin> **portstatsclear 4/15**
>
> To clear hardware statistics for a single port specified by its index number:
>
> switch:admin> **portstatsclear -i 25**
>
> To clear hardware statistics for a range of ports specified by their index numbers:
>
> switch:admin> **portstatsclear -i 32-40**
>
> To clear hardware statistics for multiple port ranges specified by their index numbers:
>
> switch:admin> **portstatsclear -i 32-40 50-56**
>
> To clear hardware statistics for all ports on slots 3-5:
>
> switch:admin> **portstatsclear -s 3-5**
>
> To clear hardware statistics for all ports on slots 3-5 and 7-10:
>
> switch:admin> **portstatsclear -s 3-5 7-10**
>
> To clear hardware statistics for range of ports specified in hexadecimal format:
>
> switch:admin> **portstatsclear -x 1d-1e**

See Also

> portStats64Show, portStatsShow, portSwapDisable, portSwapShow, switchShow

portStatsShow

Displays port hardware statistics.

Synopsis

```
portstatsshow [slot/]port
portstatsshow -i [index1[-index2][...] [-f]]
portstatsshow -x [hex1[-hex2] [...]]
portstatsshow -slot [slot1[-slot2][...]
portstatsshow ge [slot/]ge port
portstatsshow ip [slot/]ge port [ip_address]
portstatsshow fcip [slot/]ge port [tunnel_number]
portstatsshow -h
```

Description

Use this command to display port hardware statistics counters. Some counters are platform- or port-specific and display only on those platforms and ports. All statistics have a maximum 32-bit value of 4,294,967,295 except stat_wtx and stat_wrx. The stat_wtx and stat_wrx fields have a maximum 64-bit value of 18,446,744,073,709,551,615.

You can display statistics of a single port to be cleared by its port number or by its port index number in decimal or hexadecimal format. Port ranges are supported with port numbers, index numbers(decimal or hexadecimal) or by specifying a slot or a slot range. Use **switchShow** for a listing of valid ports, slots, and port index numbers.

Specifying multiple ports with the index (**-i)** or slot (**-s**) option is supported only if **PortSwap** is disabled. They are not supported on GbE ports and configured F_Port trunks. Use the **-i** option without a port index to display the **portSwap** status, or alternately use **portSwapShow**.

The command output may include the following fields (Tx indicates frames transmitted by the port; Rx indicates frames received by the port).

stat_wtx

The number of 4-byte words transmitted.

stat_wrx

The number of 4-byte words received.

stat_ftx

The number of class 2, class 3, and control frames transmitted.

stat_frx

The number of class 2, class 3, and control frames received.

stat_c2_frx

The number of class 2 frames received.

stat_c3_frx

The number of class 3 frames received.

stat_lc_rx

The number of link control frames received.

stat_mc_rx

The number of multicast frames received.

stat_mc_to

The number of multicast timeouts.

stat_mc_tx

The number of multicast frames transmitted.

tim_rdy_pri

The number of times that sending R_RDY or VC_RDY primitive signals was a higher priority than sending frames, due to diminishing credit reserves in the transmitter at the other end of the fiber. This parameter is sampled at intervals of 1.8 microseconds, and the counter is incremented by 1 if the condition is true.

tim_txcrd_z

The number of times that the port was unable to transmit frames because the transmit BB credit was zero. The purpose of this statistic is to detect congestion or a device affected by latency. This parameter is sampled at intervals of 2.5 microseconds, and the counter is incremented if the condition is true. Each sample represents 2.5 microseconds of time with zero Tx BB Credit. An increment of this counter means that the frames could not be sent to the attached device for 2.5 microseconds, indicating degraded performance.

tim_txcrd_z_vc

The number of times that the port was unable to transmit frames because the transmit BB credit was zero for each of the port's 16 Virtual Channels (VC 0-15). The purpose of this statistic is to detect congestion or a device affected by latency. This parameter is sampled at intervals of 2.5 microseconds (microseconds), and the counter is incremented if the condition is true. Each sample represents 2.5 microseconds of time with zero Tx BB Credit. An increment of this counter means that the frames could not be send to the attached device for 2.5 microseconds, indicating degraded performance (platform- and port-specific).

tim_latency_vc

TxQ latency monitor statistics. Displayed only on 16Gb/s-capable platforms and not on 32Gb/s-capable platforms.

lat_tot_pkt_vc

Total TxQ latency monitor statistics. Displayed only on 32Gb/s-capable platforms.

lat_hi_time_vc

High TxQ latency monitor statistics. Displayed only on 32Gb/s-capable platforms.

lat_lo_time_vc

Low TxQ latency monitor statistics. Displayed only on 32Gb/s-capable platforms.

latency_dma_ts

TXQ latency DMA timeStamp. Displayed only on 32Gb/s-capable platforms.

fec_cor_detected

The number of errors corrected by FEC. Displayed only on 16Gb/s-capable platforms and not on 32Gb/s-capable platforms.

fec_uncor_detected

The number of errors left uncorrected by FEC.

er_enc_in

The number of encoding errors inside frames.

er_crc

The number of frames with cyclic redundancy check (CRC) errors.

er_trunc

The number of frames shorter than the minimum frame length.

er_toolong

The number of frames longer than the maximum frame length.

er_bad_eof

The number of frames with bad end-of-frame.

er_enc_out

The number of encoding error outside frames.

er_bad_os

The number of invalid ordered sets (platform- and port-specific).

er_pcs_blk

The number of Physical Coding Sublayer (PCS) block errors. This counter records encoding violations on 10Gb/s or 16Gb/s ports. This is applicable only on platforms that support 10Gb/s or 16Gb/s ports.

er_rx_c3_timeout

The number of receive class 3 frames received at this port and discarded at the transmission port due to timeout (platform-and port-specific).

er_tx_c3_timeout

The number of transmit class 3 frames discarded at the transmission port due to timeout (platform- and port-specific).

er_unroutable

The number of frames discarded because they cannot be routed.

er_unreachable

The number of frames discarded because the destination port cannot be reached. This field is specific to 16Gb/s-capable platforms.

er_c3_dest_unreach

The number of class 3 frames discarded because the destination cannot be reached. This field is specific to 8Gb/s-capable platforms.

er_other_discard

The number of other discarded due to route lookup failures or other reasons.

er_zone_discard

The number of class 3 frames discarded due to zone mismatch.

er_type1_miss

The number of FCR frames with transmit errors.

er_type2_miss

The number of frames with routing errors.

er_type6_miss

The number of FCR frames with receive errors.

er_zone_miss , er_lun_zone_miss

The number of frames discarded due to hard zoning miss or LUN zoning miss. If Rx port hard zoning is enabled, frames will be discarded at the Rx port. If TX port hard zoning is enabled, frames will be discarded at the TX port. If both RX and TX port hard zoning is enabled, frames will be discarded at the RX port. (LUN zoning is currently not supported.)

er_crc_good_eof

The number of CRC errors with good end-of-frame (EOF) (platform- and port-specific).

er_inv_arb

The number of invalid arbitrated loops (ARBs).

er_single_credit_loss

The number of times the port lost a single VC_RDY primitive signal or a single frame.

er_multi_credit_loss

The number of times the port lost multiple VC_RDY primitive signals or multiple frames.

other_credit_loss

The number of link timeout or complete credit loss errors.

er_encr_blk

The number of encryption block errors. Displayed only on 32Gb/s-capable platforms.

er_encr_short_frame

The number of encrypted frames that are too short. Displayed only on 32Gb/s-capable platforms.

er_encr_discard

The number of other encrypted frames that are discarded.Displayed only on 32Gb/s-capable platforms.

fec_corrected_rate

The number of FEC corrected blocks per second. Displayed only on 32Gb/s-capable platforms.

compression_ratio

The ratio based on the last 5 second sampled accumulated value. It is represented in percentage. If the port is configured for compression, this value is displayed. This field is not displayed on Brocade G610 switch.

open

   The number of times the FL_Port entered OPEN state.

transfer

   The number of times the FL_Port entered TRANSFER state.

opened

   The number of times the FL_Port entered OPENED state.

starve_stop

   The number of loop tenancies stopped due to starvation.

fl_tenancy

   The number of times the FL_Port had a loop tenancy.

nl_tenancy

   The number of times the NL_Port had a loop tenancy.

zero_tenancy

   The number of times a zero tenancy occurred.

ge_stat_tx_frms

   The number of frames transmitted on the GbE port.

ge_stat_tx_octets

   The number of octets transmitted on the GbE port.

ge_stat_tx_ucast_frms

   The number of unicast frames transmitted on the GbE port.

ge_stat_tx_mcast_frms

   The number of multicast frames transmitted on the GbE port.

ge_stat_tx_bcast_frms

   The number of broadcast frames transmitted on the GbE port.

ge_stat_tx_vlan_frms

   The number of VLAN frames transmitted on the GbE port.

ge_stat_tx_pause_frms

The number of pause frames transmitted on the GbE port.

ge_stat_rx_frms

The number of frames received on the GbE port.

ge_stat_rx_octets

The number of octets received on the GbE port.

ge_stat_rx_ucast_frms

The number of unicast frames received on the GbE port.

ge_stat_rx_mcast_frms

The number of multicast frames received on the GbE port.

ge_stat_rx_bcast_frms

The number of broadcast frames received on the GbE port.

ge_stat_rx_vlan_frms

The number of VLAN frames received on the GbE port.

ge_stat_rx_pause_frms

The number of pause frames received on the GbE port.

ge_err_carrier

The number of times the GbE port lost carrier sense.

ge_err_length

The number of times an invalid length error was observed on the GbE port.

ge_err_crc

The number of CRC Errors received on the GbE port.

ge_err_abort

The number of frames aborted on the GbE port.

ge_err_overrun

The number of overruns observed on the GbE port.

ge_err_fifo_ovf

The number of times an overflow of the first in first out (FIFO) queue was observed on the GbE port.

ip_err_hdr_cksum

The number of checksum errors observed on the GbE port.

ip_err_tcp_data_chksum

The number of IP TCP data checksum errors observed on the GbE port.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

This command is not supported on FCoE ports.

Operands

This command has the following operands:

slot

For bladed systems only, specifies the slot number of the port to be displayed, followed by a slash (/).

[ge]*port*

Displays statistics for a single port identified by the port number, relative to its slot on bladed systems. Specify the optional **ge** option to display the GbE port hardware statistics. Port ranges are not supported with this command. Use **switchShow** for a listing of valid ports.

-i *index1***[-***index2***]**

Displays statistics for a single port or for a range of ports identified by port index numbers. You may specify multiple index ranges separated by a space, for example, **-i** 33-47 65-73.

-f

Ignores nonexisting ports. This operand is valid only with the **-i** option.

-x [*hex1* **[-***hex2***]]**

Specifies a port or a range of ports identified by port index numbers in hexadecimal format. You may specify multiple port ranges separated by a space, for example, -x 21-26 28-3c.

-slot [*slot1*[-*slot2*]

> Displays statistics for all ports on a slot or on a range of slots, for example, **-s** 3-5. You may specify multiple slot ranges separated by a space, for example, **-s** 3-5 8-10.

ge

> Displays the GbE port statistics.

ip

> Displays all GbE port statistics related to IP addresses that are not zero. This operand is not supported on the FX8-24 platform.

ip_address

> Specifies an IP address to display statistics only for the specified IP address. This operand is optional and valid only with the **ip** option.

fcip

> Displays the GbE statistics on all FCIP tunnels. This operand is not supported on the FX8-24 platform.

tunnel_number

> Specifies a tunnel ID to display statistics only for the specified FCIP tunnel. This operand is optional and valid only with the **fcip** option.

-h

> Displays the command usage.

Examples

> To display the basic set of statistics for port 1/13 on a 16Gb/s-capable platform:

```
switch:admin> portstatsshow 1/13
stat_wtx            0           4-byte words transmitted
stat_wrx            0           4-byte words received
stat_ftx            0           Frames transmitted
stat_frx            0           Frames received
stat_c2_frx         0           Class 2 frames received
stat_c3_frx         0           Class 3 frames received
stat_lc_rx          0           Link control frames received
stat_mc_rx          0           Multicast frames received
stat_mc_to          0           Multicast timeouts
stat_mc_tx          0           Multicast frames transmitted
tim_rdy_pri         0           Time R_RDY high priority
tim_txcrd_z         0           Time TX Credit Zero (2.5Us ticks)
tim_txcrd_z_vc  0- 3: 0         0         0         0
tim_txcrd_z_vc  4- 7: 0         0         0         0
tim_txcrd_z_vc  8-11: 0         0         0         0
```

```
tim_txcrd_z_vc 12-15: 0              0            0            0
tim_latency_vc  0- 3: 1              1            1            1
tim_latency_vc  4- 7: 1              1            1            1
tim_latency_vc  8-11: 1              1            1            1
tim_latency_vc 12-15: 1              1            1            1
lat_tot_pkt_vc  0- 3: 1              1            1            1
lat_tot_pkt_vc  4- 7: 1              1            1            1
lat_tot_pkt_vc  8-11: 1              1            1            1
lat_tot_pkt_vc 12-15: 1              1            1            1
lat_hi_time_vc  0- 3: 0              0            0            0
lat_hi_time_vc  4- 7: 0              0            0            0
lat_hi_time_vc  8-11: 0              0            0            0
lat_hi_time_vc 12-15: 0              0            0            0
lat_lo_time_vc  0- 3: 1              1            1            1
lat_lo_time_vc  4- 7: 1              1            1            1
lat_lo_time_vc  8-11: 1              1            1            1
lat_lo_time_vc 12-15: 1              1            1            1
max_latency_vc  0- 3: 1              1            1            1
max_latency_vc  4- 7: 1              1            1            1
max_latency_vc  8-11: 1              1            1            1
max_latency_vc 12-15: 1              1            1            1
latency_dma_ts       05-11-2015 UTC Thu 02:19:16     TXQ Latency DMA
TimeStamp
fec_cor_detected     0              Count of blocks that were corrected
by FEC
fec_uncor_detected   0              Count of blocks that were left
uncorrected by FEC
er_enc_in            0              Encoding errors inside of frames
er_crc               0              Frames with CRC errors
er_trunc             0              Frames shorter than minimum
er_toolong           0              Frames longer than maximum
er_bad_eof           0              Frames with bad end-of-frame
er_enc_out           0              Encoding error outside of frames
er_bad_os            0              Invalid ordered set
er_rx_c3_timeout     0            Class 3 receive frames discarded due
to timeout
er_tx_c3_timeout     0            Class 3 transmit frames discarded due
to timeout
er_c3_dest_unreach   0              Class 3 frames discarded due to
destination unreachable
er_other_discard     0              Other discards
er_type1_miss        0              frames with FTB type 1 miss
er_type2_miss        0              frames with FTB type 2 miss
er_type6_miss        0              frames with FTB type 6 miss
er_zone_miss         0              frames with hard zoning miss
er_lun_zone_miss     0              frames with LUN zoning miss
er_crc_good_eof      0              Crc error with good eof
er_inv_arb           0              Invalid ARB
compression_ratio    6              Average compression ratio
open                 0              loop_open
transfer             0              loop_transfer
opened               0              FL_Port opened
starve_stop          0              tenancies stopped due to starvation
```

```
fl_tenancy            0               number of times FL has the tenancy
nl_tenancy            0               number of times NL has the tenancy
zero_tenancy          0               zero tenancy
er_encr_blk           0               Encryption block errors
er_encr_short_frame   0               Encrypted frames that are too short
er_encr_discard       0               Other encrypted frames discard
phy_stats_clear_ts    04-22-2013 MDT Mon 17:08:41   Timestamp of
phy_port stats clear
lgc_stats_clear_ts    04-22-2013 MDT Mon 17:08:41   Timestamp of
lgc_port stats clear
```

To display the basic set of statistics using port index numbers:

```
switch:admin> portstatsshow -i 13
switch:admin> portstatsshow -i 13-23
switch:admin> portstatsshow -i 4-6 22-30
```

To display the basic set of statistics using slot numbers:

```
switch:admin> portstatsshow -s 3-5
switch:admin> portstatsshow -s 3-5 10-13
```

To display GbE port statistics for GbE1 on the Brocade 7810:

```
switch:admin> portstatsshow ge2
ge_stat_tx_frms        1429458584GE transmitted frames
ge_stat_tx_octets      1881856819593GE transmitted octets
ge_stat_tx_ucast_frms  1429437880GE transmitted unicast frames
ge_stat_tx_mcast_frms  0GE transmitted multicast frames
ge_stat_tx_bcast_frms  20701GE transmitted broadcast frames
ge_stat_tx_vlan_frms   1429437814GE transmitted vlan frames
ge_stat_tx_pause_frms  0GE transmitted pause frames
ge_stat_rx_frms        1415001914GE received frames
ge_stat_rx_octets      1881782890530GE received octets
ge_stat_rx_ucast_frms  1405721394GE received unicast frames
ge_stat_rx_mcast_frms  0GE received multicast frames
ge_stat_rx_bcast_frms  3076440GE received broadcast frames
ge_stat_rx_vlan_frms   1414691706GE received vlan frames
ge_stat_rx_pause_frms  0GE received pause frames
ge_err_crc             0GE CRC Errors
ge_err_carrier         0GE lost carrier sense
ge_err_jabber          0GE jabbers

ge_stat_tx_octets            1881856819593GE  transmitted octets
ge_stat_tx_pkts64octets      163317426GE  transmitted 64byte octets
ge_stat_tx_pkts65to127octets 31202660GE  transmitted 65to127byte
octets
ge_stat_tx_pkts128to255octets 8282126GE  transmitted 128to255byte
octets
ge_stat_tx_pkts256to511octets 111331GE  transmitted 256to511byte
octets
ge_stat_tx_pkts512to1023octets 171908GE  transmitted 512to1023byte
octets
ge_stat_tx_pkts1024to1518octets 519163GE  transmitted 1024to1518byte
octets
```

```
ge_stat_tx_pkts1519to2047octets 1225853973GE  transmitted
1519to2047byte octets
ge_stat_tx_pkts2048to4095octets 0GE  transmitted 2048to4095byte octets
ge_stat_tx_pkts4096to9216octets 0GE  transmitted 4096to9216byte octets
ge_stat_rx_octets                1881782890530GE  received    octets
ge_stat_rx_pkts64octets          310208GE  received    64byte octets
octets
ge_stat_rx_pkts65to127octets     180723761GE  received    65to127byte
octets
ge_stat_rx_pkts128to255octets    6236238GE  received    128to255byte
octets
ge_stat_rx_pkts256to511octets    1281148GE  received    256to511byte
octets
ge_stat_rx_pkts512to1023octets   179GE  received   512to1023byte octets
ge_stat_rx_pkts1024to1518octets  1570GE  received    1024to1518byte
octets
ge_stat_rx_pkts1519to2047octets 1226448810GE  received
1519to2047byte octets
ge_stat_rx_pkts2048to4095octets 0GE  received    2048to4095byte octets
ge_stat_rx_pkts4096to9216octets 0GE  received    4096to9216byte octets
ge_stat_rx_pfc_control_frame    0GE  Rx PFC control frame
ge_stat_tx_pfc_control_frame    0GE  Tx PFC control frame
ge_stat_rx_dvlan_tag_frame      0GE  Rx Double VLAN tag frame
ge_stat_tx_dvlan_tag_frame      0GE  Tx Double VLAN tag frame
```

To display the basic set of statistics using port index number specified in hexadecimal format:

```
switch:admin> portstatsshow -x 11f
port:  287
=========
stat_wtx            422           4-byte words transmitted
stat_wrx            560           4-byte words received
stat_ftx            16            Frames transmitted
stat_frx            16            Frames received
(output is truncated
```

See Also

portErrShow, portShow, portSwapDisable, portSwapShow

portSwap

Swaps two ports or removes swapping of ports.

Synopsis

portswap [*slot1/*]port1 [*slot2/*]port2
portswap --restore

Description

Use this command to swap the 24-bit port address (PID) for a pair of ports or to remove swapping of ports. When swapping both ports must be disabled prior to executing this command and the port-swapping feature must be enabled using **portSwapEnable**.

The result of this operation is persistent across reboots and power cycles. Use portSwapShow to display the swapped ports along with their new port address

Port swap information is kept in its own database; it cannot be manipulated by editing the configuration database displayed by **configShow** and **configUpload**. To undo a previous port swap, execute **portSwap** again on the same two ports.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

TI zoning is not supported on E_Ports or F_Ports that are configured as part of a TI Zone with ports swapped. To work around this issue, reconfigure TI zoning rather than swapping the ports.

This command is not allowed if one or both the ports are from a faulty blade.

This command is not supported on the Brocade Analytics Monitoring Platform.

Operands

This command has the following operands:

slot1

> For bladed systems only, specifies the slot number of the first port whose area number is to be swapped, followed by a slash (/).

port1

> Specifies the number of the first port whose address is to be swapped, relative to its slot for bladed systems. Use **switchShow** to display a listing of valid ports.

slot2

> For bladed systems only, specifies the slot number of the second port whose area number is to be swapped, followed by a slash (/).

port2

>   Specifies the number of the second port whose port address is to be swapped, relative
>   to its slot for bladed systems.

--restore

>   Removes swapping of all ports.

Examples

>   To swap area numbers between a pair of ports:

```
switch:admin> portswap 8/1 8/2
portswap done

switch:admin> portswapshow
PortSwap is enabled
Slot     Slotport          Swport          Address
==========================================
8        1                 193             0x01c200
8        2                 194             0x01c100
```

>   To cancel the swapping of ports:

```
switch:admin> portswap --restore
 portswap done
 switch:admin>
```

See Also

>   portDisable, portEnable, portShow, portSwapDisable, portSwapEnable, portSwapShow, switchShow

portSwapDisable

Disables the PortSwap feature.

Synopsis

```
portswapdisable
```

Description

Use this command to disable the PortSwap feature. The **portSwap** command cannot be used after this feature is disabled.

The disabled state of the PortSwap feature is persistent across reboots and power cycles.

Enabling or disabling the PortSwap feature does not affect previously performed PortSwap operations.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To disable the PortSwap feature:

```
switch:admin> portswapdisable
```

See Also

portSwap, portDisable, portEnable, portShow, portSwapEnable, portSwapShow, switchShow

portSwapEnable

Enables the PortSwap feature.

Synopsis

```
portswapenable
```

Description

Use this command to enable the PortSwap feature. The **portSwap** command cannot be used unless the feature is first enabled with this command.

The enabled state of the PortSwap feature is persistent across reboots and power cycles.

Enabling or disabling the PortSwap feature does not affect previously performed PortSwap operations.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To enable the PortSwap feature:

```
switch:admin> portswapenable
```

See Also

portSwap, portDisable, portEnable, portShow, portSwapDisable, portSwapShow, switchShow

portSwapShow

Displays the state of the PortSwap feature.

Synopsis

```
portswapshow
```

Description

Use this command to display the state of the PortSwap feature and information about swapped ports. If **portSwap** is enabled and ports have been swapped, the command displays the enabled status as well as the swapped ports and the new port address (the 24-bit PID) for these ports. If **portSwap** is disabled, the command shows the disabled status and indicates whether or not swapped ports exist on the switch.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To display a switch with PortSwap enabled and information for swapped ports:

```
Console message:

2009/10/09-21:22:45, [PSWP-1001], 482, SLOT 6 | FID 51, INFO,
DCX_105_51, PID for port 12/0 and port 12/63 are swapped.
New PID for port 12/0 is 0x697000 and port 12/63 is 0x69e3c0.

switch:admin> portswapshow

PortSwap is enabled
Slot      Slotport          Swport        Address
===============================================
12        0                 112           0x697000
12        63                895           0x69e3c0
```

To display the portSwap status on a switch when the feature is disabled and no ports are swapped:

```
switch:admin> portswapshow
PortSwap is disabled.
Existing Portswap condition is still effective.
Only future Portswap operations are not allowed.
```

```
No ports have been swapped
```

See Also

portSwap, portDisable, portEnable, portShow, portSwap, portSwapDisable, portSwapEnable, switchShow

portTest

Performs a functional test of a switch in a live fabric.

Synopsis

```
porttest
      [-ports itemlist]
      [-iteration count]
      [-userdelay time]
      [-timeout time]
      [-pattern pattern]
      [-patsize size]
      [-seed seed]
      [-listtype porttype]
```

Description

Use this command to isolate problems in a single replaceable element and to trace problems to near-end terminal equipment, far-end terminal equipment, or the transmission line. You can perform this test on a daily basis or as needed to verify the persistence of failures detected earlier.

This command verifies the functional operation of the switch by sending frames from a port's transmitter, and looping the frames back through an external fiber cable into the port's receiver. The test exercises all switch components from the main board, to the fibre cable, to the media (of the devices and the switch), and back to the main board.

The cables and media connected should be of the same type: a short-wavelength media (switch) port should be connected to another short-wavelength media (device) port using a short-wavelength cable; a long-wavelength port should be connected to a long-wavelength port, and a copper port should be connected to a copper port.

Only one frame is transmitted and received at any given time. The port LEDs flicker green while the test is running.

This command supports E_Ports, F_Ports (must support ELS Echo), L_Port, and N->N loopback ports. In addition, on switches running Fabric OS v6.4.0 and later, you can now use **portTest** on port configurations that previously caused nonspecific test results or were skipped by **portTest**. The following ports are now support the **portTest** diagnostics.

- E_Ports

- Static D_Ports

- N->N Loopback Ports

- F_Ports connected to Brocade-branded HBA

- Ports with index numbers greater than 255.

- Ports with swapped areas.

- Ports in shared area regions.

- Ports in logical switches.

- Ports in Base Switches.

- Long Distance ports.

This command is currently not supported on the following ports or switch configurations:

- Interchassis links (ICL) ports

- F_Ports connected to non-Brocade-branded HBA

- F_Ports connected to an Access Gateway

- F_Ports on VF-enabled switch

- AE_Ports

- AF_Ports

- EX_Ports

- E_Ports connected to EX_Ports

- Dynamic D_Ports

- On-demand D_Ports

- The **portTest** diagnostics is not supported in Access Gateway mode.

This command performs the following operations:

1) Initiates tests on certain ports (**portTest** command).

2) Stops active tests on certain ports (**stopPortTest** command).

3) Takes a snapshot of the test result (**portTestShow** command).

Use the **stopPortTest** command to stop the test. Refer to the **stopPortTest** help page for more information.

Use the **portTestShow** command to view the current status of **portTest**. Refer to the **portTestShow** help page for more information.

If there is a port type change during **portTest** execution, the test continues on a given port as long as it can be supported and it is asked to do so. If a request was made to test all ports on a given switch, **portTest** starts a new test appropriate for the new port type.

Notes

The test is skipped if the F_Ports are connected to non-Brocade-branded devices. The test is also skipped on F_Ports if Virtual Fabric is enabled on any platform.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

-ports *itemlist*

Specifies the list of user ports to test. By default, all user ports in the switch are tested. Refer to the **itemList** help page for more information.

-iteration *count*

Specifies the number of times (or number of frames per port) to execute this test. Specify 0 to run the test in timeout mode, or specify -1 to run the test indefinitely. The default value is 20.

-userdelay *time*

Specifies the delay between frames sent by **portTest**, in milliseconds. The default value is 10 milliseconds.

-timeout *time*

Specifies the number of seconds to run the test. The timeout option goes into effect only if iteration is set to zero. The default value of timeout is 0.

-pattern *pattern*

Specifies the pattern of the test packet payload. The pattern is selected from the set of the first twenty predefined pattern types. Use the **dataTypeShow** command to view the patterns supported with **portTest**. For each pattern, the **datTypeShow** command displays the name, the pattern type number, and an example. Specify the pattern by its type number. If *pattern* is not specified, it defaults to RANDOM (type=11).

-patsize *size*

Specifies the size of the pattern. The default pattern size is 1024 bytes. The range is 4 to 2048 bytes.

-seed *seed*

Specifies the seed value to be used with the pattern. The default seed value is 0xaa.

-listtype *porttype*

Specifies the type of ports on which to run **portTest**. Valid values for *porttype* include the following:

-1

All ports (default).

-2

All L_Ports.

-3

All F_Ports.

-4

All E_Ports.

-5

All N->N loopback ports.

Examples

To run a functional test on an active switch:

```
switch:admin> porttest -ports 1/1-1/3
```

See Also

portLoopbackTest, portTestShow, spinFab, stopPortTest

portTestShow

Displays information from **portTest**.

Synopsis

```
porttestshow [-ports itemlist]
porttestshow -i | -index [index1[-index2]]
porttestshow -x [hex1[-hex2]]
```

Description

Use this command to display a snapshot of information from **portTest**. The command output displays statistical data about past test runs and values for parameters that were set when the test was run. Refer to the **portTest** help page for more information on the displayed parameters. The output includes the following information:

Port *number*

Displays test status for the port. Values are PASS or FAIL.

PortType

Type of port tested.

PortState

Current State of **portTest**. Values are NO TEST, TESTING, or TEST DONE.

PortTypeToTest

Groups of ports tested. Values are ALL_PORTS, ALL_E_PORTS, ALL_L_PORTS, ALL_F_PORTS, ALL_LB_PORTS, or SINGLE_PORT.

Pattern

The pattern of the test packets payload.

Seed

The seed value used with the selected pattern. The default seed value is 0xaa.

UserDelay

The delay between frames sent by **portTest** in milliseconds. The default value is 10 milliseconds (ms).

TotalIteration

Total number of test iterations.

CurrentIteration

Current test iteration.

TotalFail

Total number of failed tests.

ConsecutiveFail

Number of consecutive failed tests.

StartTime

portTest start time.

StopTime

portTest end time.

Timeout

Number of timed out tests.

ErrorCode

Error code, if any.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operand:

-ports *itemlist*

Displays test results for the specified ports. This operand is optional; if omitted, data for all ports are displayed. Refer to the **itemList** help page for further details.

-index | -i *indexlist*

Displays test results for a single port or for a range of ports identified by port index numbers. You may specify index ranges separated by "-", for example, **-i** 33-47. This operand is optional, if omitted data for all ports are displayed.

-x [*indexhexlist*]]

> Displays test results for a port or a range of ports identified by port index numbers in hexadecimal format. You may specify port ranges separated by "-", for example, -x 0x21-0x26. This operand is optional, if omitted data for all ports are displayed.

Examples

> To display information from **portTest**:

```
switch:admin> porttestshow 1
Port 1 : PASS
PortType: OTHER             PortState: NO TEST
PortInternalState: INIT     PortTypeToTest: NO_TEST
Pattern: 0x0     Seed: 0x0          UserDelay: 0

TotalIteration: 0           CurrentIteration: 0
TotalFail: 0                ConsecutiveFail: 0
StartTime: NONE
StopTime:  NONE
Timeout: 0                         ErrorCode: 0
```

> To display information from **portTest** on a port specified by the index number:

```
switch:admin> porttestshow -index 32
Port 32 : PASS
PortType: E PORT                    PortState: TEST DONE
PortInternalState: INIT             PortTypeToTest: NO_TEST
Pattern: 0xb           Seed: 0xaa          UserDelay: 10

TotalIteration: 20                  CurrentIteration: 20
TotalFail: 0                        ConsecutiveFail: 0
StartTime: Wed Aug 13 06:39:59 2014
StopTime:  Wed Aug 13 06:40:19 2014
Timeout: 0                          ErrorCode: 0
```

> To display information from **portTest** on a port specified by the index number in hexadecimal format:

```
switch:admin> porttestshow -x 0x21
Port 33 : PASS
PortType: E PORT                    PortState: TEST DONE
PortInternalState: INIT             PortTypeToTest: NO_TEST
Pattern: 0xb           Seed: 0xaa          UserDelay: 10

TotalIteration: 20                  CurrentIteration: 20
TotalFail: 0                        ConsecutiveFail: 0
StartTime: Wed Aug 13 06:39:59 2014
StopTime:  Wed Aug 13 06:40:19 2014
Timeout: 0                          ErrorCode: 0
```

See Also

> portLoopbackTest, portTest, spinFab, stopPortTest

portTrunkArea

Assigns or removes a trunk area (TA) from a port or port trunk group; displays masterless F_Port trunking configuration.

Synopsis

```
porttrunkarea --enable [slot/]port1[-port2] -index port_index
porttrunkarea --disable [slot/]port1[-port2]
porttrunkarea --disable all
porttrunkarea --show disabled | enabled | trunk | all
porttrunkarea --show slot/port1[-port2]
```

Description

Use this command to assign a static trunk area (TA) on a port or port trunk group, to remove a TA from a port or group of ports in a trunk, and to display masterless F_Port trunking information. The TA is identified by the port index number displayed in the output of the **switchShow** command.

Masterless F_Port trunking interoperates between the Access Gateway (AG) and Condor-based platforms. It is designed to (1) prevent reassignments of virtual addresses when F_Ports come back online after going offline and (2) to increase N_Port bandwidth.

Assigning a TA to a port or trunk group enables F_Port masterless trunking on that port or trunk group. When a TA is assigned to a port or trunk group, the ports immediately acquires the TA as the area of their process IDs (PID). Likewise, when a TA is removed from a port or trunk group, the ports reverts to the default area as their PID.

Use the **--show** option to obtain configuration details including the following information.

Slot

On enterprise-class platforms, displays the slot number.

Port

Displays the port number.

Type

Displays online masterless trunked F_Port or EX_Port if applicable. Otherwise displays --.

State

Displays Trunk Master, Slave, or --.

Master

Displays the master port of the trunk group.

TA

On standalone switches, displays the user assigned TA number.

DA

On standalone switches, displays the default port area. The default area can be a port swapped area.

TI

On enterprise-class platforms, displays the user-assigned TA port index.

DI

On enterprise-class platforms, displays the default port index. The default port index can be a port swapped area.

The **--show trunk** option displays the following information:

Trunk Index

Displays the trunk index.

ptA->ptB

ptA indicates the local user port; **ptB** indicates the remote user port.

sp

Port speed in Gb/s.

Bandwidth

The bandwidth (Rx, Tx, and the combined total for Tx+Rx) of the trunk group. Values are displayed as either bits per second (b/s), kilobits per second (Kb/s), megabits per second (Mb/s), or gigabits per second (Gb/s), rounded down to the next integer.

Throughput

Displays the throughput (Rx, Tx, and the combined total for Tx+Rx) of the trunk group. Results are displayed for the previous second. Values are displayed as either bits per second (b/s), kilobits per second (kb/s), megabits per second (Mb/s), or gigabits per second (Gb/s), rounded down to the next integer.

%

Displays the percentage of link utilization (Rx, Tx, and the combined total for Tx+Rx) . Even when the link utilization is 100% , the throughput value will be lesser than the band-width value, due to the 8b/10b encoding and the control words transmitted. For example, the throughput for an 8Gb/s link at 100% utilization would be approximately 6.8Gb/s.

deskew

The time difference for traffic to travel over each F_Port trunk as compared to the F_Port trunk with the shortest travel time in the group. The value is expressed in nanoseconds divided by 10. For Brocade Gen 5 Platform, the firmware automatically sets the minimum deskew value of the shortest F_Port trunk travel time to 15. For Brocade Gen 6 Platform, the minimum deskew value is from 1 through 6 and is set based on the linkspeed.

Master

Identifies the master port of the trunk group.

Execution of this command is subject to the following restrictions:

- Only F_Port trunk ports are allowed to be part of a TA. E/F/L/EX_Port will be persistently disabled. Private L_Ports remain online but will not run traffic.

- Only one trunk master per TA is permitted. The second trunk master is persistently disabled.

- The entire TA trunk group shares the same port WWN.

- The port must be disabled before a TA can be assigned to a port or removed from a trunk group.

- There is one port whose Default Area is the same as its Trunk Area. You cannot remove that port from the trunk group unless The TA is removed from all ports in the trunk group.

- You must enable trunking on all ports to be included in a TA before you can create a TA. Use **portCfgTrunkPort** or **switchCfgTrunk** to enable Trunking on a port or on all ports of a switch.

- N_Port ID Virtualization (NPIV) support is provided for up to 255 devices per TA. Note that this decreases the number of devices available per port, because all participating ports share the same area.

- F_Port trunking is only supported in CORE PID formats.

- Certain port configuration features are not supported within a TA and the command fails if one of these features is enabled on a port within the trunk group. These features include FastWrite, Port Swapping, Port Mirroring, Long Distance, Interchassis links (ICL), and FICON.

- Ports included in a TA share the same port index. The original port index may be removed in the process. This means that D, I zones referring to these indices are no longer part of the switch. For details and workarounds, refer to the *Brocade Fabric OS Administration Guide*.

- Device Connection Control (DCC) Policy must be removed from ports prior to creating a TA. You can re-enable DCC policy after creating the TA.

- You cannot assign a TA while AG mode is enabled.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Masterless F_Port trunking requires an ISL Trunking license.

This command is not supported on the Brocade Analytics Monitoring Platform.

Operands

This command supports the following operands:

slot

On enterprise-class platforms, specifies the slot number, followed by a slash (/).

*port*1[-*port2*]

Specifies a single port or a port range, relative to its slot on bladed systems. For example, 9/8-15 on an enterprise-class platform indicates slot 9, ports 8 to 15. Port ranges should fall in the octet (8 port) trunk range starting from port 0 on a switch or blade.

--enable

Creates a TA assigned to the specified ports. Use this option with one of the following operands:

-area *area_number*

On single processor switches, specifies the port area number for the static TA to be created. The TA must fall within the 8 port trunk group starting from port 0 on a switch or blade. The TA must be a default area of an existing port in a given port group. However, you may add ports to the trunk group even when a trunk group has already been assigned by using the same area of the octet trunk group. Use **switchShow** for a list of valid port area or index numbers.

-index *port_index*

On enterprise-class platforms, specifies the port index for the static TA to be created. The port index must fall within the 8 port trunk group starting from port 0 on a switch or blade. The TA must be a default index of an existing port in a given port group. However, you may add ports to the trunk group even when a trunk group has already been assigned by using the same index of the octet trunk group. Use **switchShow** for a list of valid port indexes.

--disable

Removes specified ports from a TA. If a port with the same default area as the TA assigned for the trunk group is removed, all ports in the trunk group must be explicitly specified for removal.

all

Optionally removes all TA assigned ports on the switch. This option disables masterless
F_Port trunking on all ports. All TA assigned ports must be disabled for this option to
succeed.

--show

Displays masterless F_Port trunking information. When using this option, specify one of
the following operands:

[*slot/*]/*port1*[*-port2*]

Displays configuration for a specified port or port range.

trunk

Displays configuration details for the port trunk group, including user port, neighboring
user port, and master port properties.

enabled

Displays configuration details for all ports included in a user assigned TA (all ports on
which masterless F_Port trunking is enabled).

disabled

Displays configuration details for all ports not included in a user assigned TA (all ports on
which masterless F_Port trunking is not enabled).

all

Displays configuration details for all ports on a switch.

Examples

To enable masterless F_Port trunking on a standalone switch:

1)   Disable ports 10-11 by executing **portdisable** *port* for each port to be included in the TA.

2)   Enable Trunk Area for ports 10-11 with area number 37:

```
switch:admin> porttrunkarea --enable 10-11 -index 11
2009/05/15-12:43:10, [SWCH-1012], 60, FID 128, INFO,
sw0, Trunk Area (11) has been enabled for one or more ports
Trunk area 11 enabled for ports 10 and 11.
```
3)   Re-enable ports 10-11 by executing **portenable** *port* for each port in the TA.

4)   Show switch/port information:

```
switch:admin> switchshow
[...]
Index Port Address Media Speed State     Proto
==============================================
```

```
[...]
11  10    030b00   id    N4   No_Light    FC
11  11    030b00   id    N4   No_Light    FC
[...]
```

5)   Display TA-enabled port configuration:

```
switch:admin> porttrunkarea --show enabled


Port  Type   State   Master   TA  DA
-------------------------------------
 10    --      --      --      11  10
 11    --      --      --      11  11
```

To disable masterless F_Port trunking on ports 10-11:

```
switch:admin> porttrunkarea --disable 10-11
ERROR: port 11 has to be disabled
```

Disable each port prior to removing ports from the TA. Then reissue the command:

```
switch:admin> porttrunkarea --disable 10-11
Trunk area 11 disabled for ports 10 and 11.
```

To display trunk details for a user assigned TA 25 that includes ports 24-25:

```
switch:admin> porttrunkarea --show trunk
Trunk Index  25:  25->0   sp:  8.000G \
  bw: 16.000G deskew 15 MASTER
 Tx: Bandwidth 16.00Gbps, Throughput 1.63Gbps (11.84%)
 Rx: Bandwidth 16.00Gbps, Throughput 1.62Gbps (11.76%)

 Tx+Rx: Bandwidth 32.00Gbps, Throughput 3.24Gbps (11.80%)
              24->1   sp:  8.000G bw:  8.000G deskew 15
 Tx: Bandwidth 16.00Gbps, Throughput 1.63Gbps (11.84%)
 Rx: Bandwidth 16.00Gbps, Throughput 1.62Gbps (11.76%)
 Tx+Rx: Bandwidth 32.00Gbps, Throughput 3.24Gbps (11.80%)
```

To configure a TA on an enterprise-class platform including ports 13 and 14 on slot 10 with port index of 125:

1)   Disable the ports to be included in the TA.

2)   Enable TA for ports 13 and 14 on slot 10 with port index of 125:

```
 switch:admin> porttrunkarea --enable 10/13-14 -index 125
Trunk index 125 enabled for ports 10/13 and 10/14.
```

3)   Show the TA port configuration (ports still disabled):

```
switch:admin> porttrunkarea --show enabled
Slot  Port  Type   State   Master   TI  DI
-------------------------------------------
10    13    --      --      --      125 125
10    14    --      --      --      125 126
-------------------------------------------
```

4)   Enable ports 13 and 14:

```
switch:admin> portenable 10/13
switch:admin> portenable 10/14
```

5)   Show the TA port configuration after enabling the ports:

```
switch:admin> porttrunkarea --show enabled
Slot  Port  Type   State  Master   TI  DI
-------------------------------------------
10    13    F-port Master 10/13   125 125
10    14    F-port Slave  10/13   125 126
```

See Also

portCfgTrunkPort, portCfgShow, portShow, switchCfgTrunk, switchShow

portZoneShow

Displays the enforced zone type of the F_Ports and FL_Ports of a switch.

Synopsis

```
portzoneshow
```

Description

Use this command to display the enforced zone type of the F_Ports and FL_Ports of a switch.

Output shows virtual port number (decimal), physical port number (decimal), online status, and if online, port type. If the current zone configuration has been disabled by **cfgDisable**, the fabric is in non-zoning mode, in which all devices see each other. When default zoning is enabled with "No Access" mode, "No Effective configuration: (No Access)" is displayed.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To display the zone membership information of ports:

```
switch:user> portzoneshow
[OUTPUT TRUNCATED]
PORT: 160 (160)   Offline
PORT: 161 (161)   Offline
PORT: 162 (162)   Offline
PORT: 163 (163)   Offline
PORT: 164 (164)   Offline
PORT: 165 (165)   Offline
PORT: 166 (166)   Offline
PORT: 167 (167)   Offline
PORT: 168 (168)   FL-Port  Enforcement: HARD WWN \
   defaultHard: 0  IFID: 0x4332000a
PORT: 169 (169)   Offline
PORT: 170 (170)   Offline
PORT: 171 (171)   Offline
PORT: 172 (172)   Offline
PORT: 173 (173)   Offline
PORT: 174 (174)   Offline
PORT: 175 (175)   Offline
PORT: 176 (176)   F-Port  Enforcement: HARD WWN   \
   defaultHard: 0  IFID: 0x4342002a
```

```
PORT: 177 (177)    Offline
PORT: 178 (178)    Offline
PORT: 179 (179)    Offline
PORT: 180 (180)    Offline
(output truncated)
```

See Also

cfgShow, switchShow

powerOffListSet

Sets the order in which slots are powered off.

Synopsis

```
powerofflistset
```

Description

Use this command to modify the order in which slots are powered off. This command displays the current order, and then prompts you interactively to confirm or modify the power-off position for each slot.

Whenever a power supply goes out of service or a field-replaceable unit (FRU) is inserted, the system's available power is compared to the system's required power to determine if there is enough power to operate. If less than the required power is available, the power-off list is processed, until there is sufficient power for the system to operate.

If the system's power supply drops abruptly to insufficient levels, the power-off list cannot be processed. The sudden lack of power causes the CP board processors to cease executing the firmware.

For example, if only one power supply is available to power a fully loaded system and the power supply is removed from the chassis, all system operations terminate immediately, and the power-off list cannot be processed. However, if the system is running on two power supplies (this is not recommended) and one goes into a predicted fail state (in which the power supply is still supplying power), the power-off list is processed as described.

The power-off list does not affect the order, in which slots are powered on. On power-on or when an additional power supply is added, slots are processed sequentially, starting at slot 1.

Notes

CP blade slots and Core blade slots are not included in the power-off list.

Command output may vary depending on the hardware platform.

Some FRUs may use significant power, but cannot be powered off by the software. For example a missing blower FRU may change the power computation enough to affect how many slot blades can be powered up.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To modify the power-off list order on a 16Gb/s-capable platform:

```
switch:admin> powerofflistset
```

```
Slot    Current POL
-------------------
 12       1st
 11       2nd
 10       3rd
  9       4th
  4       5th
  3       6th
  2       7th
  1       8th

1st slot to be power off: (1..12) [12] 1
2nd slot to be power off: (2..12) [11] 2
3rd slot to be power off: (3..12) [10] 3
4th slot to be power off: (4..12) [9] 4
5th slot to be power off: (9..12) [9] 9
6th slot to be power off: (10..12) [10] 10
7th slot to be power off: (11..12) [11] 11
8th slot to be power off: (12..12) [12] 12

Old POL    New POL    Power Off Order
------------------------------------
  12          1          1st
  11          2          2nd
  10          3          3rd
   9          4          4th
   4          9          5th
   3         10          6th
   2         11          7th
   1         12          8th

Proceed to change the POL order? (yes, y, no, n): [no] y
```

To modify the power-off list order on a 32Gb/s-capable platform:

```
switch:admin> powerofflistset

Slot    Current POL
-------------------
 12       1st
 11       2nd
 10       3rd
  9       4th
  6       5th
  5       6th
  4       7th
  3       8th

1st slot to be power off: (3..12) [12] 3
2nd slot to be power off: (4..12) [11] 4
3rd slot to be power off: (5..12) [10] 5
4th slot to be power off: (6..12) [9] 6
5th slot to be power off: (9..12) [9] 9
6th slot to be power off: (10..12) [10] 10
```

```
7th slot to be power off: (11..12) [11] 11
8th slot to be power off: (12..12) [12] 12

Old POL     New POL     Power Off Order
-------------------------------------
  12           3            1st
  11           4            2nd
  10           5            3rd
   9           6            4th
   6           9            5th
   5          10            6th
   4          11            7th
   3          12            8th

Proceed to change the POL order? (yes, y, no, n): [no] y
```

See Also

chassisShow, powerOffListShow, psShow, slotPowerOff, slotPowerOn, slotShow

powerOffListShow

Displays the order in which slots are powered off.

Synopsis

```
powerofflistshow
```

Description

Use this command to display the order in which the physical slots are powered off.

Whenever a power supply goes out of service or a field-replaceable unit (FRU) is inserted, the system's available power is compared to the system's required power to determine if there is enough power to operate. If less than the required power is available, the power-off list is processed, until there is sufficient power for the system to operate.

The following rules apply when the power-off list is processed:

- If a power supply starts predicting failure, so that there will not be enough power for all blades, the powered-up port blades are powered down in the order in which they appear on the power-off list.

- If you replace a failed power supply, or you remedy an existing power-supply shortage by inserting a new power supply, the previously powered-down blades are powered up in the reverse order of the power-on list. Note that this is different from the order in which the blades in the system usually come up. The original powering up of blades does not consult the power-off-list; it simply proceeds from the lower-numbered slots to the higher-numbered slots.

- If you add a new blade to the chassis, and there is not enough power available to operate the additional hardware (because you may only have one power supply) the newly inserted blade will be denied power and the existing powered-on blades stay powered on.

- If the system's power supply drops abruptly to insufficient levels, the power-off list cannot be processed. The sudden lack of power causes the CP board processors to cease executing the firmware. For example, if only two power supplies are available to power a fully loaded chassis that requires at least two power supplies, and one power supply is removed from the chassis, all system operations terminate immediately, and the power-off list cannot be processed. However, if the system is running on two power supplies (this is not recommended in this case) and one goes into a predicted fail state (in which the power supply is still supplying power), the power-off list is processed as described.

Notes

Command output may vary depending on the hardware platform.

Control processor (CP) blades are not included in the power-off list.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

        None

Examples

        To display the slot power off list order on a 16Gb/s-capable platform:

```
switch:admin> powerofflistshow

Slot  1 will be powered off 1st
Slot  2 will be powered off 2nd
Slot  3 will be powered off 3rd
Slot  4 will be powered off 4th
Slot  9 will be powered off 5th
Slot 10 will be powered off 6th
Slot 11 will be powered off 7th
Slot 12 will be powered off 8th
```

        To display the slot power off list order on a 32Gb/s-capable platform:

```
switch:admin> powerofflistshow

Slot 12 will be powered off 1st
Slot 11 will be powered off 2nd
Slot 10 will be powered off 3rd

Slot  9 will be powered off 4th
Slot  4 will be powered off 5th
Slot  3 will be powered off 6th
Slot  6 will be powered off 7th
Slot  5 will be powered off 8th
```

See Also

        chassisShow, powerOffListSet, psShow, slotPowerOff, slotPowerOn, slotShow

psShow

Displays power supply status.

Synopsis

```
psshow
psshow -v
```

Description

Use this command to display the current status of the switch power supplies.

The status of each supply is displayed as:

OK

Power supply functioning correctly.

absent

Power supply not present.

unknown

Unknown power supply unit installed.

predicting failure

Power supply is present but predicting failure.

faulty

Power supply present but faulty (no power cable, power switch turned off, fuse blown, or other internal error).

For certain switch models, the OEM serial ID data displays after each power supply status line.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

-v

Displays verbose information such as the current firmware version of the power supply unit's controllers, voltage input and output, current input and output, power input and output, fans speed, temperature, etc. for each of the power supply unit (PSU) in the Brocade 6520, Brocade 7840, Brocade Analytics Monitoring Platform, and Brocade X6

Directors. Note that the PSU with faulty status is limited to display only legacy output information. The display highlights the PSU controller firmware information with an annotation recommending to upgrade to the latest firmware version using **psUtil** command if the current firmware version on the PSU is down rev.

Examples

To view the status of the power supplies in a Brocade X6 Director:

```
switch:admin> psshow

Power Supply #1 is faulty Temperature is 0.00 C
V10M32,  DUC2M32M2GL  ,23-0000161-01,A0,DELTA,ECD16020042
,00,DUC2M32M
Power Supply #2 is OK Temperature is 28.00 C
V10M12,  DUC2M12M1H4  ,23-0000161-01,A0,DELTA,ECD16020042
,00,DUC2M12M
```

To view the current firmware version of the power supplies in Brocade X6 Director:

```
switch:admin> psshow -v

Power Supply #1 is OK Temperature is 30.00 C
V10M12,  DUC2M12M1DS  ,23-0000161-01,A0,DELTA,ECD16020042
,00,DUC2M12M
Primary FW Version: 3.4
Sec LLC FW Version: 3.2
Sec COM FW Version: 3.1
Voltage input  : 211.00 V Voltage output: 49.33 V
Current input  : 1.75 A Current output: 6.75 A
Power input  : 376.00 W Power output: 332.00 W
Fan1 Speed  : 8576.00 RPM Fan2 Speed: 8896.00 RPM
Inlet Air Temp: 30 (C), 86 (F)
PFC Heat Sink: 28 (C), 82 (F)
LLC Heat Sink: 28 (C), 82 (F)

Power Supply #2 is OK Temperature is 28.00 C
V10M12,  DUC2M12M1F3  ,23-0000161-01,A0,DELTA,ECD16020042
,00,DUC2M12M
Primary FW Version:  3.0 (Down Rev. Please Upgrade to Ver 3.1)
Sec LLC FW Version:  3.0
Sec COM FW Version:  3.0 (Down Rev. Please Upgrade to Ver 3.2)
Fan1 Speed: 8768.00 RPM Fan2 Speed: 8512.00 RPM
Inlet Air Temp: 28 (C), 82 (F)
PFC Heat Sink: 26 (C), 78 (F)
LLC Heat Sink: 28 (C), 82 (F)

Power Supply #3 is faulty Temperature is 0.00 C
V10M32,  DUC2M32M2GL  ,23-0000161-01,A0,DELTA,ECD16020042
,00,DUC2M32M
```

To view the status of the power supplies in a Brocade Gen 5 device:

```
switch:admin> psshow
```

```
Power Supply #1 is OK
Airflow Direction : Non-portside Intake (Reverse)
Power Supply #2 is OK
Airflow Direction : Non-portside Intake (Reverse)
```

To view the current firmware version of the power supplies in a Brocade Gen 5 device:

```
switch:admin> psshow -v

Power Supply #1 is OK
Airflow Direction     : Non-portside Intake (Reverse)
Primary FW Version    : 2.0 (Down Rev. Please Upgrade to Ver 2.1)
Secondary FW Version  : 2.0 (Down Rev. Please Upgrade to Ver 2.3)
Voltage input         : 208.50 V        Voltage output   : 12.00 V
Current input         : 0.72 A          Current output   : 11.25 A
Power input           : 148.00 W        Power output     : 134.00 W
Fan1 Speed            : 11968.00 RPM
Inlet Air Temp        : 23 (C), 74 (F)
PFC Heat Sink         : 32 (C), 91 (F)

Power Supply #2 is OK
Airflow Direction     : Non-portside Intake (Reverse)
Primary FW Version    : 2.1
Secondary FW Version  : 2.4
Voltage input         : 208.50 V        Voltage output   : 12.00 V
Current input         : 0.61 A          Current output   : 9.00 A
Power input           : 120.00 W        Power output     : 108.00 W
Fan1 Speed            : 11968.00 RPM
Inlet Air Temp        : 23 (C), 74 (F)
PFC Heat Sink         : 33 (C), 92 (F)
```

See Also

chassisShow, fanShow, psUtil

psUtil

Upgrades the microcontroller firmware in the Brocade X6 power supplies.

Synopsis

```
psutil --version --ps number
psutil --upgrade --ps number
psutil --help
```

Description

Use this command to update the firmware for each of the three microcontrollers in the power supplies used in the X6 Directors. The three microcontrollers are:

- **PRI**: Primary Controller. Provides digital power factor correction and hold-up time extension.

- **LLC**: Digital LLC (inductor-inductor-capacitor) filter controller.

- **COM**: Communication controller. Provides I2C connectivity for the other power supply components.

The command must only be run on the systems that have power redundancy as the DC output of the power supply will be turned off during the upgrade. During this time there will be one or more EM log messages indicating the power supply is faulted.

The power redundancy is defined as:

- 2 power supplies for Brocade X6-4 Director

- 3 power supplies for Brocade X6-8 Director

The microcontrollers will automatically restart with the new images and re-enable the DC output when the image download is completed successfully. If the image download does not complete successfully, the power supply will remain in upgrade mode and the DC output remains disabled. To recover the power supply, repeat the **psutil** command.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

The total download time for all three images is approximately 8 minutes.

Operands

This command has the following operands:

--ps *number*

Specifies the power supply number.

--version

> Displays the versions of the microcontroller images in the specified power supply along with the latest versions of the firmware images included in this FOS distribution.

--upgrade

> Upgrades all three microcontroller devices in the specified power supply if their firmware versions are lower than the versions of the firmware images included in this FOS distribution.

--help

> Displays the command usage.

Examples

> To get the current and latest firmware versions:

```
switch:admin> psutil --version --ps 1
Firmware versions:   PRI   LLC  COM
Programmed:          3.0   3.0  3.0
Newest:              3.2   3.2  3.1
```

> To upgrade the microcontroller devices using the images provided with the FOS distribution:

```
switch:admin> psutil --upgrade --ps 1
Brocade PartNum: xx-xxxxxxx-01
Power Supply unit 1 FW upgrade starts
Firmware Versions: 3.3  3.0  3.0
Voltage output status: 0x80
Turn off output voltage. cmd: 0x1 data: 0x0
Voltage output status: 0x0

Controller ID: 0x30 expected boot status: 0xe
File: /fabos/factory/Brocade_GEN_6_ECD16020042_Com_Ver_3_1.bin size:
56320 pages: 220
expected CRC: 0xda9c actual CRC: 0xda9c
Controller COM: Upgrade needed: Current version 30  latest version 31
Get boot flag cmd: 0xf1 status: 0x0
Voltage output status: 0x0
Sending unlock cmd: 0xf0 0xc 0x30
Get boot flag cmd: 0xf1 status: 0xa
Set boot flag cmd: 0xf1 0x30 0x1
Get boot flag cmd: 0xf1 status: 0xe
Sending unlock cmd: 0xf0 0xc 0x30
Download firmware image
................................................................................
.....................
Sending CRC16. cmd: 0xf4 0x3 0x30 0x9c 0xda
Reset boot flag. cmd: 0xf1 0x30 0x0
Get boot flag. cmd: 0xf1 status: 0x0
FW Version: 3.3  3.0  3.1
```

```
Controller ID: 0x20 expected boot status: 0xe
File: /fabos/factory/Brocade_GEN_6_ECD16020042_LLC_Ver_3_2.bin size:
12288 pages: 48
expected CRC: 0x5cab actual CRC: 0x5cab
Controller LLC: Upgrade needed: Current version 30  latest version 32
Get boot flag cmd: 0xf1 status: 0x0
Voltage output status: 0x80
Sending unlock cmd: 0xf0 0xc 0x20
Get boot flag cmd: 0xf1 status: 0x0
Set boot flag cmd: 0xf1 0x20 0x1
Get boot flag cmd: 0xf1 status: 0x4e
Sending unlock cmd: 0xf0 0xc 0x20
Download firmware image
..............................................
Sending CRC16. cmd: 0xf4 0x3 0x20 0xab 0x5c
Reset boot flag. cmd: 0xf1 0x20 0x0
Get boot flag. cmd: 0xf1 status: 0x0
FW Version: 3.3  3.2  3.1

Controller ID: 0x10 expected boot status: 0xd
File: /fabos/factory/Brocade_GEN_6_ECD16020042_Pri_Ver_3_4.bin size:
15360 pages: 60
expected CRC: 0x6772 actual CRC: 0x0648
Controller PRI: Upgrade needed: Current version 33  latest version 34
Get boot flag cmd: 0xf1 status: 0x0
Voltage output status: 0x80
Sending unlock cmd: 0xf0 0xc 0x10
Get boot flag cmd: 0xf1 status: 0x0
Set boot flag cmd: 0xf1 0x10 0x1
Get boot flag cmd: 0xf1 status: 0x4d
Sending unlock cmd: 0xf0 0xc 0x10
Download firmware image
........................................................
Sending CRC16. cmd: 0xf4 0x3 0x10 0x48 0x6
Reset boot flag. cmd: 0xf1 0x10 0x0
Get boot flag. cmd: 0xf1 status: 0x0
FW Version: 3.4  3.2  3.1
Turn on output voltage. cmd: 0x1 data: 0x80

Power Supply unit 1 FW upgrade completed successfully
```

See Also

psShow

rasAdmin

Configures RASlog message generation.

Synopsis

```
rasadmin --enable [-log MSG-ID] [-syslog MSG-ID]
      [-module MODULE-ID]
rasadmin --disable [-log MSG-ID] [-syslog MSG-ID]
      [-module MODULE-ID]
rasadmin --set -log MSG-ID -severity value
rasadmin --show [-log MSG-ID] [-severity MSG-ID]
      [-module MODULE-ID] [-disabled] [-syslog] [-all] [-alive]
rasadmin --alive -period hours
rasadmin --quiet -enable log_type [-stime HH:MM]
      [-etime HH:MM] [-dow day_of_week]
rasadmin --quiet -disable log_type
rasadmin --quiet -show
rasadmin --help
```

Description

Use this command to enable or disable RASlog message logging for selected messages or groups of messages (modules), to change the default severity level for a specified message, to display configured RASlog settings, and to enable or disable quiet time. The **-log**, **-module**, and **-severity** configuration and display options apply to external messages (Message ID 1001-4999) and are available to any user with admin privileges.

An INFO RASlog message is generated for every message that is enabled or disabled. In addition, the list of disabled RASlog messages are collected as part of the **supportSave** command

The changes made by this command are persistent across reboots, high availability failover, and firmware downloads.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

This command does not disable messages of type FFDC or AUDIT. When you disable logging for a message that has both AUDIT and LOG attributes, the message will not be logged as a RASlog message, but it will continue to be written to the Audit log.

Operands

This command has the following operands:

--disable

Disables logging for a specified RASlog message or for all messages grouped in a RASlog module.

--enable

Enables logging for a specified RASLog message or for all messages grouped in a RASlog module.Message logging is enabled by default. This command re-enables logging of messages that were previously disabled.

One of the following options must be specified when you disable or enable message logging:

-log *MSG-ID*

Enables or disables logging for the specified message.

-log *MODULE-ID*

Enables or disables logging for all message included in the specified module.

-syslog *MSG-ID*

Enables or disables logging for an internal message.

--set -log *MSG-ID*

Changes the default severity level of the specified message.

-severity *value*

Specifies a new severity level for the message. Valid values include **INFO**, **WARNING**, **ERROR**, **CRITICAL**, and **DEFAULT**.

--show -disabled

Displays all messages that have been disabled.

--show -log *MSG-ID*

Displays the logging status of the specified message.

--show -module *MODULE-ID*

Displays the logging status of all messages included in the specified module.

--show -severity *MSG-ID*

Displays the severity of the specified messages.

--show -all

Displays all external RASlog messages, their status (enabled or disabled), their config-ured severity and their default severity.

--show -syslog

> Displays the list of internal RASLog messages that are configured to display on the system console and the syslog server.

--show -alive

> Displays the system keepalive period.

--alive -period

> Sets system keepalive period. The valid values are from 0 through 24; where 0 disables keepalive period.

--quiet -enable *log_type*

> Enables quiet time for the specified Log type. Valid values for *log_type* are 1 (audit messages), 2 (raslog messages), and 3 (both audit and raslog messages).

> The following optional operands are supported with **--quiet**. If start time and end time are not specified, the quiet time is enabled for a duration of forever.

-stime *HH:MM*

> Specifies the start time in HH:MM 24-hour clock format.

-etime *HH:MM*

> Specifies the end time in HH:MM 24-hour clock format.

-dow *day_of_week*

> Specifies the day of the week. You can specify a single day or a list of days separated by comma (1,3,7). Valid values are 1 (Monday), 2 (Tuesday), 3 (Wednesday), 4 (Thursday), 5 (Friday), 6 (Saturday), and 7 (Sunday).

--quiet -disable *log_type*

> Disables quiet time for the specified message type. Valid values for *log_type* are 1 (audit messages), 2 (raslog messages), and 3 (both audit and raslog messages).

--quiet -show

> Displays the quiet time configuration details for audit and raslog message types.

Examples

To disable logging of a single message:

```
switch:admin> rasadmin --disable -log NSM-1009
2012/07/20-13:30:41, [LOG-1005], 378, SLOT 4 | CHASSIS, INFO,
PLUTO_25, Log message NSM-1009 has been disabled.
```

To re-enable logging of a single message that was previously disabled:

```
switch:admin> rasadmin --enable -log NSM-1009
2012/07/20-13:30:41, [LOG-1005], 378, SLOT 4 | CHASSIS, INFO,
PLUTO_25, Log message NSM-1009 has been enabled.
```

To disable logging of all messages that belong to the NSM module:

```
switch:admin> rasadmin --disable -module NSM
2012/07/20-13:28:37, [LOG-1007], 375, SLOT 4 | CHASSIS, INFO,
PLUTO_25, Log Module NSM has been disabled.
```

To re-enable logging of all messages that belong to the NSM module:

```
switch:admin> rasadmin --enable -module NSM
2012/07/20-13:28:37, [LOG-1007], 375, SLOT 4 | CHASSIS, INFO, PLUTO_25,
Log Module NSM has been enabled,
```

To change the severity level of a RASlog message:

```
switch:admin> rasadmin --set -log  SEC-1203 -severity WARNING
Message       Severity
SEC-1203:     WARNING
```

To display a list of all messages that have been disabled:

```
switch:admin> rasadmin --show -disabled
Message     Status    Default Severity    Current Severity
IPAD-1002   DISABLED  INFO                INFO
IPAD-1003   DISABLED  INFO                INFO
```

To display the status and configuration of messages that belong to the specified module:

```
switch:admin>  rasadmin --show -module RM
Message     Status    Default Severity    Current Severity
RM-1001     ENABLED   INFO                INFO
RM-1023     ENABLED   INFO                INFO
RM-1024     ENABLED   INFO                INFO
RM-1020     ENABLED   INFO                INFO
RM-1021     ENABLED   INFO                INFO
RM-1022     ENABLED   INFO                INFO
```

To display the status and configuration of a specified message.

```
switch:admin>  rasadmin --show -log IPAD-1002
Message     Status    Default Severity    Current Severity
IPAD-1002   DISABLED  INFO                INFO
```

To display the status and configuration for all external messages:

```
switch:admin> rasadmin --show -all
Message     Status    Default Severity    Current Severity
FCIP-1000   ENABLED   CRITICAL            CRITICAL
FCIP-1001   ENABLED   INFO                ERROR
FCIP-1002   ENABLED   INFO                INFO
```

To enable an internal RASlog messages to be sent to syslog (this is done per instruction from support):

```
switch:admin> rasadmin --enable -syslog RAS-5001
2012/07/20-13:49:35, [LOG-1009], 385, SLOT 4 | CHASSIS, INFO, PLUTO_25,
```

```
Internal Log message RAS-5001 has been enabled for syslog logging.
```

To disable an internal RASlog messages to be sent to syslog (this is done per instruction from support):

```
switch:admin> rasadmin --disable -syslog RAS-5001
2012/07/20-13:49:35, [LOG-1010], 385, SLOT 4 | CHASSIS, INFO, PLUTO_25,
Internal Log message RAS-5001 has been disabled for syslog logging.
```

To configure quiet time for audit messages (in this example, the quiet time is enabled for a duration of forever):

```
switch:admin> rasadmin --quiet -enable 1
```

To configure quiet time for audit messages (in this example, the quiet time is automatically enabled at 22:00 daily and turns off on the next day at 02:00):

```
switch:admin> rasadmin --quiet -enable 1 -stime 22:00 -etime 02:00
```

To enable quiet time for raslog messages (in this example, quiet time is automatically enabled on Monday and Wednesday at 07:00 and turns off at 12:00):

```
switch:admin> rasadmin --quiet -enable 2 -stime 07:00 -etime 12:00 -dow 1,3
```

To disable quiet time for raslog messages:

```
switch:admin> rasadmin --quiet -disable 2
```

To display configured quiet time:

```
switch:admin> rasadmin --quiet -show
Type     QuietTime   StartTime   EndTime   DayOfWeek
------------------------------------------------------
AUDIT    ON          22:00       02:00     EVERYDAY
RASLOG   ON          07:00       12:00     MON, WED
```

To enable or disable system keepalive period:

```
switch:admin> rasadmin --alive -period 1
System keep alive audit logging configuration  set to 1 hour(s)
switch:admin>  rasadmin --show -alive
System keep alive period: 1
switch:admin>  rasadmin --alive -period 0
System keep alive audit logging configuration  set to 0 hour(s)
switch:admin>  rasadmin --show -alive
System keep alive period: 0
```

See Also

rasMan

rasMan

Displays RASlog message text and documentation.

Synopsis

rasman *message_id*
rasman --help

Description

Use this command to display documentation for a specified RASlog message. The message is specified by its message ID. The command output is identical to the documentation provided in the *Fabric OS Message Reference*. For each message, the command displays the following information:

MESSAGE

Displays the message text.

MESSAGE TYPE

Displays the message type. The message type can be one or more of the following: LOG, FFDC, or AUDIT.

CLASS

A class value is displayed for audit messages only. Supported audit classes include SECURITY, FIRMWARE, FABRIC, LS (logical switch), CLI, MAPS, and RAS.

SEVERITY

Indicates the message severity as one of the following: INFO, ERROR, WARNING, CRITICAL.

PROBABLE CAUSE

Describes what may be causing the message.

RECOMMENDED ACTION

Describes the recommended action.

Notes

This command is available to all supported Brocade roles, including root.

This command displays only external messages in the numeric range of 1000-4999.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

message_id

Specifies the message ID in the following format: <module ID>-<message number>. The message ID is case sensitive and should be entered exactly as shown in the RASlog message displayed on the console. For example, ZONE-3018 is a valid message ID, but zone-3018 is not valid.

--help

Displays the command usage.

Examples

To display documentation for a ZONE audit message:

```
switch:admin> rasman ZONE-3009
Log Messages                                          ZONE-3009(7m)

MESSAGE
     ZONE-3009 - Event: <Event Name> Status:  success,
     Info:  <Event Description>

MESSAGE TYPE
     AUDIT

CLASS
     ZONE

SEVERITY
     INFO

PROBABLE CAUSE
     Indicates that the specified zone transaction has
     been successful.

RECOMMENDED ACTION
     Verify that the event was planned. If the event was
     planned, no action is required. If the event was not
     planned, take appropriate action as defined by your
     enterprise security policy.
```

See Also

rasAdmin

reboot

Reboots the control processor (CP).

Synopsis

reboot [**-f**]

Description

Use this command to perform a "cold reboot" (power off/restart) of the control processor. This operation may be disruptive, and the command prompts for confirmation before executing. When you reboot a switch connected to a fabric, all traffic to and from that switch stops. All Fibre Channel ports on that switch including E_Ports become inactive until the switch comes back online.

The behavior of this command depends on the platform:

• When issued on a standalone (single-processor) switch, this command performs a cold reboot of the switch.

• When issued on an enterprise-class platform (Brocade X6-4 Director, Brocade X6-8 Director, DCX 8510-4, or DCX 8510-8) with two CPs (active and standby), the following rules apply:

   – When the Standby CP reboots, it goes down and there is no failover because there is no traffic on that switch. When the Standby CP comes up again, it is temporarily no longer in sync with the Active CP.

   – When the Active CP reboots, it fails over to the Standby CP. The Standby CP becomes the new Active CP and traffic is disrupted.

   – When HA is in sync, and **reboot -f** is issued on the Active CP of a director, the Standby CP takes over as the active CP without traffic disruption. If HA is not in sync, and **reboot -f** is issued on the Active CP, the Standby CP takes over as the Active CP and traffic is disrupted.

   – When HA is disabled and **reboot** or **reboot -f** is issued on the Active CP, both the Active and Standby CPs reboot with the original mastership retained. The original Active CP remains the Active CP after the reboot, and the original Standby CP remains the Standby CP. After the reboot, HA is enabled.

   – When HA is disabled and **reboot** or **reboot -f** is issued on the Standby CP, the Standby CP reboots without prompting. It boots up with the default switch only, even if the Active CP has multiple logical switches configured. After the Standby CP boots up, HA is still disabled.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

-f

>   Causes the CP to fail over to the Standby CP without affecting any of the Fibre Channel
>   Ports. Note that the recommended way to force a failover without affecting any Fibre
>   Channel ports is to issue the **haFailover** command.

Examples

To reboot a standalone switch with a single CP:

```
switch:admin> reboot
Warning: This command would cause the switch to reboot
and result in traffic disruption.
Are you sure you want to reboot the switch [y/n]? y

Broadcast message from root (pts/0) Sun Feb 28 19:49:45 2010...
The system is going down for reboot NOW !!
```

To reboot a CP on a DCX when HA is enabled:

```
switch:admin> reboot
Warning: This command is being run on a control processor (CP)
based system and will cause the active CP to reboot.
Are you sure you want to reboot the active CP [y/n]? y

Broadcast message from root (pts/0) Sun Feb 28 19:49:45 2010...

The system is going down for reboot NOW !!
```

To reboot a CP on a DCX when **haFailover** is disabled:

```
switch:admin> reboot

 This command is being run on a control processor (CP)
 based system. Because HA is disabled, it will cause both
 active CP and the standby CP to reboot. After reboot, the
 HA will be enabled.

 Do you want to continue [y/n] y

 Broadcast message from root (pts/0) Sun Feb 28 19:49:45 2010...

 The system is going down for reboot NOW !!
```

See Also

fastBoot

relayConfig

Sets and displays the relay host IP address.

Synopsis

```
relayconfig --config -rla_ip relay_ip
     -rla_dname domain_name
relayconfig --delete
relayconfig --show
relayconfig --help
```

Description

Use this command to configure or display the relay host that is used to send the Monitoring and Alerting Policy Suite (MAPS) e-mail notifications. You can configure the e-mail recipients using the **mapsConfig --emailcfg** command.

For an e-mail alert to function correctly, add the CP0 and CP1 IP addresses and host names to DNS and also set the domain name and name server. The **ipAddrShow** and **dnsConfig** commands can be used to set and verify this information.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--config

Sets the relay host IP address and domain name.

-rla_ip *relay_ip*

Specifies the IP address of the relay host.

-rla_dname *domain_name*

Specifies the domain name of the relay host.

--delete

Deletes the relay host configuration.

--show

Displays the relay host configuration.

--help

    Displays the command usage.

Examples

    To set relay host IP address:

```
switch:admin> relayconfig --config -rla_ip 10.70.212.168 \
   -rla_dname "mail.brocade.com"
```

    To display the relay host configuration:

```
switch:admin> relayconfig --show
Relay Host:       10.70.212.168
Relay Domain Name: mail.brocade.com
```

    To delete the relay host configuration:

```
switch:admin> relayconfig --delete
```

See Also

    mapsConfig

roleConfig

Manages user-defined roles.

Synopsis

```
roleconfig --add role_name [-desc description]
     [-class rbac_class_list] [-perm permission]
roleconfig --change role_name  [-class rbac_class_list
     -perm permission [-desc description
roleconfig --delete role_name [-force]
roleconfig --copy new_role -role source_role
roleconfig --show role_name | -all [default]
roleconfig --help
```

Description

Use this command to create or modify user-defined roles, to define permissions for these roles based on role-based access control (RBAC) permissions and meta-object format (MOF) classes, and to display the configured roles. Two types of access control restriction exist in Fabric OS:

- Restriction by MOF class: A MOF class groups similar Fabric OS commands into feature sets that share the same access permissions. By assigning one or more MOF classes to a role, the account with the specified role can access all the commands included in these classes. For example, the predefined role ZoneAdmin can access the commands under the MOF class Zoning, but not those under the UserManagement class. With the **role-Config** command you could define a special admin role called myzonesec and assign access to this role for both the zoning and the userManagement class.

- Restriction by RBAC access level: You can further restrict access by setting RBAC one of the following access levels for the role. The RBAC permissions are set per class.
  – O = observe
  – OM = observe-modify
  – N = none/not available

Use the **--show** option to display information about user-defined roles and default roles. Use the **classConfig** command to display information about MOF classes and associated commands. Note that you cannot modify the predefined Fabric OS roles.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--add

> Creates a role with the specified name and optional attributes. The new role is created with two default RBAC classes, "localuserenvironment" and "nocheck" and has the default permissions observe and modify ("OM). A configuration download will always reset the permissions of these two default classes to "OM."

--change

> Modifies an existing user-defined role.

role_name

> Specifies the name for the role to be created or modified. The name must be unique; it is case-insensitive and can contain only alpha characters. The role name must be at least 4 characters long and cannot exceed 16 characters. The maximum number of user-defined roles allowed on a chassis is 64. This operand is required.

> The following operands are optional with **--add** and **--change**:

-desc *description*

> Specifies a description for the role of up to 63 characters. Colons (:) are not permitted.

-class *class_list*

> Specifies one or more MOF classes to which the role should have access. Classes must be separated by commas. The requested class permissions cannot be higher than those of the Fabric OS Admin role.

-perm *permissions*

> Specifies the RBAC permissions for the role. The RBAC permissions restrict what the user can do with the commands included in the classes to which the role has access. Valid RBAC permissions include the following:

OM

> Observe and modify.

O

> Observe only.

N

> No access. This parameter is not valid with the **--add** option.

--delete *role_name* **[-force]**

> Deletes the specified user-defined role. This command prompts for confirmation unless you use the **-force** option. The role must exist in the database and the role cannot

currently be assigned to a user account. You cannot delete any of the predefined Fabric OS roles.

--copy

Clones an existing user-defined role by copying an existing role to a new role name. The new role inherits all the classes and permissions of the source role. You can further modify the newly created role. The following operands are required:

new_role

The name for the new role must be unique; it is case-insensitive and can contain only alpha characters. The role name must be at least 4 characters long and cannot exceed 16 characters.

-role *source_role*

Specified the name of the exiting role to be copied.

--show

Displays information about the specified roles. For each role, the command displays the role name, description, assigned classes and RBAC permissions for each class. The following displays options are exclusive:

role_name

Displays information about the specified user-defined role.

-all [default]

Displays a listing of all user-defined roles. When used together with the optional **-default** option, both the user-defined roles and the predefined Fabric OS roles are displayed.

--help

Displays the command usage.

Examples

To create a role with Zoning and SecurityAdmnin permissions and OM access:

```
switch:admin> roleconfig --add myzonesec \
    -d "Zone and Security Admin" -c Security,zoning -p OM
```

To change the access permissions of the previously created role and to display the results:

```
switch:admin> roleconfig --change myzonesec -c pki -p N
switch:admin> roleconfig --change myzonesec -c security -p O
switch:admin> roleconfig --change myzonesec -c zoning -p OM
switch:admin> roleconfig --show myzonesec
Role Name   : myzonesec
Description : Zone and Security Admin
```

```
        RBAC Class                              Permission

        ----------                              ----------
          Security                                  O
          Zoning                                    OM
```

```
Role permissions changed successfully.
```

To copy the role myszonesec:

```
switch:admin> roleconfig --copy superrole -r myzonesec
Role 'superrole' is copied successfully.
```

To delete a role:

```
switch:admin> roleconfig --delete -r myzonesec
You are going to delete a user defined role.
Are you sure? (yes, y , no, n) [no] y
Role 'myzonesec' is deleted successfully.
```

See Also

classConfig

ron

Configures and displays the registered organization name (RON).

Synopsis

```
ron --set org_name
ron --show
ron --help
```

Description

Use this command to configure and display the registered organization name.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Any update to **ipAddrSet** command will validate if RON has been set, and the command fails unless RON is set. This command is applicable only to chassis-based systems.

Operands

This command has the following operands:

--set *org_name*

> Sets the registered organization name with the specified name.

--show

> Displays the registered organization name configured in the system.

--help

> Displays the command usage.

Examples

To configure and display the registered organization name:

```
switch:admin> ron --set "XXXX_Organization"
Registered Organization Name will be set to: XXXX_Organization
Once changes are committed, it cannot be modified.
Are you sure you want to commit these changes? (Y/N)?y
Registered Organization Name is set successfully.
switch:admin> ron --set "YYYY_Organization"
Registered Organization Name is already set.
switch:admin> ron --show
Registered Organization Name : XXXX_Organization
```

```
Registration complete on : Sep 2017
switch:admin> ron --help
======================================================================
===============
This CLI is used to set or display Registered Organization Name. --set
is a one-time
operation. Organization name once set cannot be modified.
======================================================================
===============
ron --set org_name
               Sets Registered Organization Name. Max of 28 characters
are allowed
               for organization name. Organization name once set cannot
be modified.
ron --show
                  Displays the Registered Organization Name
ron --help
                  Displays information and usage
```

See Also

ipAddrSet

rootAccess

Configures root access through CLI.

Synopsis

```
rootaccess --set [none | consoleonly | all] [-force]
rootaccess --show
rootaccess --help
```

Description

Use this command to display and set root access settings.

Use the **--set** command to configure the root user to login to the switch through console or other interfaces such as SSH, Telnet or Web Tools, or to block root login from the interfaces. By default, access to the root account is allowed through console only. Root account must be enabled for the changes to take effect. If root account is disabled, root login through console or any interface fails with a warning message. By default, root account is disabled. You can enable or disable root account using the **userConfig** command. When access is changed, root is logged out.

Use the **--show** command to display the current root access settings.

Notes

The execution of this command is not subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--set

Modifies the root access settings. The command prompts for confirmation before root access changes take effect. Specifying no cancels the operation. The **-force** option overrides the prompting. Valid options include the following:

none

Disables logging in to the switch as root through all interfaces.

consoleonly

Allows logging in to the switch as root through console only. This is the default setting.

all

Allows logging in to the switch as root through all interfaces.

--show

> Displays the current root access settings.

--help

> Displays the command usage.

Examples

> To set root access level to 'all':
>
> ```
> switch:admin> rootaccess --set all
> ```
>
> To set root access level to 'all' without prompting for confirmation:
>
> ```
> switch:admin> rootaccess --set all -force
> ```
>
> To display root access settings:
>
> ```
> switch:admin> rootaccess --show
> RootAccess: all
> ```

See Also

> userConfig

routeHelp

Displays a list of FSPF-related commands.

Synopsis

```
routehelp
```

Description

Use this command to display a list of fabric-shortest-path-first (FSPF)-related commands.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place.
Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To display a list of routing-related commands:

```
switch:admin> routehelp

aptPolicy           Get and set Advanced Performance
                    Tuning policy
bcastShow           Print broadcast tree information
dlsReset            Turn off Dynamic Load Sharing
dlsSet              Turn on Dynamic Load Sharing
dlsShow             Print state of Dynamic Load Sharing
fspfShow            Print FSPF global information
interfaceShow       Print FSPF interface information
iodReset            Turn off In-Order Delivery
iodSet              Turn on In-Order Delivery
iodShow             Print state of In-Order Delivery
linkCost            Set or print the FSPF cost of a link
LSDbShow            Print Link State Database entry
nbrStateShow        Print neighbor's summary information
nbrStatsClear       Reset FSPF neighbor's counters
topologyShow        Print paths to domain(s)
uRouteShow          Print port's unicast routing info
```

See Also

bcastShow, interfaceShow, uRouteShow

rtLogTrace

Manages real-time trace logging.

Synopsis

```
rtlogtrace --enable
rtlogtrace --disable
rtlogtrace --show
rtlogtrace --help
```

Description

Use this command to enable or disable real-time trace logging and to indicate whether the feature is enabled or disabled.

The RTLog facility captures the most recent hardware events and low-level software interrupts on Brocade DCX platforms in real time. When enabled, the RTLog traces are collected as part of the **supportSave** utility. The RTLog generates no console output. The RTLog is enabled by default and persistent across reboots. The rtLogTrace configuration is lost after a power cycle.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--enable

Enables the RTLog on the active Control Processor (CP). The RTLog becomes effective on the standby CP after a failover or a reboot of the active CP.

--disable

Disables the RTLog.

--show

Displays the current status of the RTLog as enabled or disabled.

--help

Displays the command usage.

Examples

To enable the RTLog:

```
Switch:admin> rtlogtrace --enable
```

To disable the RTLog:

```
Switch:admin> rtlogtrace --disable
```

To display the RTLog status:

```
Switch:admin> rtlogtrace --show
```

See Also

None

sddQuarantine

Clears or displays the quarantined ports.

Synopsis

```
sddquarantine --clear [[slot/]port | all] [-force]
sddquarantine --show
sddquarantine --help
```

Description

Use this command to clear or display ports that are quarantined by the MAPS action "SDDQ".

The slow drain device quarantine (SDDQ) feature is used to automatically detect the slow-drain devices and move the slow-drain flows to a low priority virtual channel (VC) from the existing VC (medium or high) thus freeing up the resources for the regular flows in the existing VC. Due to this automatic isolation from the regular flows, the effects of the slow-drain flows on the fabric are reduced. Once the traffic flowing through an F_Port is isolated, the F_Port is marked as Slow Drain Quarantined. You can use the **--clear** option to clear the Slow Drain Quarantined state on the port.

If the quarantined ports go offline or disabled, the ports remain in Slow Drain Quarantined state. Once the ports come online, the flows destined to the port are quarantined. This command is supported both in Fabric OS and Access Gateway ports.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--clear

Clears the specified port or all ports from the Slow Drain Quarantined state. This option is not allowed if the latency or frame loss condition persists on the ports. The **-force** option overrides the default behavior. Valid options include the following:

slot

For bladed systems only, specifies the slot number for which to set or display the cost, followed by a slash (/).

port

Specifies the port number for which to set or display the cost, relative to its slot for bladed systems. Use **switchShow** to list of valid ports.

all

> Clears all the ports currently quarantined in the local switch.

-force

> Clears the quarantined ports even when the latency or frame loss condition persists. This operand is optional.

--show

> Displays all the local quarantined ports, ports on which VC translation is not enforced due to zoning count restriction, and the fabric-wide quarantined device information. The Locality column displays whether or not the device is remote, local, and/or AG-connected.

--help

> Displays the command usage.

Examples

To clear quarantined state for a port:

```
switch:admin> sddquarantine --clear 33
Initiated clearing port from quarantined state
```

To forcibly clear quarantined state for a port:

```
switch:admin> sddquarantine --clear 33 -force
Initiated clearing port from quarantined state
```

To clear quarantined state for all ports:

```
switch:admin> sddquarantine --clear all
The clear action was not initiated for the following port(s). Try with
individual ports
                3
Initiated quarantine action on other ports
```

To display the offline quarantined local ports and the online quarantined device information across the fabric:

```
switch:admin> sddquarantine --show
-----------------------------------------------------------
Ports marked as Slow Drain Quarantined in the Local Switch: 4/8
-----------------------------------------------------------

Online Quarantined Devices across the fabric
-----------------------------------------------------------
Port Index |  PID   |          PWWN           | Locality
-----------------------------------------------------------
       72     | 0a4800 | 20:03:00:11:0d:6d:01:00 | LOCAL
       79     | 0a4f0a | 10:00:8c:7c:ff:4f:cd:00 | LOCAL (AG)
       81     | 0a5101 | 30:12:50:eb:1a:9c:64:38 | LOCAL (AG)
       83     | 0a5301 | 30:17:50:eb:1a:9c:64:38 | LOCAL (AG)
```

```
       18    | 200a04 | 10:00:8c:7c:ff:14:f4:00 | REMOTE (AG)
       25    | 201906 | 30:04:03:eb:1a:9c:64:38 | REMOTE (AG)
       13    | 210d00 | 20:05:00:11:0d:b8:01:00 | REMOTE
 ----------------------------------------------------------
```

To display the offline quarantined local ports and the online quarantined device information on the Access Gateway (directly attached devices):

```
switch:admin> sddquarantine --show
-------------------------------------------------------------------
Ports marked as Slow Drain Quarantined in the Local Switch: 8
-------------------------------------------------------------------
Online Quarantined Devices in Access Gateway
-------------------------------------------------------------------
 Port Index |   PID   |          PWWN          |  Locality
-------------------------------------------------------------------
      8     | 011301  | 30:08:00:27:f8:8b:74:62 |  --
      8     | 011302  | 30:08:01:27:f8:8b:74:62 |  --
  8    | 011303  | 30:08:02:27:f8:8b:74:62 |  --
-------------------------------------------------------------------
```

See Also

mapsConfig, mapsRule, switchShow

secActiveSize

Displays the size of the active security database.

Synopsis

`secactivesize`

Description

Use this command to display the size of the active security database. The command also displays the maximum database size.

For switches running Fabric OS v6.2.0 and later, the maximum security database size is 1 megabyte per logical switch. With up to eight partitions, the total database size on a chassis can be up to 8 megabytes. On switches that are not Virtual Fabric-capable, the security database is limited to 1 megabyte. For switches running earlier versions of Fabric OS (up to v5.3.0), the maximum size is 256 Kilobytes.

Notes

The effective security DB size is the lowest supported by the fabric. The presence of a Standby CP that runs an earlier version of the operating system will drop the effective security DB size on an Active CP that runs Fabric OS v6.2.0.

The Brocade 200E is unable to handle the maximum DB size supported in v6.2.0 and issues a compact flash warning when the active security database is close to the 1 MB limit.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To display the size of the active security database:

```
switch:admin> secactivesize
   Size of security active data: 35 bytes \
   (Max 1048576 bytes)
```

See Also

secDefineSize, secGlobalShow

secAuthSecret

Manages the DH-CHAP shared secret key information.

Synopsis

```
secauthsecret --show
secauthsecret --set
secauthsecret --remove value | -all
```

Description

Use this command to manage the DH-CHAP shared secret key database used for authentication. This command displays, sets, and removes shared secret key information from the database or deletes the entire database. If you are performing set or remove operations, when the command is completed new data is saved persistently. New data is effective with the next authentication request. The configuration applies to a switch instance only.

Port level authentication security must be enabled before encryption configuration can be enabled. Pre-shared secret keys should be configured on both ends of the ISL to perform authentication. For encrypted ports, an authentication key of 32 characters is recommended. Spaces are not allowed.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--show

Lists the WWNs for which a shared secret is configured. In Access Gateway mode, since you cannot configure using domain ID or switchname, these fields will be displayed as -1 and Unknown respectively.

--set

Sets shared secrets. You can set shared secrets for F_Port, N_Port in Access Gateway mode and E, EX_Port and F_Port on Fabric OS. This command is interactive. In Access Gateway mode, you can specify only a WWN. In Fabric OS, you can specify a WWN or switchname or domain ID. Spaces are not allowed.

--remove [*wwn* | *domain* | *swname*]

Removes the specified WWN entry from the database. If a domain name is specified, it is converted to a WWN and then the entry is removed. If no option is specified, the command is interactive. In Access Gateway mode, you can specify only a WWN. In Fabric OS, you can specify a WWN or switchname or domain ID.

--remove -all

Deletes the entire secret key database.

Examples

To list the shared secret WWN:

```
switch:admin> secauthsecret --show

WWN                        DId    Name
----------------------------------------
10:00:00:60:69:80:5b:e8    1      switch
```

To list the shared secret WWN in Access Gateway mode:

```
switch:admin> secauthsecret --show

WWN                        DId    Name
----------------------------------------
10:00:00:60:69:80:5b:e8    -1     Unknown
```

To set the shared secret:

```
switch:admin> secAuthSecret --set

This command sets up secret keys for the DH-CHAP
authentication. The minimum length of a secret key
is 8 characters and maximum 40 characters. Setting
up secret keys does not initiate DH-CHAP
authentication. If switch is configured to do DH-CHAP,
it is performed whenever a port or a switch is enabled.

Warning: Please use a secure channel for setting secrets.
Using an insecure channel is not safe and may compromise
secrets.

Following inputs should be specified for each entry.

1. WWN for which secret is being set up.
2. Peer secret: The secret of the peer that
   authenticates to peer.
3. Local secret: The local secret that authenticates peer.

Press Enter to start setting up shared secrets >

Enter WWN, Domain, or switch name (Leave blank when done):
10:00:00:60:69:80:05:14
Enter peer secret:
Re-enter peer secret:
Enter local secret:
Re-enter local secret:

Enter WWN, Domain, or switch name (Leave blank when done):
Are you done? (yes, y, no, n): [no] y
```

```
Saving data to key store... Done.
```

To delete the entire secret key database:

```
switch:admin> secAuthSecret --remove -all

This command deletes database of DH-CHAP secret keys.
If a fabric requires authentication, deleting this
database may cause switch to segment from the fabric.

Do want to remove secret key database?
 (yes, y, no, n): [no] y
Deleting secret key database... Done.
```

See Also

      None

secCertMgmt

Manages certificates on a switch.

Synopsis

```
seccertmgmt
seccertmgmt generate -csr [fcap | commoncert | https | radius | ldap |
     syslog | extn -keypair_tag keypair_tag] [-type [rsa | dsa | ecdsa]]
[-keysize value]
     [-hash type] [-years value] [-f]
seccertmgmt generate -cert [https | extn -keypair_tag keypair_tag] [-type
[rsa | dsa | ecdsa]]
     [-keysize value] [-hash type] [-years value] [-f]
seccertmgmt import -cert [fcap | commoncert | https | radius | ldap |
     syslog | extn -keypair_tag keypair_tag | mgmtip] -protocol [scp | ftp]
     -ipaddr IP_address -remotedir remote_directory -certname
certificate_name
     -cacert preimported_local_ca_cert -login login_name -password
password
seccertmgmt import -ca [-client | -server] [fcap | commoncert | https |
     radius | ldap | syslog | extn] -protocol [scp | ftp]
     -ipaddr IP_address -remotedir remote_directory -certname
certificate_name
     -cacert preimported_local_ca_cert -login login_name
     -password password
seccertmgmt export -cert [fcap | commoncert | https | radius | ldap |
     syslog | extn -keypair_tag keypair_tag | mgmtip]
     -protocol [scp | ftp] -ipaddr ip_address -remotedir remote_directory
     -certname certificate_name -login login_name -password password
seccertmgmt export -ca [-client | -server] [fcap | commoncert | https |
     radius | ldap | syslog | extn] -protocol [scp | ftp]
     -ipaddr ip_address -remotedir remote_directory -certname
certificate_name
     -login login_name -password password
seccertmgmt export -csr [fcap | commoncert | https | radius | ldap |
     syslog | extn -keypair_tag keypair_tag] -protocol [scp | ftp]
     -ipaddr ip_address -remotedir remote_directory -certname
certificate_name
     -login login_name -password password
seccertmgmt delete -cert [fcap | commoncert | https | radius | ldap |
     syslog | extn [certificate_name | -keypair_tag keypair_tag] | mgmtip
certificate_name | all] [-f]
seccertmgmt delete -ca [-client | -server] [fcap | commoncert | https | radius
|
     ldap | syslog | extn certificate_name | all] [-f]
seccertmgmt delete -csr [fcap | commoncert | https | radius | ldap |
     syslog | extn -keypair_tag keypair_tag] [-f]
seccertmgmt delete -all [default | fcap | commoncert | https | radius | ldap |
     syslog | extn | mgmtip] [-f]
seccertmgmt show -cert [fcap | commoncert | https | radius | ldap |
```

```
        syslog | extn [-keypair_tag keypair_tag | certificate_name] | mgmtip
    certificate_name]
        -hexdump -all
seccertmgmt show -ca [-client | -server] [fcap | commoncert | https | radius |
        ldap | syslog | extn certificate_name | kafka] -hexdump -all
seccertmgmt show -csr [fcap | commoncert | https | radius |
        ldap | syslog | extn [-keypair_tag keypair_tag | csr_name]
        -hexdump -all
seccertmgmt --help
```

Description

Use this command to manage third-party certificates on a switch, including Public Key Infrastructure (PKI) based certificates, Lightweight Directory Access Protocol (LDAP) certificates, FCAP certificates, RADIUS certificates, syslog CA certificates, and extension platform certificates of IPsec tunnel. This command also imports or exports certificates from or to a remote host. This command supports IPV4 and IPV6 addresses.

Use this command to do the following:

- Generate a certificate or Certificate Signing Request (CSR).

- Import a certificate or CA certificate.

- Export a certificate, CA certificate, or CSR.

- Delete a certificate, CA certificate, or CSR.

- Display the contents of a certificate, CA certificate, or CSR.

This command takes an action and associated arguments. The command runs noninteractively when the arguments associated with a given action are specified on the command line. When invoked without operands, this command displays the usage.

KAFKA secure streaming is more efficient for Brocade SANnav Management Portal to gather information and data from the switch. The KAFKA certificate is imported automatically by the SANnav Management Portal and it can be removed only by the same application. You cannot manage the certificate through CLI. The certificate is imported when the switch is discovered and it will be deleted when SANnav imports a new certificate during rediscovery.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Before you import a certificate from Windows system, convert the certificate to a Unix file format with the **dos2unix** utility.

Operands

This command has the following operands:

generate

Generates a new certificate or CSR for the switch.

import

    Imports a certificate or CSR. Use this command to import a certificate from the server or to download a certificate issued by a CA after sending the CSR to the CA.

export

    Exports a certificate or CSR to a host. This command is typically used to submit a CSR to the Certification Authority (CA) that issues the certificate.

delete

    Deletes the specified certificate, CSR, or FCAP keypair.

delete -all

    Deletes all the certificates for the specified type.

show

    Lists all existing PKI-based certificates on the switch.

-cert

    Specifies a switch certificate.

-ca

    Specifies a CA certificate.

-csr

    Specifies a CSR file.

fcap | commoncert | https | radius | ldap | syslog | extn | kafka | mgmtip | https

    Specifies the certificate type.

-type [rsa | dsa | ecdsa]

    Specifies the key pair type. The **ecdsa** option is supported only with **extn** certificate type.

-keysize *value*

    Specifies the size of the key. Valid values are 1024, 2048, 4096, 8192, or P384. The greater the value, the more secure is the connection; however, performance degrades with size.

-hash *type*

    Specifies the hash type. Valid values are sha1, sha256, sha384, or sha512. The sha384 option is supported only with **extn** certificate type.

-years *value*

    Specifies the number of years the certificate is valid for.

-keypair_tag *keypair_tag*

    Specifies the key pair name to uniquely identify a keypair. This option is valid only with **extn** certificate type and is mandatory when you generate a certificate or CSR.

-protocol {scp | ftp}

    Specifies the protocol as either FTP or SCP.

-ipaddr *ip_address*

    Specifies the IP address of the remote host.

-remotedir *remote_directory*

    Specifies the remote directory. Provide a fully qualified path name.

-certname *certificate_name*

    Specifies the certificate name.

-cacert *preimported_local_ca_cert*

    Specifies the preimported local CA certificate name. This option is valid only with **extn** certificate type.

-login *login_name*

    Specifies the login name for the server.

-password *password*

    Specifies the password for the user account. When using SCP, for security reasons, do not enter a password on the command line. Use the interactive version instead. Use **CTRL-C** to skip the password.

-client

    Specifies a client CA certificate.

-server

    Specifies a server CA certificate.

-hexdump

    Displays raw hex data for all certificates.

-all

> Specifies all certificates or CSRs.

-f

> Executes without prompting for a confirmation.

Examples

> To generate a certificate for use with self-signed HTTPS:
>
> ```
> switch:admin> seccertmgmt generate -cert https -type rsa \
>    -keysize 2048 -hash sha1 -years 5
> Generating a new certificate will automatically do the following
> 1. Delete existing switch certificate(s).
> 2. Disable secure protocol HTTPS
>
>
> Warning: Certificate generation is CPU intensive and can cause high CPU
> usage
>
> Continue (yes, y, no, n): [no] y
> Generating ... ...Generated self-signed https certificate
> successfully.
> ```
>
> To generate a CSR:
>
> ```
> switch:admin> seccertmgmt generate -csr fcap -type rsa \
>    -keysize 2048 -hash sha1 -years 5
> Generating a new CSR will automatically do the following:
> 1. Delete all existing CSRs.
> 2. Delete existing switch certificate.
> 3. Reset the certificate filename to none.
>
> Warning: Key-pair generation is CPU intensive and can cause high CPU
> usage
>
> Continue (yes, y, no, n): [no] y
> Country Name (2 letter code, eg, US): US
> State or Province Name (full name, eg, California): California
> Locality Name (eg, city name): San Jose
> Organization Name (eg, company name):Company
> Organizational Unit Name (eg, department name):SQA
> Installing Private Key and Csr...
> Switch key pair and CSR generated...
> ```
>
> To import an HTTPS CA certificate from a remote host to the local switch:
>
> ```
> switch:admin> seccertmgmt import -ca -server https -protocol scp -ipaddr
> 10.10.56.56 \
>    -remotedir /home/localpath/CA -certname cacert.pem -login admin
> Password: ******
> Success: imported https certificate [cacert.pem].
> ```

```
Certificate file in configuration has been updated.
```

To import an HTTPS certificate from a remote host to the local switch:

```
switch:admin> seccertmgmt import -cert https -protocol scp
   -ipaddr 10.17.56.56 -remotedir /home/localpath/CERT -certname 92.pem -login
admin
Password: ********
```

To export an HTTPS CA certificate from the switch to the remote host:

```
switch:admin> seccertmgmt export -ca -server https -protocol scp -ipaddr
10.10.56.56 \
    -remotedir /home/vishwa/CA -certname cacert.pem -login admin
Password: ******
Success: exported https certificate [cacert.pem].
```

To export an HTTPS certificate from the switch to the remote host:

```
switch:admin> seccertmgmt export -cert https -protocol scp -ipaddr
10.17.56.56 \
    -remotedir /home/admin/CERT -certname 92.pem -login admin
Password: ********
```

To delete an HTTPS CA certificate:

```
switch:admin> seccertmgmt delete -ca -server https
WARNING!!!

About to delete https: CA file(s)

Continue (yes, y, no, n): [no] y
Deleted HTTPS ca certificate
```

To display the contents of an HTTPS certificate:

```
switch:admin> seccertmgmt show -cert https
Displaying contents of servercert.pem
Issued To
    countryName              = US
    stateOrProvinceName      = California
    localityName             = San Jose
    organizationName         = Brocade
    organizationalUnitName   = Eng
    commonName               = Brocade

Issued By
    countryName              = US
    stateOrProvinceName      = California
    localityName             = San Jose
    organizationName         = Brocade
    organizationalUnitName   = Eng
    commonName               = Brocade

Period Of Validity
Begins On              Nov 16 07:43:43 2016 GMT
Expires On             Nov 15 07:43:43 2021 GMT
```

```
Fingerprints
        SHA1 Fingerprint
6B:04:D5:CD:5C:7A:BF:9A:0B:19:3D:BA:A2:E1:E7:0C:B2:95:C7:EE
        SHA256 Fingerprint
5B:91:A1:07:A5:A7:90:51:B3:E9:A4:30:26:52:67:A4:10:8B:DC:9A:59: \
                        E8:96:A5:FB:B8:CD:86:D5:01:53:C1
```

To display the list of available certificates:

```
switch:admin> seccertmgmt show -all
ssh private key:
   Does not Exist

ssh public keys available for users:
   None

Certificate Files:
-----------------------------------------------------------------------
---------------------
Protocol   Client CA   Server CA   SW                     CSR     PVT
Key Passphrase
-----------------------------------------------------------------------
---------------------
FCAP       Empty          NA      Empty                        Empty
Empty   Empty
RADIUS   Empty       Empty   Empty                  Empty   Empty NA
LDAP     Empty       Empty   Empty                  Empty   Empty NA
SYSLOG   Empty       Empty   Empty                  Empty   Empty NA
HTTPS    NA          Empty   Empty                  Empty   Empty NA
KAFKA    NA             Empty   NA                    NA     NA    NA
List of extn files:
List of local CERT files
EXTN    NA          NA      SuiteB-79-SS.pem     Empty   Exist NA
EXTN    NA          NA       Test79.pem          Exist   Exist NA
List of remote CERT files
EXTN    NA          NA      SuiteB-78-SS.pem     NA      NA    NA
List of CA files
List of CSR files
Test79.csr
temp.csr
```

See Also

None

secCryptoCfg

Configures and displays cryptographic parameters and templates.

Synopsis

```
seccryptocfg --replace -type SSH | https [-cipher cipher_string |
      -kex value | -mac value] -force
seccryptocfg --default -type https | SSH [-force]
seccryptocfg --apply template_name
seccryptocfg --import template_name [-server ip_address -name user
      -proto scp | sftp | ftp -file remote_file_name]
seccryptocfg --export template_name [-server ip_address -name user
      -proto scp | sftp | ftp -file remote_file_name]
seccryptocfg --lstemplates
seccryptocfg --verify template_name
seccryptocfg --delete template_name
seccryptocfg --show [template_name]
seccryptocfg --help
```

Description

Use this command to perform the following functions:

- Configure cryptographic parameters such as ciphers, key exchange (kex) algorithm, and message authentication code (MAC) algorithm for SSH or HTTPS.

- Reset the cryptographic parameters to default.

- Set the template configuration.

- Import a template file.

- Export a template file.

- Display the list of templates available.

- Verify the configuration against the template.

- Delete a template file.

- Display the configured cryptographic or template parameters.

When the cryptographic parameters are configured, this command restarts the SSH or HTTPS daemon for the changes to take effect. This command prompts for confirmation unless you use the **-force** option.

A maximum of eight templates including the default templates are supported. You cannot overwrite the default configurations but can upload the configurations, edit, and then download it with a different name. You can create a new template similar to default templates, download, and apply. For more information on the format and rule of the template, refer to *Brocade Fabric OS Administration Guide*.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--replace -type SSH | https

Configures the specified ciphers, kex, and MAC algorithms for SSH or HTTPS and restarts the SSH or HTTPS daemon.

-cipher *cipher_string*

Specifies the SSH or HTTPS cipher list. You can either specify one or more ciphers separated by a comma, for example, 3des-cbc,aes128-cbc,aes192-cbc. The following ciphers are configured by default. You can modify the cipher list using this operand.

For SSH:

- aes128-ctr
- aes192-ctr
- aes256-ctr
- aes128-cbc
- 3des-cbc
- aes192-cbc
- aes256-cbc

For HTTPS:

- ECDH
- DH
- HIGH
- MD5
- CAMELLIA
- SRP
- PSK
- AESGCM

-kex *value*

Specifies the SSH kex algorithms list. You can either specify one or more kex algorithms separated by a comma, for example, ecdh-sha2-nistp256,diffie-hellman-group-

exchange-sha256. The following kex algorithms are configured by default. You can modify the kex algorithms list using this operand.

- ecdh-sha2-nistp256

- ecdh-sha2-nistp384

- ecdh-sha2-nistp521

- diffie-hellman-group-exchange-sha256

- diffie-hellman-group-exchange-sha1

- diffie-hellman-group14-sha1

- diffie-hellman-group1-sha1

-mac *value*

Specifies the SSH MAC list. You can either specify one or more MAC algorithms separated by a comma, for example, hmac-md5,hmac-sha1. The following MAC algorithms are configured by default. You can modify the MAC algorithms list using this operand.

- hmac-md5

- hmac-sha1

- hmac-sha2-256

- hmac-sha2-512

--default -type SSH | https

Resets the cipher, kex, and MAC configurations to default.

-force

Executes without prompting for a confirmation.

--apply *template_name*

Sets a default or user-defined template file. The following default templates are supported:

- default_generic

- default_strong

- default_fips

- default_cc

--import

Imports a template file from a specified external host.

--export

> Exports a template file to the specified external host.

template_name

> Specifies the template name.

-server *ip_address*

> Specifies the IP address of the remote host.

-name *user*

> Specifies the user name for the host. Depending on your host configuration, this
> command may prompt for a password.

-proto scp | sftp | ftp

> Specifies the protocol as either SCP, SFTP, or FTP.

-file *remote_file_name*

> Specifies the remote directory. Provide a fully qualified path name.

--lstemplates

> Displays the list of templates available.

--verify *template_name*

> Verifies the running configuration against a required configuration specified in the
> template file.

--delete *template_name*

> Deletes the specified template file.

--show [*template_name***]**

> Displays the configured cipher, kex, and MAC algorithms. If the template name is speci-
> fied, this command displays the configuration contents in the specified template file.

--help

> Displays the command usage.

Examples

To configure ciphers, kex, and MAC for SSH and HTTPS:

```
switch:admin> seccryptocfg --replace -type SSH -cipher \
    3des-cbc,aes128-cbc,aes192-cbc -kex diffie-hellman-group-exchange-sha1 \
```

```
            -mac hmac-sha2-256
```

To configure ciphers for SSH:

```
switch:admin> seccryptocfg --replace -type SSH -cipher \
    aes128-ctr,aes192-ctr
This command requires the daemon(s) SSH to be restarted.
Existing sessions will be terminated.
Please confirm and provide the preferred option
Press Yes(Y,y), No(N,n) [N]:y
```

To configure ciphers for HTTPS:

```
switch:admin> seccryptocfg --replace -type https -cipher \
    '!ECDH:!DH:HIGH:-MD5:!CAMELLIA'
This command requires the daemon(s) HTTP to be restarted.
Existing sessions will be terminated.
Please confirm and provide the preferred option
Press Yes(Y,y), No(N,n) [N]:no
```

To configure ciphers for HTTPS using the -force option:

```
switch:admin> seccryptocfg --replace -type https -cipher \
    '!ECDH:!DH:HIGH:-MD5:!CAMELLIA' -force
HTTP cipher list configured successfully.
```

To set the default CC configuration template:

```
switch:admin> seccryptocfg --apply default_cc
Validating....
Applying...

Template configurations applied successfully
```

To import a template file:

```
switch:admin> seccryptocfg --import cc_import -server 10.70.12.10 \
    -name brocade -proto scp -file /users/home40/brocade/default_cc
brocade@10.70.12.10's password:

Import successful
```

To export a template file:

```
switch:admin> seccryptocfg --export default_cc -server 10.70.12.10 \
    -name brocade -proto scp -file /users/home40/brocade
brocade@10.70.12.10's password:

Export successful
```

To display the list of templates available:

```
switch:admin> seccryptocfg --lstemplates

List of templates:
default_generic
default_fips
cc_import
default_strong
default_cc
```

To verify a template file:

```
switch:admin> seccryptocfg --verify default_strong
Validating ....
Verifying ....
Failed for ....
   SSH:Kex,Mac,Enc

Failed: System configuration is not compliant with input template
switch:admin> seccryptocfg --verify default_cc
Validating ....
Verifying ....
Passed: System configuration is compliant with the input template
```

To delete a template file:

```
switch:admin> seccryptocfg --delete cc_import
```

To display the configured ciphers, kex, and MAC algorithms:

```
switch:admin> seccryptocfg --show
SSH Crypto:
SSH Cipher               : aes128-ctr,aes192-ctr,aes256-ctr,aes128-
cbc,3des-cbc,aes192-cbc,aes256-cbc
SSH Kex                  : ecdh-sha2-nistp256,ecdh-sha2-nistp384,ecdh-
sha2-nistp521,diffie-hellman-group-exchange-sha256,diffie-hellman-
group-exchange-sha1,diffie-hellman-group14-sha1,diffie-hellman-
group1-sha1
SSH MAC                  : hmac-md5,hmac-sha1,hmac-sha2-256,hmac-sha2-512
TLS Ciphers:
HTTPS                    : !ECDH:!DH:HIGH:-MD5:!CAMELLIA:!SRP:!PSK:!AESGCM
RADIUS                   : !ECDH:!DH:HIGH:-MD5:!CAMELLIA:!SRP:!PSK:!AESGCM
LDAP                     : !ECDH:!DH:HIGH:-MD5:!CAMELLIA:!SRP:!PSK:!AESGCM
SYSLOG                   : !ECDH:!DH:HIGH:-MD5:!CAMELLIA:!SRP:!PSK:!AESGCM
TLS Protocol:
HTTPS                    : Any
RADIUS                   : Any
LDAP                     : Any
SYSLOG                   : Any
X509v3:
Validation               : Basic
```

To display configuration contents in a specific template file:

```
switch:admin> seccryptocfg --show default_cc
[Ver]  0.1
[SSH]
Enc:aes128-cbc,aes256-cbc
Kex:diffie-hellman-group14-sha1,ecdh-sha2-nistp256,ecdh-sha2-
nistp384,ecdh-sha2-nistp521
Mac:hmac-sha1,hmac-sha2-256,hmac-sha2-512
[AAA]
RAD_Ciphers:!ECDH:!DH:HIGH:-
MD5:!CAMELLIA:!SRP:!PSK:!AESGCM:!3DES:!aNULL
LDAP_Ciphers:!ECDH:!DH:HIGH:-
MD5:!CAMELLIA:!SRP:!PSK:!AESGCM:!3DES:!aNULL
```

```
RAD_Protocol:TLSv1.2
LDAP_Protocol:TLSv1.2
[LOG]
Syslog_Ciphers:!ECDH:!DH:HIGH:-
MD5:!CAMELLIA:!SRP:!PSK:!AESGCM:!3DES:!aNULL
Syslog_Protocol:TLSv1.2
[HTTPS]
Ciphers:!ECDH:!DH:HIGH:-MD5:!CAMELLIA:!SRP:!PSK:!AESGCM:!3DES:!aNULL
Protocol:TLSv1.2
[X509v3]
Validation:Strict
```

See Also

        None

secDefineSize

Displays the size of the defined security database.

Synopsis

```
secdefinesize
```

Description

Use this command to display the size of the defined security database. The command also displays the maximum database size.

For switches running Fabric OS v6.2.0 and later, the maximum security database size is 1 Megabyte per logical switch. With up to eight partitions, the total database size on a chassis can be up to 8 Megabytes. On switches that are not Virtual Fabric-capable, the security database is limited to 1 Megabyte. For switches running earlier versions of Fabric OS (up to v5.3.0), the maximum size is 256 Kilobytes.

The effective security DB size is the lowest supported by the fabric. The presence of a Standby CP that runs an earlier version of the operating system drops the effective security DB size on an Active CP that runs Fabric OS v6.2.0 or later.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To display the size of the defined security database

```
switch:admin> secdefinesize
   Size of security defined data: 35 bytes \
   (Max 1048576 bytes)
```

See Also

secActiveSize, secGlobalShow

secGlobalShow

Displays the current internal security state information.

Synopsis

`secglobalshow`

Description

Use this command to display security server-specific information as a snapshot of its current state. The output may include information about the following:

- General security parameters
- The latest zone transaction
- The current status of the RCS transaction
- The state of the Domain
- wwnDL state

This command is intended primarily for debugging purposes by technical support staff. The information displayed may not be supported between releases and is subject to change without notice.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To view the current security state:

```
switch:admin> secglobalshow

----General Security Information----
flag 1, saveflag 0
transId 0
Queue Size 0
final Rca 0
reliablemsg 0
reliablePhase 0
Primary pub key: Empty
Primary Version 0
Primary WWN 10:00:00:05:1e:01:23:e0 (local switch)
```

```
Stamp 0
----The latest zone transaction--
last retVal from zone: not used
last zone size when calling zone: not used
----The latest RCS STATUS----
RCS was enabled
sec_aca: free
RCS latest Phase: Completion
RCS Message ==> RCS transaction completes.
----DataBase STATUS----
Retry Role 0
Retry Query 0
Security Active DataSize 35 bytes

-----Domain State-----

Active Sum 215b
Security Defined DataSize 35 bytes
Define Sum 215b
Zone Size (include enabled configuration) 312 bytes
Zone sum e04b215b
sec_db: free
primaryDLPhase 0
----wwnDL State-----
pid     tid     key     sec     usec


--------- LOG CACHE ---------
14:08:50 813905136 secipadm_ipchange receives notification
14:08:50 850588912 secProcessIPChange starts processing
14:08:50 850588912 secProcessIPChange acks completion
(Output truncated)
```

See Also

secActiveSize, secDefineSize

secHelp

Displays information about security commands.

Synopsis

> **sechelp**

Description

Use this command to display a list of security commands with a brief description of the commands.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To display a list of security commands:

```
switch:admin> sechelp
fipscfg            Configure FIPS mode operation
secactivesize      Displays size of the active (security)
                   database
secauthcertificate Configure FCAP switch certificate properties
secauthsecret      Creates/Manages DHCHAP secret key details
seccertutil        Creates/Manages/Displays third party PKI
                   certificates
secdefinesize      Displays size of the defined (security)
                   database
secglobalshow      Displays current internal security state
                   information
secpolicyabort     Aborts changes to defined policy
secpolicyactivate  Activates all policy sets
secpolicyadd       Adds members to an existing policy
secpolicycreate    Creates a new policy
secpolicydelete    Deletes an existing policy
secpolicydump      Displays all members of existing policies
secpolicyfcsmove   Moves a member in the FCS policy
secpolicyremove    Removes members from an existing policy
secpolicysave      Saves defined policy set and sends to all
                   switches
secpolicyshow      Shows members of one or more policies
secstatsreset      Resets security statistics
```

```
secstatsshow      Displays security statistics
sshutil           Configure SSH authentication options
```

See Also

                                   None

secPolicyAbort

Aborts all unsaved changes to the defined database.

Synopsis

secpolicyabort

Description

Use this command to abort all changes to the defined security database that have not been saved to flash memory and to abort changes to policy creation and modification operations from all the switches if a fabric-wide consistency policy is not set for the particular policy.

Notes

When an FCS policy is enabled, this command can be issued only from the Primary FCS switch.

Only the user who made the changes to the defined database may use this command to abort them.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To abort all changes that have not been saved to nonvolatile memory:

```
primaryfcs:admin> secpolicyabort
Unsaved data has been aborted.
primaryfcs:admin> secpolicyabort
No new data to abort.
```

See Also

secPolicyActivate, secPolicyAdd, secPolicyDelete, secPolicyDump, secPolicyRemove, secPolicySave, secStatsShow

secPolicyActivate

Saves and activates the Defined Security Policy Set.

Synopsis

`secpolicyactivate`

Description

Use this command to activate the current defined security policy to all switches in the fabric. This activates the policy set on the local switch or all switches in the fabric depending on the fabric-wide consistency policy.

If there are changes to the SCC, DCC, or FCS policies in the current CLI or API transaction that have not been saved to the Defined Security Policy Set, then this command saves the changes to the Defined Security Policy Set first, and then activates it. If there are no changes, but the Defined Security Policy Set differs from the Active Security Policy Set, then the Defined Security Policy Set is activated. If there are no changes and the Defined Security Policy Set is the same as the Active Security Policy Set, then nothing is done.

After activation the defined policy set becomes the Active Policy Set.

Use **secPolicyShow** to display the members of an existing policy in the Active or Defined Security Policy Sets.

Notes

The behavior of this command is the same for tolerant and strict fabric-wide consistency.

When an FCS policy is enabled, this command can be issued only from the Primary FCS switch.

Any modifications to the SCC, DCC, and FCC DB are saved and activated. When **secPolicyActivate** is issued after the **secPolicySave** command, it might fail.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To activate the defined security policy set on all switches in the fabric:

```
switch:admin> secpolicyactivate
About to overwrite the current Active data.
ARE YOU SURE (yes, y, no, n): [no] y
secpolicyactivate command was completed successfully.
```

See Also

fddCfg, secPolicyAdd, secPolicyDelete, secPolicyDump, secPolicyShow

secPolicyAdd

Adds members to an existing security policy.

Synopsis

secpolicyadd "*name*","*member*[;*member*...]" [**-legacy**]

Description

Use this command to add one or more members to an existing access policy.

Each policy corresponds to a management method. The list of members of a policy acts as an access control list for that management method. Before a policy is created, there is no enforcement for that management method; all access is granted. After a policy has been created and a member has been added to the policy, that policy becomes closed to all access except from included members. If all members are then deleted from the policy, all access is denied for that management method (the DCC_POLICY is an exception).

Attempting to add a member to a policy that already is a member causes this command to fail.

In a Virtual Fabric Environment, when you create a DCC lockdown policy on a logical switch, the DCC policy is created for each port in the chassis, even though the ports are not currently present in the local logical switch. This is done to provision the DCC policy for the ports that may be moved later. If a policy seems stale at any point, use **secPolicyDelete** to remove all stale DCC policies.

Fabric-wide consistency policies can be configured on per logical switch basis, which applies the FCS policy to the corresponding fabric connecting to the logical switch. Automatic policy distribution for DCC, SCC and FCS remains unchanged in Fabric OS v6.2.0 and can be configured on a per logical switch basis.

On switches running Fabric OS v7.1.0 or later, all DCC and SCC security policy members are sorted based on their world wide names (WWNs) in order to avoid a segmentation of ports. This is not the case for switches running earlier firmware versions; on these switches, security member lists are unsorted. When a switch with an unsorted security policy member list tries to join a switch that runs Fabric OS v7.1.0 or later and is configured with an ordered security policy list, port segmentation occurs because of mismatching security policy lists. To prevent this from happening, use the **-legacy** option to add security policy members in a manner that matches the order of security policy members in Fabric OS v7.0.0 and earlier.

Notes

When an FCS policy is enabled, this command can be issued only from the Primary FCS switch. The **secpolicyadd** command can be issued on all switches for SCC and DCC policies as long as fabric-wide consistency policy is not set for the particular policy.

Do not add the WWNs of front or translate (xlate) domains to the FCS policy if the edge fabric is connected to an FC Router.

Backup FCS switches typically cannot modify the policy. However, if the Primary FCS switch in the policy list is not reachable, then a backup FCS switch is allowed to modify the policy. If all the reachable backup FCS switches are running pre-v5.3.0 versions of Fabric OS, a non-FCS v5.3.0 switch is allowed to modify the policy so that a new switch can be added to the policy.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

"*name*"

Specify the name of an existing policy to which you want to add members. Valid values for this operand include the following:

- DCC_POLICY_*nnn*

- FCS_POLICY

- SCC_POLICY

The specified policy name must be capitalized.

The DCC_POLICY_*nnn* name has the common prefix DCC_POLICY_ followed by a string of user-defined characters. These characters do not have to be capitalized like regular policy names, but they are case-sensitive.

"*member*"

Specify a list of one or more member switches to be included in the security policy. The list must be enclosed in quotation marks; members must be separated by semicolons. Depending on the policy type, members are specified as follows.

FCS_POLICY or SCC_POLICY Members

This policy type requires member IDs to be specified as WWN strings, Domains, or switch names. If Domain IDs or switch names are used, the switches associated must be present in the fabric or the command fails.

DCC_POLICY Members

The DCC_POLICY_*nnn* is a list of device port names associated with a specific switch and port index combination. An empty DCC_POLICY does not stop access to the switch. The device port name is specified by its port WWN string. The switch and port index combination must be in the *switch port*format, where *switch* can be specified as a WWN, a domain, or a switch name, and *port* is specified by port numbers separated by commas and enclosed in either brackets or parentheses; for example, (2, 4, 6). Ports enclosed in brackets include the devices currently attached to those ports.

The following examples illustrate several ways to specify the port values:

(1-6)

Selects ports 1 through 6.

(*)

> Selects all ports on the switch.

[3, 9]

> Selects ports 3 and 9 and all devices attached to those ports.

[1-3, 5]

> Selects ports 1 through 3 and 5 and all devices attached to those ports.

[*]

> Selects all ports on the switch and devices currently attached to those ports.

-legacy

> Adds a security policy with the desired order.

Examples

To add a member to the SCC_POLICY using the device WWN:

```
primaryfcs:admin> secpolicyadd "SCC_POLICY", \
     "12:24:45:10:0a:67:00:40"
Member(s) have been added to SCC_POLICY.
```

To add two devices to attach to domain 3, ports 1 and 3, in an existing empty DCC policy; the port WWN of the first device is 11:22:33:44:55:66:77:aa and port WWN of the second device is 11:22:33:44:55:66:77:bb:

```
primaryfcs:admin> secpolicyadd "DCC_POLICY_abc", \
     "11:22:33:44:55:66:77:aa;11:22:33:44:55:66:77:bb;3(1,3)"
Member(s) have been added to DCC_POLICY_abc.
```

To add a security policy:

```
switch:admin> secpolicyadd SCC_POLICY,\
   "10:00:00:05:1e:a3:01:d9" -legacy
switch:admin> secpolicyshow

_____
           ACTIVE POLICY SET

_____
           DEFINED POLICY SET
SCC_POLICY
   WWN                     DId swName
   -------------------------------------
   10:00:00:05:1e:a1:ef:b9   2 sw0
   10:00:00:05:1e:a3:00:59   5 sw0
   10:00:00:05:1e:a2:f9:09   3 sw0
   10:00:00:05:1e:a3:01:d9   3 sw0
```

See Also

fddCfg, secPolicyActivate, secPolicyDelete, secPolicyDump

secPolicyCreate

Creates a new security policy.

Synopsis

secpolicycreate "*name*" [, "*member*[;*member*...]"] [**-legacy**]

Description

Use this command to create a new policy and to edit Switch Connection Control (SCC), Device Connection Control (DCC), and Fabric Configuration Server (FCS) policies on the local switch. All policies can be created only once, except for the DCC_POLICY_*nnn*. Each DCC_POLICY_*nnn* must have a unique *name*. This command can be issued on all switches in the current fabric for SCC and DCC policies if they are not intended to be fabric-wide.

Adding members while creating a policy is optional. You can add members to a policy later, using the **secPolicyAdd** command.

Each policy corresponds to a management method. The list of members of a policy acts as an access control list for that management method. Before a policy is created, there is no enforcement for that management method, which is all access is granted. After a policy is created and a member is added to the policy, that policy is closed to all access except to included members. If all members are then deleted from the policy, all access is denied for that management access method.

All newly created policies are saved on the local switch only, unless the switch has a fabric-wide consistency policy for that policy.

In a Virtual Fabric environment, when you create a DCC lockdown policy on a logical switch, the DCC policy is created for each port in the chassis, even though the ports are not currently present in the local logical switch. This is done to provision the DCC policy for the ports that may be moved later. If a policy seems stale at any point, use the **secPolicyDelete** command to remove all stale DCC policies.

Fabric wide consistency policies can be configured on a logical switch basis, which applies the FCS policy to the corresponding fabric connecting to the logical switch. Automatic policy distribution behavior for DCC, SCC and FCS remains unchanged in Fabric OS v6.2.0 or later and can be configured on a logical switch basis.

On switches running Fabric OS v7.1.0 or later, all DCC and SCC security policy members are sorted based on their world wide names (WWNs) in order to avoid a segmentation of ports. This is not the case for switches running earlier firmware versions; on these switches, security member lists are unsorted. When a switch with an unsorted security policy member list tries to join a switch that runs Fabric OS v7.1.0 or later and is configured with an ordered security policy list, port segmentation occurs because of mismatching security policy lists. To prevent this from happening, use the **-legacy** option to create security policy members in a manner that matches the order of security policy members in Fabric OS v7.0.0 and earlier.

Notes

When an FCS policy is enabled, this command can be issued only from the Primary FCS switch.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

"*name*"

Specify the name of the policy you want to create. Valid values for this operand include the following:

- DCC_POLICY_*nnn*

- SCC_POLICY

- FCS_POLICY

The specified policy name must be capitalized.

The DCC_POLICY_*nnn* name has the common prefix DCC_POLICY_ followed by a string of user-defined characters. These characters do not have to be capitalized like regular policy names. Valid values for DCC_POLICY_*nnn* are user-defined alphanumeric or underscore characters. The maximum length is 30 characters, including the prefix DCC_POLICY_.

secpolicycreate DCC_POLICY "*" may be used to indicate DCC lockdown. This command creates a unique policy for each port in the fabric locking it down to the device connected or creating an empty policy to disallow any device to be connected to it. This can be done only when there are no other DCC policies defined on the switch. The switch must be in an enabled state for DCC lockdown to succeed. On a disabled switch, executing **secpolicycreate** DCC_POLICY "*" will not create any DCC policies.

"*member*"

Specify one or more members to be included in the security policy. The member list must be enclosed in double quotation marks and members separated by semicolons. The member list must be separated from the name field by a comma and a space. Depending on the policy type, members are specified as follows:

DCC_POLICY Members

The DCC_Policy_*nnn* is a list of devices associated with a specific switch and port index combination. An empty DCC_POLICY does not stop access to the switch. The device is specified by its port WWN. The switch and port combination must be in the switch*port*-format.

switch can be specified using a WWN, domain, or switch name.

port can be specified by port numbers separated by commas and enclosed in either brackets or parentheses: for example, (2, 4, 6). Ports enclosed in brackets include the devices currently attached to those ports.

The following examples illustrate several ways to specify the port values:

(1-6)

Selects ports 1 through 6.

(*)

Selects all ports on the switch.

[3, 9]

Selects ports 3 and 9 and all devices attached to those ports.

[1-3, 5]

Selects ports 1 through 3 and 5 and all devices attached to those ports.

[*]

Selects all ports on the switch and devices currently attached to those ports.

SCC_POLICY and FCC_POLICY Members

This policy type requires member IDs to be specified as WWN strings, domains, or switch names. If domain or switch names are used, the switches associated must be present in the fabric or the command fails.

To add all switches in the current fabric as members of the policy, enter an asterisk enclosed in quotation marks (*) as the member value. This feature cannot be used by the other security commands.

-legacy

Creates a security policy with desired order.

Examples

To create an FCS policy (While creating the FCS policy, the local switch WWN is automatically included in the list. Switches included in the FCS list are FCS switches and the remaining switches in the fabric are non-FCS switches. Out of the FCS list, the switch that is in the first position becomes the Primary FCS switch and the remaining switches become backup FCS switches. If the first switch in the FCS list is not reachable, the next switch becomes the Primary):

```
primaryfcs:admin> secpolicycreate "FCS_POLICY", "3; 4"
FCS_POLICY has been created.
```

To create a device policy to allow two devices to attach to domain 3 ports 1 and 3 (the WWN of first device is 11:22:33:44:55:66:77:aa and the WWN of second device is 11:22:33:44:55:66:77:bb):

```
primaryfcs:admin> secpolicycreate "DCC_POLICY_aB_7", \
     "11:22:33:44:55:66:77:aa;11:22:33:44:55:66:77:bb;3[1,3]"
```

```
DCC_POLICY_abc has been created.
```

To create a SCC policy in a fabric with three switches:

1)   Check if a policy exists.

```
switch:admin> secpolicyshow

_____
                  ACTIVE POLICY SET

_____
                  DEFINED POLICY SET
```

2)   Identify switches in the fabric.

```
switch:admin> fabricshow
Switch ID    Worldwide Name        Enet IP Addr FC IP Addr Name
---------------------------------------------------------------
2:fffc02 10:00:00:05:1e:39:5f:67 10.32.69.53 10.20.30.53 "sw1"
                              fec0:60:69bc:60:260:69ff:fe80:d4a
4:fffc04 10:00:00:05:1e:04:ef:0e 10.32.69.49 10.20.30.49 'sw2"
                              fec0:60:69bc:54:205:1eff:fe04:ef0e
200: fffcc8 10:00:00:05:1e:35:cd:ef 10.32.69.117 10.20.30.117 \
                                        "nSW4100_98"
```

3)   Create a SCC policy that includes switches with domain IDs 2 and 4.

```
switch:admin> secpolicycreate "SCC_POLICY","2;4"
 SCC_POLICY has been created.
```

4)   Activate the policy.

```
switch:admin> secpolicyactivate
 About to overwrite the current Active  Policy Set.
 ARE YOU SURE  (yes, y, no, n): [no] y
 secpolicyactivate command was completed successfully.
```

   To create an SCC policy that includes all switches in the fabric:

```
switch:admin> secpolicycreate "SCC_POLICY",*
 SCC_POLICY has been created.
```

To create a security policy:

```
switch:admin> secpolicycreate SCC_POLICY,\
   "10:00:00:05:1e:a1:ef:b9; 10:00:00:05:1e:a3:00:59; \
   10:00:00:05:1e:a2:f9:09" -legacy
SCC_POLICY created as user specified.
switch:admin> secpolicyshow

_____
            ACTIVE POLICY SET

_____
            DEFINED POLICY SET
SCC_POLICY
   WWN                   DId swName
   -----------------------------------
   10:00:00:05:1e:a1:ef:b9   2 sw0
   10:00:00:05:1e:a3:00:59   5 sw0
   10:00:00:05:1e:a2:f9:09   3 sw0
```

See Also

fddCfg, secPolicyActivate, secPolicyAdd, secPolicyDelete, secPolicyDump

secPolicyDelete

Deletes an existing security policy.

Synopsis

secpolicydelete *name*

Description

Use this command to delete an existing security policy from the defined security database. Run **secPolicyActivate** to delete the policies from the active security policy list. Deleting a security policy does not cause any traffic disruption.

Each policy corresponds to a management method. The list of members of a policy acts as an access control list for that management method. Before a policy is created, there is no enforcement for that management method; all access is granted. After a policy has been created and a member has been added to the policy, that policy becomes closed to all access except from included members. If the policy is deleted all access is granted.

Notes

When an FCS policy is enabled, this command can be issued only from the Primary FCS switch.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

The following operand is required:

"*name*"

Specify the name of a security policy to delete. The policy name must be capitalized. Quotation marks are optional. Once a security policy is deleted, fabric-wide switch access through that method is unrestricted. Valid security policy names include the following:

DCC_POLICY_nnn

Deletes the specified Device Connection Control (DCC) policy. The DCC_POLICY_nnn name has the common prefix DCC_POLICY_ followed by a string of user-defined characters. These characters do not have to be capitalized.

ALL_DCC_POLICY

Deletes all DCC policies from the defined policy list.

ALL_STALE_DCC_POLICY

> Deletes all stale DCC policies from the defined policy list. DCC policies become stale when the ports are removed from a logical switch.

SCC_POLICY

> Deletes the Switch Connection Control policy from the defined policy list.

FCS_POLICY

> Deletes the Fabric Configuration Server policy from the defined policy list.

Examples

To delete an existing security policy:

```
switch:admin> secpolicydelete "DCC_POLICY_ab1"
About to delete policy DCC_POLICY_ab1.
Are you sure (yes, y, no, n):[no] y
DCC_POLICY has been deleted.
```

To delete all existing DCC policies in the fabric:

```
primaryfcs:admin> secpolicydelete ALL_DCC_POLICY
  About to clear all the DCC policies
  ARE YOU SURE  (yes, y, no, n): [no] y
```

To delete all stale DCC policies in the fabric:

```
primaryfcs:admin> secpolicydelete ALL_STALE_DCC_POLICY
About to clear all STALE DCC policies
ARE YOU SURE  (yes, y, no, n): [no] y
```

See Also

secPolicyActivate, secPolicyAdd, secPolicyCreate, secPolicyDump, secPolicyShow

secPolicyDump

Displays the members of one or all existing security policies.

Synopsis

    secpolicydump ["listtype"][,"name"]

Description

Use this command to display, without page breaks, the members of an existing policy in the active and defined (saved) databases. When issued without operands, this command displays the members of all security policies.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

This command can be issued from all FCS switches in the fabric.

Operands

This command has the following optional operands:

"*listtype*"

Specifies the database to display, enclosed in double quotation marks. The name for an active database is "Active"; the name for a saved, defined database is "Defined". If *listtype* is not specified, all databases are displayed.

"*name*"

Specifies the security policy for which to display the members. Valid values for this operand include the following:

- DCC_POLICY_*nnn*

- FCS_POLICY

- SCC_POLICY

The specified policy name must be capitalized and enclosed in double quotation marks.

The DCC_POLICY_*nnn* name has the common prefix DCC_POLICY_ followed by a string of user-defined characters. These characters do not have to be capitalize. If *name*is not specified, all existing policies are displayed.

Examples

To display all security policy information from all databases without page breaks:

```
switch:admin> secpolicydump
   ACTIVE POLICY SET
FCS_POLICY
Pos Primary WWN                    DId swName

_____
1    Yes    10:00:00:60:69:30:15:5c 1 primaryfcs
2     No    10:00:00:60:69:30:1e:62 4 switch

_____
_____
         DEFINED POLICY SET
FCS_POLICY
Pos Primary WWN                    DId swName

_____
1    Yes    10:00:00:60:69:30:15:5c 1 primaryfcs
2     No    10:00:00:60:69:30:1e:62 4 switch
_____
```

To display all security policies in the active database:

```
switch:admin> secpolicydump "active"


_____
               ACTIVE POLICY SET
FCS_POLICY
  Pos    Primary WWN                    DId swName
  ---------------------------------------------------
    1    Yes    10:00:00:05:1e:39:5f:67 3 NeptuneSec
    2    No     10:00:00:05:1e:90:09:4a   - Unknown

SCC_POLICY
  WWN                    DId swName
  ---------------------------------------------------
  10:00:00:05:1e:39:5f:67   3 NeptuneSec
  10:00:00:05:1e:90:09:4a   - Unknown

DCC_POLICY_h1
  Type    WWN                    DId swName
  ---------------------------------------------------
  Switch  10:00:00:05:1e:39:5f:67   3 NeptuneSec.
  =Index=> 34.
  Device  21:00:00:e0:8b:13:5e:8d
  Device  21:00:00:e0:8b:13:5e:8e
```

To display all security policies in the defined database:

```
switch:admin> secpolicydump "Defined"

_____
               DEFINED POLICY SET
FCS_POLICY
  Pos    Primary WWN                    DId swName
  ---------------------------------------------------
    1    Yes    10:00:00:05:1e:39:5f:67 3 NeptuneSec
    2    No     10:00:00:05:1e:90:09:4a - Unknown

SCC_POLICY
```

```
    WWN                        DId swName
    -------------------------------------------------
    10:00:00:05:1e:39:5f:67    3 NeptuneSec
    10:00:00:05:1e:90:09:4a    - Unknown

DCC_POLICY_h1
    Type    WWN                       DId swName
    -------------------------------------------------
    Switch  10:00:00:05:1e:39:5f:67    3 NeptuneSec.
    =Index=> 34.
    Device  21:00:00:e0:8b:13:5e:8d
    Device  21:00:00:e0:8b:13:5e:8e
```

To display the FCS policies in the defined database:

```
switch:admin> secpolicydump "Defined","FCS_POLICY"

_____
            DEFINED POLICY SET
FCS_POLICY
  Pos    Primary WWN                    DId swName
  -------------------------------------------------
    1    Yes     10:00:00:05:1e:39:5f:67 3 NeptuneSec
    2    No      10:00:00:05:1e:90:09:4a - Unknown
```

To display the SCC policies in the defined database:

```
switch:admin> secpolicydump "Defined","SCC_POLICY"

_____
            DEFINED POLICY SET
SCC_POLICY
  WWN                        DId swName
  -------------------------------------------------
  10:00:00:05:1e:39:5f:67    3 NeptuneSec
  10:00:00:05:1e:90:09:4a    - Unknown
```

To display the SCC policies in the active database:

```
switch:admin> secpolicydump "Active","SCC_POLICY"

_____
            ACTIVE POLICY SET
SCC_POLICY
    WWN                        DId swName
    -------------------------------------------------
    10:00:00:05:1e:39:5f:67    3 NeptuneSec
    10:00:00:05:1e:90:09:4a    - Unknown
```

See Also

secPolicyActivate, secPolicyAdd, secPolicyCreate, secPolicyDelete, secPolicyShow

secPolicyFCSMove

Moves a member in the FCS policy.

Synopsis

secpolicyfcsmove [*from, to*]

Description

Use this command to move an FCS member from one position to another position in the FCS list. Only one FCS can be moved at a time. The first FCS switch in the list that is also present in the fabric is the Primary FCS.

Notes

If a backup FCS is moved to the first position, it becomes the primary FCS after activation.

An FCS policy must be enabled to execute this command, and the command must be issued from the primary FCS switch.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

from

Specify the position of the FCS switch you want to move.

to

Specify the position to which you want to move the FCS switch.

Examples

To move the backup FCS switch from position 2 to position 3 in the FCS list (interactively):

```
switch:admin> secpolicyfcsmove
Pos    Primary WWN                     DId swName.
=================================================
 1   Yes     10:00:00:60:69:10:02:18   1 switch5.
 2   No      10:00:00:60:69:00:00:5a   2 switch60.
 3   No      10:00:00:60:69:00:00:13   3 switch73.

Please enter position you'd like to move \
   from  : (1..3) [1] 2

Please enter position you'd like to move \
   to  : (1..3) [1] 3
```

```
_____
                DEFINED POLICY SET

FCS_POLICY
 Pos    Primary WWN                    DId swName
_____

  1    Yes     10:00:00:60:69:10:02:18   1 switch5.
  2    No      10:00:00:60:69:00:00:13   3 switch73.
  3    No      10:00:00:60:69:00:00:5a   2 switch60.
_____
```

To move Backup FCS switch from position 3 to position 1 in the FCS list(non-interactively):

```
switch:admin> secpolicyshow

_____
    ACTIVE POLICY SET
1   Yes     10:00:00:05:1e:39:5f:67   2 switch1
2   No      10:00:00:05:1e:04:ef:0e   4 switch2
3   No      10:00:00:05:1e:35:cd:ef 200 switch3


switch:admin> secpolicyfcsmove 3,1

_____
        DEFINED POLICY SET
FCS_POLICY
Pos    Primary WWN                    DId swName
---------------------------------------------------
1   No      10:00:00:05:1e:35:cd:ef 200 switch3
2   Yes     10:00:00:05:1e:39:5f:67   2 switch1
3   No      10:00:00:05:1e:04:ef:0e   4 switch2


switch:admin> secpolicyactivate
About to overwrite the current Active  Policy Set.
ARE YOU SURE  (yes, y, no, n): [no] y
secpolicyactivate command was completed successfully.


switch:admin> secpolicyshow

_____
        ACTIVE POLICY SET
FCS_POLICY
Pos    Primary WWN                    DId swName
---------------------------------------------------
1   Yes     10:00:00:05:1e:35:cd:ef 200 switch3
2   No      10:00:00:05:1e:39:5f:67   2 switch1
3   No      10:00:00:05:1e:04:ef:0e   4 switch2
```

See Also

secPolicyActivate, secPolicyAdd, secPolicyCreate, secPolicyDelete, secPolicyDump, secPolicyShow

secPolicyRemove

Removes members from an existing security policy.

Synopsis

secpolicyremove *"name" ,"member[;member...]"*

Description

Use this command to remove one or more members from an existing security policy. It is not possible to remove all members from the FCS_POLICY; the local switch WWN cannot be deleted from the FCS policy. In the case of SCC policy, if it is empty after removing all members, all access to the switch itself would be disallowed.

Beginning Fabric OS v7.3, this command will not remove the local WWN from SCC policy list in HIF and non-HIF mode. The command also prompts for confirmation before removing any member if HIF is enabled.

Notes

If an FCS policy is enabled, this command must be issued from the primary FCS switch.

After removing members from an existing security policy, execute the **secPolicyActivate** command to activate the current defined policy.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

"*name*"

Specify the name of an existing policy you want to remove members from. This operand is required. Valid values for this operand include the following:

- DCC_POLICY_*nnn*

- FCS_POLICY

- SCC_POLICY

The specified policy name must be capitalized.

The DCC_POLICY policy name has the common prefix DCC_POLICY_ followed by a string of user-defined characters. These characters do not have to be capitalized like regular policy names, but are case-sensitive.

"*member*"

Specify a member or list of members to delete from the policy. The list must be enclosed in quotation marks; members must be separated by semicolons. This operand is required. Depending on the policy type, members can be specified using IP address, WWN, domain, or switch name.

WWN Member Policy Types

The following policy types require members be specified by WWN address:

- FCS_POLICY

- SCC_POLICY

These policy types require member IDs be specified as WWN strings, domains, or switch names. If domain or switch names are used, the switches associated must be present in the fabric or the command fails.

DCC_POLICY Members

The DCC_Policy_nnn is a list of devices associated with a specific switch and port combination. The device is specified with a WWN string. The switch and port combination must be specified in the *switch port* format where *switch* can be specified by switch WWN, domain, or switch name. The *port* parameter can be specified by port number separated by commas, and enclosed in either brackets or parentheses: for example, (2, 4, 6). Ports enclosed in brackets include the devices currently attached to those ports.

The following examples illustrate several ways to specify the port values:

(1-6)

Selects ports 1 through 6.

(*)

Selects all ports on the switch.

[3, 9]

Selects ports 3 and 9 and all devices attached to those ports.

[1-3, 5]

Selects ports 1 through 3 and 5 and all devices attached to those ports.

[*]

Selects all ports on the switch and devices currently attached to those ports.

Examples

To remove a member that has a WWN of 12:24:45:10:0a:67:00:40 from SCC policy:

```
switch:admin> secpolicyremove "SCC_POLICY",  \
      "12:24:45:10:0a:67:00:40"
Member(s) have been removed from SCC_POLICY.
```

To remove a member with SCC policy and HIF enabled:

```
switch:admin> secpolicyremove "SCC_POLICY" "10:00:00:27:f8:d0:b3:8f"
HIF mode is enabled. About to remove SCC_POLICY member(s).
ARE YOU SURE  (yes, y, no, n): [no] y
```

See Also

secPolicyAbort, secPolicyActivate, secPolicyAdd, secPolicyCreate, secPolicyDelete, secPolicyDump, secPolicySave, secStatsShow

secPolicySave

Saves a defined security policy to persistent memory.

Synopsis

```
secpolicysave
```

Description

Use this command to save a defined security policy to persistent memory. **SecPolicySave** saves the modified SCC, DCC, and FCS policies to the Defined Security Policy Set on the local switch.

Notes

This command is always a local switch operation. A fabric-wide consistency configuration does not affect the behavior of this command.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To save a defined policy set to persistent memory:

```
switch:admin> secpolicysave
secpolicysave command was completed successfully.
```

See Also

fddCfg, secPolicyAbort, secPolicyActivate, secPolicyAdd, secPolicyCreate, secPolicyDelete, secPolicyDump, secPolicyRemove, secStatsShow

secPolicyShow

Displays an existing security policy including the FCS policy.

Synopsis

secpolicyshow ["*policy_set*",["*name*"]]

Description

Use this command to display the members of an existing policy in the Active or Defined security policy set. The command can be issued from all FCS switches.

This command displays the policy database one page at a time. Use the **secPolicyDump** command to display the policy database without page breaks.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

"*policy_type*"

Specify which policy to display, in quotation marks. Valid values are "Active", "Defined", or an asterisk (*) for both Active and Defined. This operand is optional. If not specified, all databases are displayed.

"*name*"

Specify the name of the security policy you want to view, in quotation marks. The specified policy name must be capitalized. This operand is optional. Valid values for this operand include the following:

• DCC_POLICY_*nnn*

• FCS_POLICY

• SCC_POLICY

The DCC_POLICY_*nnn* name has the common prefix DCC_POLICY_ followed by a string of user-defined characters. These characters do not have to be capitalized like regular policy names, but they are case-sensitive.

Examples

To display all security policies from active databases:

```
switch:admin> secpolicyshow "active","FCS_POLICY"
```

```
_____
              ACTIVE POLICY
FCS_POLICY

    Pos    Primary WWN                    DId swName
_____
     1    Yes    10:00:00:60:69:30:15:5c   1 primaryfcs
     2    No     10:00:00:60:69:30:1e:62   4 switch
_____
```

To display all security policies from defined databases:

```
switch:admin> secpolicyshow "defined"

_____
              DEFINED POLICY
FCS_POLICY
    Pos    Primary WWN                    DId swName
_____
     1    Yes    10:00:00:60:69:30:15:5c   1 primaryfcs
     2    No     10:00:00:60:69:30:1e:62   4 switch

_____
```

See Also

fddCfg, secPolicyActivate, secPolicyAdd, secPolicyCreate, secPolicyDelete, secPolicyDump

secStatsReset

Resets one or all security statistics to 0.

Synopsis

secstatsreset [*name*][,"*domain*[;*domain*]"]

Description

Use this command to reset one or all security statistics to 0. This command can be issued on any switch to reset the security statistics on the local switch or chassis. If an FCS policy is enabled and **secStatsReset** is issued on the primary FCS switch, this command can reset security statistics for any or all switches in the fabric.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

When invoked without operands, this command displays the security statistics on the local switch or chassis. The following operands are optional:

name

Specify the name of a security statistic you would like to reset. The specified policy name must be capitalized. If executed on the primary FCS, specify an asterisk (*) to reset all security policies. Valid values for this operand include the following:

- TELNET_POLICY

- HTTP_POLICY

- SCC_POLICY

- DCC_POLICY

- LOGIN

- INVALID_CERT

- AUTH FAIL

- TS_OUT_SYNC

- NO_FCS

- INCOMP_DB

- ILLEGAL_CMD

To access DCC policies, enter DCC_POLICY. Violations are not tracked for individual DCC policies. The statistics for all DCC_POLICY violations are grouped together.

domain(s)

Specify a list of domain IDs on which to reset the security statistics. Specify an asterisk (*) to represent all switches in the fabric or specify a list of domains, separated by semi-colons and enclosed in quotation marks. This option can only be executed when an FCS policy is enabled and when the command is issued from the primary FCS switch. When domain is specified, the name operand is required.

Examples

To reset all statistics on the local switch:

```
switch:admin> secstatsreset
About to reset all security counters.
ARE YOU SURE (yes, y, no, n):[no] y
Security statistics reset to zero.
```

To reset DCC_POLICY statistics on domains 1 and 69:

```
primaryfcs:admin> secstatsreset DCC_POLICY, "1;69"
Reset DCC_POLICY statistic.
```

See Also

secStatsShow

secStatsShow

Displays one or all security statistics.

Synopsis

       secstatsshow [*name*[,"*domain*[;*domain*]"]]

Description

Use this command to display one or all security statistics. This command can be issued on any switch to display local security statistics. If an FCS policy is enabled and **secStatsShow** is issued on the primary FCS switch, this command can retrieve and display the security statistics for any or all switches in the fabric.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

When invoked without operands, this command displays the security statistics on the local switch or chassis. The following operands are optional:

name

Specify the name of the security statistic you want to view. The specified policy name must be capitalized. If executed on the primary FCS, specify an asterisk (*) to represent all security policies in the fabric. Valid values for this operand include the following:

- TELNET_POLICY

- HTTP_POLICY

- SCC_POLICY

- DCC_POLICY

- LOGIN

- AUTH_FAIL

- TS_OUT_SYNC

- NO_FCS

- INCOMP_DB

- ILLEGAL_CMD

To access DCC policies, enter DCC_POLICY. Violations are not tracked for individual DCC policies. The statistics for all DCC_POLICY violations are grouped together.

The INVALID_CERT policy name is not supported.

domain

Specify one or more domains for which to display the security statistics. Specify an asterisk (*) in quotation marks to represent all switches in the fabric or specify a list of domains separated by semicolons. This option can only be executed when an FCS policy is enabled and the command is issued from the primary FCS switch. When *domain* is specified, the *name* operand is required.

Examples

To display the LOGIN policy statistics for the local domain.

```
switch:admin> secstatsshow LOGIN

Fabric Statistics:

Domain 1:
Name                 Value
=========================================

LOGIN                2
```

To display statistic information for TELNET_POLICY for all switches in the fabric from the primary FCS switch.

```
primaryfsc:admin> secstatsshow TELNET_POLICY,"*"

Fabric Statistics:

Domain 1:
Name             Value
=========================================

TELNET_POLICY    0

Domain 69:
Name             Value
=========================================

TELNET_POLICY    0

Domain 70:
Name             Value
=========================================

TELNET_POLICY    0
```

See Also

secStatsReset

sensorShow

Displays sensor readings.

Synopsis

```
sensorshow
```

Description

Use this command to display the current temperature, fan, and power supply status and readings from sensors located on the switch. The actual location of the sensors varies, depending on the switch type.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To view all sensor values:

```
switch:admin> sensorshow
sensor  1: (Temperature) is Ok, value is 39 C
sensor  2: (Temperature) is Absent
sensor  3: (Temperature) is Absent
sensor  4: (Temperature) is Absent
sensor  5: (Temperature) is Ok, value is 26 C
sensor  6: (Temperature) is Ok, value is 27 C
sensor  7: (Fan         ) is Ok, speed is 2537 RPM
sensor  8: (Fan         ) is Ok, speed is 2537 RPM
sensor  9: (Fan         ) is Ok, speed is 2556 RPM
sensor 10: (Power Supply ) is Ok
sensor 11: (Power Supply ) is Absent
sensor 12: (Power Supply ) is Ok
sensor 13: (Power Supply ) is Absent
```

See Also

fanShow, tempShow

serDesTuneMode

Configures and displays SerDes tuning values.

Synopsis

```
serdestunemode --set
serdestunemode --reset
serdestunemode --show
serdestunemode --autoenable
serdestunemode --autodisable
serdestunemode --autoreset
serdestunemode --autoshow
serdestunemode --help
```

Description

Use this command to configure and display SerDes tuning values on the Brocade FC8-16 blade and to control tuning optimization of backend links for all Brocade FC8-xx blades.

When used with the **--set**, **--reset** and **--show** options, this command enables or disables the SerDes tuning mode for the Brocade FC8-16 port blade and to display the configuration.

Enabling SerDes tuning mode for the Brocade FC8-16 port blade is indicated under the following conditions:

•   You have a Brocade FC8-16 blade installed in slot 2 or in slot 7 (or in both slots) in a DCX-4S chassis with a CR4S-8 core blade.

•   You notice increasing numbers of CRC errors on ports 1/11, 2/0, 2/1, 2/3, 2/4, 2/5, 2/8, 2/10, 6/58 and 7/1.

Enabling SerDes tuning mode change the SerDes values on the above-mentioned ports in slots 1, 2 and 7 along with their peer ports, provided the port blades are FC8-16s and the peer is a CR4S-8 core blade. SerDes tuning mode changes take effect immediately and are saved persistently.

When used with the **--autoenable**, **--autodisable**, **--autoreset** and **--autoshow** options, this command configures SerDes tuning optimization for backend SerDes errors. SerDes tuning optimization is indicated when you receive RASLog errors of type C2-5825 indicating a CRC error with a good EOF. Brocade highly recommends that you contact your service provider if you encounter such errors. If the error appears to be an isolated incident, you may enable auto SerDes tuning for a short period of time (24-48 hours) to see if this resolves the problem. Then disable the function to reduce the risk of resetting register values unnecessarily if single occurrence errors are encountered. If the errors persist contact your service provider.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--set

Enables SerDes tuning mode and sets new SerDes values on FC8-16 blades in slots 1, 2 and 7 and on peer ports in the CR4S-8 core blade.

--reset

Disables SerDes tuning mode and resets SerDes values to default on FC8-16 blades in slots 1, 2 and 7 and on peer ports in the CR4S-8 core blade.

--show

Indicates whether the SerDes tuning mode is enabled or disabled.

--autoenable

Enables SerDes tuning optimization on all backend ports.

--autodisable

Disables further tuning optimization but retains all current tuning values identified by the algorithm.

--autoreset

Disables further tuning optimization and resets all tuning values back to their default values. If SerDes tune mode or was set, the configuration is restored.

--autoshow

Displays whether SerDes tuning optimization is enabled or disabled.

--help

Displays the command usage.

Examples

To enable SerDes tuning mode on a DCX-4S chassis with two FC8-16 blades and to display the configuration:

```
switch:admin> serdestunemode --set
serdestunemode is turned on
New serdes values set on slot = 1
New serdes values set on slot = 2
New serdes values set on slot = 7

switch:admin> serdestunemode --show
serdestunemode is enabled
```

To disable SerDes tuning mode and reset the SerDes values to defaults and to display the configuration:

```
switch:admin> serdestunemode --reset
serdestunemode is turned off
New serdes values reset on slot = 1
New serdes values reset on slot = 2
New serdes values reset on slot = 7

switch:admin> serdestunemode --show
serdestunemode is disabled
```

To enable SerDes tuning optimization on all backend ports and to display the configuration:

```
switch:admin> serdestunemode --autoenable
Autotunemode is turned on

switch:admin> serdestunemode --show
Autotunemode is turned on
```

To disable SerDes tuning optimization on all backend ports and retain all current tuning values:

```
switch:admin> serdestunemode --autodisable
Autotunemode is turned off

switch:admin> serdestunemode --show
Autotunemode is turned off
```

To disable SerDes tuning optimization on all backend ports and reset all tuning values to their default values:

```
switch:admin> serdestunemode --autoreset
AutoTune Resetting Default Tuning On Next Poll

switch:admin> serdestunemode --show
Autotunemode is in reset state
```

See Also

None

setContext

Sets the logical switch context to a specified FID.

Synopsis

setcontext [*FID* | *switchname*]

Description

Use this command to set the logical switch context to a specified fabric ID (FID) or unique switch name. The FID uniquely defines a partition as a logical switch. Use **lscfg --show** to display currently configured partitions and their FIDs.

A logical switch context defines the boundaries within which a user can execute commands in a Virtual Fabric-aware environment. In a Virtual Fabric-aware environment, all commands are context-specific. When a user executes a switch-wide command, the command applies to the current logical switch context.

On legacy platforms, or if a logical switch context is not set explicitly, switch commands apply to the default logical switch context (FID 128). When the context is changed, switch-wide commands apply to the new logical switch context.

You must have chassis permissions to access all logical switches in the chassis and to use the **setContext** command to change the current context to any partition configured on the chassis. A user without chassis permissions can change contexts only within the list of FIDs specified in the user's access permissions. Refer to **userConfig** for more information.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

If a logical switch FID is deleted, users logged in to that switch are logged out.

Operands

This command has the following operand:

FID

Specifies the fabric ID of the logical switch instance for which the context is set.

switchname

Specifies the name of the logical switch for which the context is set.

Examples

To change the logical switch context to FID 20:

switch:admin> **setcontext 20**

To change the logical switch context to switch_20:

```
switch:admin> setcontext switch_20
```

See Also

[lsCfg](), [userConfig]()

setDbg

Sets the debug level of the specified module.

Synopsis

setdbg [*module_name*][*level*]

Description

Use this command to set the debug level of a specified module. Debug levels filter the display of debug messages to the serial console. By default, no debug messages are displayed.

High debug level values can generate a large volume of messages, degrading the system response time.

The set of supported modules and their current debug levels are displayed by the command **dbgShow**.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

module_name

Specify the name of the module for which you want to set the debug levels. Module names are case-sensitive. If this operand is omitted an error message is displayed.

level

Specify the debug level for the specified module (0 to 9). A zero (0) value (default) specifies that no messages are to display. Higher values cause more messages from that module to display. If this operand is omitted an error message is displayed.

Examples

To set the debug level for a module named NS to value 3:

```
switch:admin> setdbg NS 3
switch:admin> dbgshow NS
Module NS,      debug level = 3, verbose level = 0
```

See Also

dbgShow

setVerbose

Specifies module verbose level.

Synopsis

setverbose [*module_name*][*level*]

Description

Use this command to set the verbose level of the specified module. These levels filter the display of the debug message to the serial console. By default, no debug messages are displayed.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

module_name

Specify the name of the module for which the verbose level is to be set; module names are case-sensitive.

level

Specify the verbose level (0 to 9).

Examples

To set the verbose level of a module named NS to value 3:

```
switch:admin> setverbose NS 3
switch:admin> dbgshow NS
Module NS, debug level = 0, verbose level = 3
```

See Also

dbgShow, setDbg

sfpShow

Displays Small Form-factor Pluggable (SFP) transceiver information.

Synopsis

```
sfpshow
sfpshow [slot/]port -link [-force]
sfpshow [slot/]geport [ -f]
sfpshow [slot/] port [-tuning]
sfpshow -pid pid
sfpshow -all
sfpshow -health
sfpshow --help
```

Description

Use this command to display information about Serial Identification SFPs, also known as module definition "4" SFPs. These SFPs provide extended information that describes the SFP capabilities, interfaces, manufacturer, and other information.

Use this command without operands to display a summary of all SFPs in the switch. For each port, the summary displays the SFP type and, for serial ID SFP, the vendor name and SFP, serial number, and speed capability (in Gb/s). Refer to **switchShow** for an explanation of the two-letter codes.

Use this command with a port number to display detailed information about the serial ID SFP in the specified port. In this mode, this command displays values described in the "Gigabit Interface Converter" spec by Sun Microsystems, et al. The detailed view also displays the total number of Monitoring and Alerting Policy Suite (MAPS) state transitions for each SFP and a time stamp of the last polling time. The power-on time is displayed for 16Gb/s or 32Gb/s SFPs and QSFPs only.

Use the **-all** operand to display detailed information for all available SFPs. On switches running Fabric OS v7.0.0 or later, this view includes the power on time for the switch in years and hours.

For "smart" SFPs including mini-SFPs, this command displays additional fields, including module temperature, voltage, received optical power, transmitted optical power (long wave only), laser diode drive current, optional status/control register, alarm and warning flags, as well as high and low thresholds programmed on the SFPs.

A "Can not read Serial Data!" message indicates that an SFP ID could not be detected on that location (it could be a fixed port type, or an unsupported SFP type, or an interchassis link without a cable).

Notes

The identifier field has the value **3** for SFPs.

The **sfpShow** command does not reflect changes in the **sfpShow** output if any SFPs are replaced or removed while a port or a switch is disabled.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

The identifier field has the following values to indicate the various transceiver types:

- • 1 for GBIC

- • 2 for On-board

- • 3 for SFP

- • 6 for XFP

- • 12 for QSFP

- • 13 for QSFP+

- • 17 for QSFP28

Operands

This command has the following operands:

slot

> For bladed systems only, specifies the slot number of the port to display, followed by a slash (/)

port

> Specifies the number of the port for which to display the SFP information, relative to its slot for bladed systems. Use **switchShow** for a list of valid ports. This operand is optional; if omitted, this command displays a summary of all SFPs on the switch.

-link [-force]

> Displays the diagnostic information from cached data for a local switch port and the peer port. The **-force** option displays the real-time diagnostic information from the registers for a port.

-f

> Refreshes the SFP information. This option is valid only when **sfpShow** is issued for a specific port.

-tuning

> Reads TX Input EQ Control, RX Output Emphasis Control, and RX Amplitude Control of QSFP28.

-pid *pid*

> Specifies the diagnostics information of a remote switch port along with its peer port.

-all

> Displays detailed data for all available SFPs on the switch. This operand is not compat-ible with *slot*/*port* operands.

-health

> Displays SFP health status information from MAPS for 10, 16, and 32Gb/s SFPs and for 16Gb/s QSFPs (Quad SFPs). When any of the diagnostic SFP parameters such as current, voltage, receiver power, transmit power, and temperature crosses user-configured low and high thresholds, the SFP health state changes. Possible health states include the following:

Green

> SPF operates within MAPS thresholds.

Yellow

> At least one SFP parameter monitored by MAPS has crossed a low or high threshold.

No License

> The switch does not have a Fabric Vision license.

Unknown

> This state displays for 8, 4, and 2Gb/s SPF types not supported by this feature.

Paused

> Health monitoring is not enabled on the switch.

--help

> Displays the command usage.

Examples

To display SFP information including SFP health parameters on a Brocade DCX 8510-8:

```
switch:admin> sfpshow -health
Slot  1/Port  0: id
Slot  1/Port  1: id
Slot  1/Port  2: id
Slot  1/Port  3: id
Slot  1/Port  4: id
Slot  1/Port  5: id
Slot  1/Port  6: id
Slot  1/Port  7: id
Slot  1/Port  8: id
Slot  1/Port  9: id
Slot  1/Port 10: id
Slot  1/Port 11: id
Slot  1/Port 12: id
Slot  1/Port 13: id
Slot  1/Port 14: id
Slot  1/Port 15: id
```

```
Slot  2/Port  0: id
Slot  2/Port  1: id
Slot  2/Port  2: id
Slot  2/Port  3: id
Slot  2/Port  4: id
Slot  2/Port  5: id
Slot  2/Port  6: id
Slot  2/Port  7: id
Slot  2/Port  8: id
Slot  2/Port  9: id
Slot  2/Port 10: id
Slot  2/Port 11: id
Slot  2/Port 12: id
Slot  2/Port 13: id
Slot  2/Port 14: id
Slot  2/Port 15: id
Slot  3/Port  0: id (sw) Vendor: BROCADE \
   Serial No: HAA110491000HJ2  Speed: 4,8,16_Gbps Health: Green
Slot  3/Port  1: id (sw) Vendor: BROCADE \
   Serial No: HAA110491000HN2  Speed: 4,8,16_Gbps Health: Green
Slot  3/Port  2: id (sw) Vendor: BROCADE \
   Serial No: HAA110491000HZ2  Speed: 4,8,16_Gbps Health: Green
Slot  3/Port  3: id (sw) Vendor: BROCADE \
  Serial No: HAA110491000HS2  Speed: 4,8,16_Gbps Health: Green
Slot  3/Port  4: id (sw) Vendor: BROCADE \
  Serial No: HAA110491000HM2  Speed: 4,8,16_Gbps Health: Green
Slot  3/Port  5: id (sw) Vendor: BROCADE \
   Serial No: HAA110491000HY2  Speed: 4,8,16_Gbps Health: Green
Slot  3/Port  6: id (sw) Vendor: BROCADE \
 Serial No: HAA110491000J62  Speed: 4,8,16_Gbps Health: Green
Output truncated
```

To display detailed information about a single 16Gb/s QSFP:

```
switch:user> sfpshow 3/44
QSFP No: 11 Channel No:0
Identifier:       13    QSFP+
Connector:        12    MPO Parallel Optic
Transceiver:      0000000000000000 16_Gbps  sw Short_dist
Encoding:         5     64B66B
Baud Rate:        140   (units 100 megabaud)
Length 9u:        0     (units km)
Length 50u (OM4): 100   (units m)
Length 62.5u:     0     (units m)
Vendor Name:      BROCADE
Vendor OUI:       00:05:1e
Vendor PN:        57-1000294-01
Vendor Rev:       A
Wavelength:       850   (units nm)
Options:          00000fde
Max Case Temp:    70    (C)
Device Tech:      0x00
Serial No:        HUA1140700000A1
Date Code:        140215
```

```
DD Type:          0x8
Enh Options:      0x0
Status/Ctrl:      0x0
Alarm flags[0,1] = 0x0, 0x0
Warn Flags[0,1]  = 0x0, 0x0
Temperature:      32     Centigrade
Current:          7.502  mAmps
Voltage:          3272.6 mVolts
RX Power:         -1.8   dBm (659.9uW)
State transitions: 1
Last poll time:    02-16-2016 PST Tue 22:18:49
```

To display SFP information when a new SFP is inserted in a disabled port:

```
switch:user> sfpshow 0
Identifier: 3    SFP
Connector:  7    LC
Transceiver: 540c404000000000 2,4,8_Gbps M5,M6 sw Short_dist
Encoding:   1    8B10B
Baud Rate:  85   (units 100 megabaud)
Length 9u:  0    (units km)
Length 9u:  0    (units 100 meters)
Length 50u: 5    (units 10 meters)
Length 62.5u:2   (units 10 meters)
Length Cu:  0    (units 1 meter)
Vendor Name: BROCADE
Vendor OUI:  00:05:1e
Vendor PN:   57-1000012-01
Vendor Rev:  A
Wavelength:  850  (units nm)
Options:     003a Loss_of_Sig,Tx_Fault,Tx_Disable
BR Max:      0
BR Min:      0
Serial No:   UAF109280000J24
Date Code:   090711
DD Type:     0x68
Enh Options: 0xfa
Status/Ctrl: 0x0
Alarm flags[0,1] = 0x0, 0x0
Warn Flags[0,1]  = 0x0, 0x0
Temperature:   Not Available
Current   :    Not Available
Voltage   :    Not Available
RX Power  :    Not Available
TX Power  :    Not Available
Last poll time:   Polling has not started
```

To display detailed information about all SFPs:

```
switch:user> sfpshow -all
(output truncated)
=============
Slot  8/Port 50:
=============
```

```
=============
Slot  8/Port 51:
=============


=============
Slot  8/Port 52:
=============
QSFP No: 13 Channel No:0
Identifier: 13   QSFP+
Connector:  12   MPO Parallel Optic
Transceiver: 0000000000000000 16_Gbps  id
Encoding:   5    64B66B
Baud Rate:  140  (units 100 megabaud)
Length 9u:  0    (units km)
Length 50u: 25   (units 2 meters)
Length 62.5u:0   (units 1 meter)
Length Cu:  0    (units 1 meter)
Vendor Name: BROCADE
Vendor OUI:  00:05:1e
Vendor PN:   57-0000090-01
Vendor Rev:  A
Wavelength:  850  (units nm)
Options:     00000fde
Max Case Temp: 70 (C)
Device Tech: 0x00
Serial No:   HTA110491002833
Date Code:   101207
DD Type:     0x8
Enh Options: 0x0
Status/Ctrl: 0x0
Alarm flags[0,1] = 0x0, 0x0
Warn Flags[0,1] = 0x0, 0x0
Temperature: 38      Centigrade
Current:     6.394   mAmps
Voltage:     3266.0  mVolts
RX Power:    -0.1    dBm (977.0uW)

State transitions: 1
Last poll time: 02-03-2012 UTC Fri 07:36:05
(output truncated)
```

To display mini-SFPs on a Brocade X6-8 Director with a FC32-48 blade:

```
switch:user> setcontext 52
switch:user> sfpshow

Slot  3/Port  0: id (sw) Vendor: BROCADE          Serial No:
JAF315420000JR4  Speed: 8,16,32_Gbps
Slot  3/Port  1: id (sw) Vendor: BROCADE          Serial No:
JAF3155100011A0  Speed: 8,16,32_Gbps
Slot  3/Port  2: id (sw) Vendor: BROCADE          Serial No:
JAF316230000LC6  Speed: 8,16,32_Gbps
```

```
Slot  3/Port  3: id (sw) Vendor: BROCADE          Serial No:
JAF316230000MR5  Speed: 8,16,32_Gbps
Slot  3/Port  4: id (sw) Vendor: BROCADE          Serial No:
JAF3162300007DW  Speed: 8,16,32_Gbps
```

To display mini-SFP details on a Brocade X6-8 Director with a FC32-48 blade:

```
switch:user> sfpshow 3/0
Identifier: 3    SFP
Connector:  7    LC
Transceiver: 6804404000000000 8,16,32_Gbps M5 sw Short_dist
Encoding:   6    64B66B
Baud Rate:  280  (units 100 megabaud)
Length 9u:  0    (units km)
Length 9u:  0    (units 100 meters)
Length 50u (OM2):  3    (units 10 meters)
Length 50u (OM3):  7    (units 10 meters)
Length 62.5u:0    (units 10 meters)
Length 50u (OM4):  10   (units 10 meters)
Vendor Name: BROCADE
Vendor OUI:  00:05:1e
Vendor PN:   57-1000333-01
Vendor Rev:  A
Wavelength:  850  (units nm)
Options:     083a Loss_of_Sig,Tx_Fault,Tx_Disable
BR Max:      112
BR Min:      0
Serial No:   JAF315420000JR4
Date Code:   151015
DD Type:     0x68
Enh Options: 0xfa
Status/Ctrl: 0x0
Pwr On Time: 0.98 years (8631 hours)
E-Wrap Control: 0
O-Wrap Control: 0
Alarm flags[0,1] = 0x5, 0x8
Warn Flags[0,1] = 0x5, 0x8
Temperature: 44      Centigrade
Current:     7.822   mAmps
Voltage:     3320.9  mVolts
RX Power:    -0.9    dBm (812.9uW)
TX Power:    -2.2    dBm (598.4 uW)

State transitions: 1
Last poll time: 08-31-2017 UTC Thu 19:24:45
```

To display detailed information for GbE port on a Brocade X6-4 Director:

```
switch:admin> sfpshow 7/ge15
Identifier: 3    SFP
Connector:  7    LC
Transceiver: 6804404000000000 8,16,32_Gbps M5 sw Short_dist
Encoding:   6    64B66B
Baud Rate:  255  (units 100 megabaud)
```

```
                Length 9u:    0      (units km)
                Length 9u:    0      (units 100 meters)
                Length 50u (OM2):  3     (units 10 meters)
                Length 50u (OM3):  7     (units 10 meters)
                Length 62.5u:0     (units 10 meters)
                Length Cu:    10     (units 1 meter)
                Vendor Name: BROCADE
                Vendor OUI:   00:05:1e
                Vendor PN:    57-1000333-01
                Vendor Rev:   A
                Wavelength:   850   (units nm)
                Options:      083a Loss_of_Sig,Tx_Fault,Tx_Disable
                BR Max:       112
                BR Min:       0
                Serial No:    JAF316230000LCA
                Date Code:    160604
                DD Type:      0x68
                Enh Options: 0xfa
                Status/Ctrl: 0x0
                Alarm flags[0,1] = 0x5, 0x20
                Warn Flags[0,1] = 0x5, 0x20
                Temperature: 44       Centigrade
                Current:     7.824   mAmps
                Voltage:     3282.1  mVolts
                RX Power:    -1.2    dBm (756.1uW)
                TX Power:    -1.6    dBm (699.1 uW)

                State transitions: 1
                Last poll time: 08-31-2017 UTC Thu 19:15:28
```

To display detailed information about a QSFP:

```
switch:admin> sfpshow 8/0
QSFP No: 0 Channel No:0
Identifier:   13   QSFP+
Connector:    12   MPO Parallel Optic
Transceiver: 0000000000000004 10_Gbps id
Encoding:     5    64B66B
Baud Rate:    103  (units 100 megabaud)
Length 9u:    0      (units km)
Length 50u (OM3): 100  (units m)
Length 62.5u:0     (units m)
Vendor Name: BROCADE
Vendor OUI:   00:17:6a
Vendor PN:    57-1000042-01
Vendor Rev:   01
Wavelength:   850   (units nm)
Options:      00000fde
Max Case Temp: 70 C)
Device Tech: 0x00
Serial No:    XXXXXX16
Date Code:    100722
DD Type:      0x8
```

```
Enh Options: 0x0
Status/Ctrl: 0x0
Alarm flags[0,1] = 0x0, 0x0
Warn Flags[0,1] = 0x0, 0x0
Temperature: 36      Centigrade
Current:     6.132   mAmps
Voltage:     3285.8  mVolts
RX Power:    -0.3    dBm (926.2uW)

State transitions: 1
Last poll time: 05-29-2013 UTC Wed 11:11:47
```

To display information about a QSFP on a Brocade G620 switch:

```
switch:admin> sfpshow 60
QSFP No: 1 Channel No:0
Identifier: 17 QSFP28
Connector: 12 MPO Parallel Optic
Transceiver: 0802404000000080 32_Gbps OM3 sw Short_dist
Encoding: 5 64B66B
Baud Rate: 255 (units 100 megabaud)
Length 9u: 0 (units km)
Length 50u (OM4): 100 (units m)
Length 62.5u:0 (units m)
Vendor Name: BROCADE
Vendor OUI: 00:05:1e
Vendor PN: 57-1000331-01
Vendor Rev: A
Wavelength: 850 (units nm)
Options: 0007ffde Loss_of_Sig,Loss_of_Sig_Inverted
Max Case Temp: 0 (C)
Device Tech: 0x00
Serial No: ZTA11517000001F
Date Code: 150528
DD Type: 0xc
Enh Options: 0x0
Status/Ctrl: 0x0
Alarm flags[0,1] = 0x0, 0x0
Warn Flags[0,1] = 0x0, 0x0
Temperature: 50 Centigrade
Current: 7.494 mAmps
Voltage: 3315.4 mVolts
RX Power: -inf dBm (0.0 uW)
TX Power: -25.2 dBm (3.0 uW)

State transitions: 1
Last poll time: 11-05-2015 UTC Thu 04:36:18
```

To display the cached data for a port:

```
switch:admin> sfpshow 12/23 -link
Identifier:  3    SFP
Connector:   7    LC
Transceiver: 7004404000000000 4,8,16_Gbps M5 sw Short_dist
Encoding:    6    64B66B
```

```
Baud Rate:    140   (units 100 megabaud)
Length 9u:    0     (units km)
Length 9u:    0     (units 100 meters)
Length 50u (OM2):  3     (units 10 meters)
Length 50u (OM3):  10    (units 10 meters)
Length 62.5u:0     (units 10 meters)
Length Cu:    0     (units 1 meter)
Vendor Name: BROCADE
Vendor OUI:  00:05:1e
Vendor PN:   57-0000088-01
Vendor Rev:  A
Wavelength:  850   (units nm)
Options:     003a Loss_of_Sig,Tx_Fault,Tx_Disable
BR Max:      0
BR Min:      0
Serial No:   HAF3154000008H2
Date Code:   150929
DD Type:     0x68
Enh Options: 0xfa
Status/Ctrl: 0x0
Pwr On Time: 2.12 years (18576 hours)
E-Wrap Control: 0
O-Wrap Control: 0
Alarm flags[0,1] = 0x5, 0x0
Warn Flags[0,1] = 0x5, 0x0
Temperature: 41      Centigrade
Current:     8.158   mAmps
Voltage:     3337.1  mVolts
RX Power:    -3.4    dBm (459.6uW)
TX Power:    -2.9    dBm (514.3 uW)

State transitions: 1
Port Speed Capabilities    4Gbps 8Gbps 16Gbps    32Gbps

PEER Port Gbic Info

Vendor Name: BROCADE
Serial num:  HAA214421009W85
Vendor PN:   57-0000088-01
Vendor Rev:  A
Date Code:   141029
     Laser Type: Short Wave Laser
     SFP Type:   Optical Port Type
     Connector Type:   SFP+
Following SFP Parameters are Valid
     Temperature: 50      Centigrade [Range -128 - +128 C]
     Current:     6.954   mAmps    [Range 0 - 131 mAmps]
     Voltage:     3307.7  mVolts   [Range 0 - 3600 mVolts]
     Rx Power:    535.2   uW       [Range 0 - 6550 uW]
     Tx Power:    593.6   uW       [Range 0 - 6550 uW]
Signal Loss (Upstream) :  0 uW
Signal Loss (Downstream): -8.7    dBm (134.0 uW)
Port Speed Capabilities   2Gbps 4Gbps 8Gbps 16Gbps
```

```
                                      Alarm                       Warn
                           low          high         low          high
Temperature alerts(Centigrade): -5        85          0            75
Voltage alerts(mVolts)    : 30000     -29536       31300       -30936
Tx Bias alerts(uA)        : 1250       6000         1000         5750
Tx Power alerts(uW)       : 1260      12589         2510         7940
Rx Power alerts(uW)       : 316       12589         316          7940
Last poll time: 05-10-2018 UTC Thu 08:33:13
```

To display the information of a remote switch port:

```
switch:admin> sfpshow -pid 0x060000
SWITCH PORT SFP

Vendor Name: BROCADE
Serial num:  HAF3150800003M8
Vendor PN:   57-0000088-01
Vendor Rev:  A
Date Code:   150215
      Laser Type:       Short Wave Laser
      SFP Type:         Optical Port Type
      Connector Type:   SFP+
Following SFP Parameters are Valid
      Temperature: 43       Centigrade [Range -128 - +128 C]
      Current:     8.094    mAmps      [Range 0 - 131 mAmps]
      Voltage:     3346.9   mVolts     [Range 0 - 3600 mVolts]
      Rx Power:    429.5    uW         [Range 0 - 6550 uW]
      Tx Power:    563.3    uW         [Range 0 - 6550 uW]
Port Speed Capabilities   4Gbps 8Gbps 16Gbps 32Gbps


PEER PORT SFP

Vendor Name: BROCADE
Serial num:  HAA1130710CLVZ2
Vendor PN:   57-0000088-01
Vendor Rev:  A
Date Code:   130215
      Laser Type:       Short Wave Laser
      SFP Type:         Optical Port Type
      Connector Type:   SFP+
Following SFP Parameters are Valid
      Temperature: 56       Centigrade [Range -128 - +128 C]
      Current:     6.100    mAmps      [Range 0 - 131 mAmps]
      Voltage:     3288.0   mVolts     [Range 0 - 3600 mVolts]
      Rx Power:    520.2    uW         [Range 0 - 6550 uW]
      Tx Power:    435.3    uW         [Range 0 - 6550 uW]
Signal Loss (Upstream)  :  -13.7  dBm (43.1  uW)
Signal Loss (Downstream):  -22.4  dBm (5.8   uW)
Port Speed Capabilities  2Gbps 4Gbps 8Gbps 16Gbps
```

To display the tuning information for a specified port number:

```
switch:admin> sfpshow 5/7 -tuning
```

```
Slot 5/Port 7:
TX Input EQ Control (Ch 1: Bit 7-4, Ch 2: Bit 3-0) = 0x33
TX Input EQ Control (Ch 3: Bit 7-4, Ch 4: Bit 3-0) = 0x33
Rx Output Emphasis Control (Ch 1: Bit 7-4, Ch 2: Bit 3-0) = 0x11
Rx Output Emphasis Control (Ch 3: Bit 7-4, Ch 4: Bit 3-0) = 0x11
Rx Amplitude Control (Ch 1: Bit 7-4, Ch 2: Bit 3-0) = 0x33
Rx Amplitude Control (Ch 1: Bit 7-4, Ch 2: Bit 3-0) = 0x33
```

To display the tuning information for all the ports:

```
switch:admin> sfpshow -tuning
Slot 3/Port 0:
TX Input EQ Control (Ch 1: Bit 7-4, Ch 2: Bit 3-0) = 0x88
TX Input EQ Control (Ch 3: Bit 7-4, Ch 4: Bit 3-0) = 0x88
Rx Output Emphasis Control (Ch 1: Bit 7-4, Ch 2: Bit 3-0) = 0x33
Rx Output Emphasis Control (Ch 3: Bit 7-4, Ch 4: Bit 3-0) = 0x33
Rx Amplitude Control (Ch 1: Bit 7-4, Ch 2: Bit 3-0) = 0x11
Rx Amplitude Control (Ch 1: Bit 7-4, Ch 2: Bit 3-0) = 0x11
Slot 3/Port 1:
TX Input EQ Control (Ch 1: Bit 7-4, Ch 2: Bit 3-0) = 0x88
TX Input EQ Control (Ch 3: Bit 7-4, Ch 4: Bit 3-0) = 0x88
Rx Output Emphasis Control (Ch 1: Bit 7-4, Ch 2: Bit 3-0) = 0x33
Rx Output Emphasis Control (Ch 3: Bit 7-4, Ch 4: Bit 3-0) = 0x33
Rx Amplitude Control (Ch 1: Bit 7-4, Ch 2: Bit 3-0) = 0x11
Rx Amplitude Control (Ch 1: Bit 7-4, Ch 2: Bit 3-0) = 0x11
Slot 3/Port 2:
TX Input EQ Control (Ch 1: Bit 7-4, Ch 2: Bit 3-0) = 0x88
TX Input EQ Control (Ch 3: Bit 7-4, Ch 4: Bit 3-0) = 0x88
Rx Output Emphasis Control (Ch 1: Bit 7-4, Ch 2: Bit 3-0) = 0x33
Rx Output Emphasis Control (Ch 3: Bit 7-4, Ch 4: Bit 3-0) = 0x33
Rx Amplitude Control (Ch 1: Bit 7-4, Ch 2: Bit 3-0) = 0x11
Rx Amplitude Control (Ch 1: Bit 7-4, Ch 2: Bit 3-0) = 0x11
output truncated
```

See Also

switchShow

shellFlowControlDisable

Disables XON/XOFF flow control on the console serial port.

Synopsis

shellflowcontroldisable

Description

Use this command to disable XON/XOFF flow control on the console serial port. Flow control is disabled by default.

Because this command changes the flow control on the console serial port, it must be executed from a session that is logged in from the console serial port. This command cannot run from a Telnet session.

This setting is saved in the configuration database; therefore, it is persistent across reboots and power cycles.

Notes

On dual-CP systems, a reboot on the standby CP is required for this command to take effect. No action is required on the active CP.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To disable flow control:

```
switch:admin> shellflowcontroldisable
Disabling flowcontrol
flow control is now disabled
```

See Also

shellFlowControlEnable

shellFlowControlEnable

Enables XON/XOFF flow control on the console serial port.

Synopsis

```
shellflowcontrolenable
```

Description

Use this command to enable XON/XOFF flow control to the shell task. Flow control is disabled by default.

Because this command changes the flow control on the console serial port, it must be executed from a session that is logged in from the console serial port. This command cannot run from a Telnet session.

This setting is saved in the configuration database; therefore, it is persistent across reboots and power cycles.

Notes

On dual-CP systems, a reboot on the standby CP is required for this command to take effect. No action is required on the active CP.

If flow control is enabled and if the console output is suspended for an extended period of time, the switch might reboot. It is recommended to disable the flow control, using **shellFlowControlDisable**.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To enable flow control:

```
switch:admin> shellflowcontrolenable
Enabling flowcontrol
flow control is now enabled
```

See Also

shellFlowControlDisable

slotCfgPersistence

Sets or removes the persistent disable flag on a slot, and displays all the persistently disabled slots in the chassis.

Synopsis

```
slotcfgpersistence
slotcfgpersistence --poweroff slot
slotcfgpersistence --poweron slot
portcfgpersistence --help
```

Description

Use this command to set or remove the persistent disable flag on a slot. Execute this command without operands to display all persistently disabled slots on the chassis.

When the persistent disable flag is set on a slot, the blade present in the slot is powered off. The blade is powered on after removing persistent disable flag on the slot.

Persistently disabled slots remain disabled across power cycles, switch reboots, and switch enables. The **slotShow** command reports the persistently disabled slots with a string "Persistent".

On power up, insert blade, reboot, and HA failover, the blade will be powered off if the persistent slot power off is set on the slot. The **slotCfgPersistence** settings remain unaffected and will be applied after reboot.

Notes

After **configDownload**, the system must be rebooted for **slotCfgPersistence** settings to take effect.

You can use the **slotPowerOn** command to temporarily power on a blade that is persistently disabled. After the system is powered up or rebooted, the blade will be powered off.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

slot

Specifies the slot number of the blade.

--poweroff

Sets the persistent disable flag on the specified slot.

--poweron

Removes the persistent disable flag on the specified slot.

--help

Displays command usage.

Examples

To set the persistent disable flag on a slot:

```
switch:admin> slotcfgpersistence --poweroff 8
```

To display the persistent disabled slots on a chassis:

```
switch:admin> slotcfgpersistence
slot 8 is Persistent disable
```

To remove the persistent disable flag on a slot:

```
switch:admin> slotcfgpersistence --poweron 8
```

See Also

slotPowerOff, slotPowerOn, slotShow

slotPowerOff

Removes power from a slot.

Synopsis

```
slotpoweroff slot [-force]
slotpoweroff --help
```

Description

Use this command to turn off the power to a blade unit. The slot must have a valid blade unit present and the blade unit must be of a type that can be powered off.

This command is supported on 8Gb/s-capable, 16Gb/s-capable, and 32Gb/s-capable core blades also. There is no frame loss when there are no ICLs connected.

This command, when executed on a core blade, displays a warning message and prompts for confirmation as powering off the last core blade will disable the chassis.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operand:

slot **[-force]**

> Specify the slot number of the blade to be powered down. This operand is required.
>
> On core blades, the command prompts for confirmation unless you use the **-force** option.

--help

> Displays command usage.

Examples

To power off blade unit 3:

```
switch:admin> slotpoweroff 3
Slot 3 is being powered off
```

See Also

powerOffListSet, powerOffListShow, slotPowerOn, slotShow

slotPowerOn

Restores power to a slot.

Synopsis

slotpoweron *slot*
slotpoweron --help

Description

Use this command to turn on the power to a blade unit. The slot must have a valid blade unit present and the blade unit must be currently powered off. The **slotShow** command reports such slots as being in the state of INSERTED, NOT POWERED ON.

This command is supported on 8Gb/s-capable, 16Gb/s-capable, and 32Gb/s-capable core blades also. There is no frame loss when there are no ICLs connected.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operand:

slot

Specify the slot number of the blade to be powered on. This operand is required.

--help

Displays command usage.

Examples

To power on blade unit 3:

```
switch:admin> slotpoweron 3
Powering on slot 3.
```

See Also

slotPowerOff, slotShow

slotShow

Displays the status of all slots in the system.

Synopsis

```
slotshow [-m] [-p]
```

Description

Use this command to display the current status of each slot in the system. Depending on the option used, the command retrieves information on blade type, blade ID, status, Brocade model name, and power usage for each slot in the switch or chassis.

This command does not display the model names for unsupported blades. If a blade is not supported, only the Blade ID is displayed, and the Status field registers as FAULTY(9). Use the list below to identify the model name associated with an unsupported blade.

When no operand is specified, **slotShow** displays the blade type, blade ID, and status for each slot. In this view, the fields and their possible values are as follows:

Slot

Displays the physical slot number.

Blade Type

Displays the blade type as one of the following:

SW BLADE

The blade is a switch.

CP BLADE

The blade is a control processor.

CORE BLADE

The blade is a core switch blade.

AP BLADE

The blade is an application processor.

UNKNOWN

The blade not present or its type is not recognized.

ID

Displays the blade type ID as one of the following:

50

CP8 control processor blade

51

FC8-48 switch blade

52

Core8 core blade

55

FC8-32 switch blade

75

FX8-24 application processor blade

96

FC16-48 switch blade

97

FC16-32 switch blade

98

CR16-8 core blade

99

CR16-4 core blade

153

FC16-64 switch blade

175

CPX6 control processor blade

176

CR32-4 core blade

177

CR32-8 core blade

178

> FC32-48 switch blade

186

> SX6 application processor blade

204

> FC32-64 switch blade

Status

> Displays the status of the blade as one of the following:

VACANT

> The slot is empty.

INSERTED, NOT POWERED ON

> The blade is present in the slot but is turned off.

POWERING UP

> The blade is present and powering on.

LOADING

> The blade is present, powered on, and loading the initial configuration.

DIAG RUNNING POST1

> The blade is present, powered on, and running the POST (power-on self-test).

DIAG RUNNING POST2

> The blade is present, powered on, and running the reboot power on self tests.

INITIALIZING

> The blade is present, powered on, and initializing hardware components.

ENABLED

> The blade is on and fully enabled.

DISABLED

> The blade is powered on but disabled.

FAULTY

The blade is faulty because an error was detected. A fault code of 53 may also indicate the possibility of a rolling reboot detection (RRD) on the specified blade. In the case of an RRD, investigate and correct the cause, then reboot the control processor (CP) to recover the blade.

UNKNOWN

The blade is inserted but its state cannot be determined.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

In a X6-4 chassis, slot 1 and 2 (Blade ID 175) are occupied by control processor blades and slot 5 and 6 (Blade ID 176) are occupied by core blades. In a X6-8 chassis, slot 1 and 2 (Blade ID 175) are occupied by the control processor blades and slot 7 and 8 (Blade ID 177) are occupied by core blades..

Operands

This command supports the following operands:

-p

In addition to the basic slot status view, displays the following information about power consumption:

  •   Total direct current (DC) power consumption for the chassis and individual values for each blade (in Watts). Usage for other components such the WWN card or fans is included in the calculation but not listed per component. Note that the data displayed in the "DC Power Consumption" column and in the summary field "Total DC Power consumption" indicate the maximum allowed power consumption, not a real-time value. Real-time power consumption data is displayed for 16G platforms only with the **chassisShow** command.

  •   Total alternating current (AC) power consumption in Watts. This value indicates the maximum allowed AC power consumption; it is not a real-time value.

  •   AC efficiency, as a percentage of total and BTU.

  •   Power efficiency in Watts/port and Watts/Gb.

-m

In addition to the basic slot status view, displays the Brocade model name for each blade.

Examples

To display the status of all slots on a Brocade X6-8:

```
switch:user> slotshow
```

```
Slot    Blade Type   ID    Status
--------------------------------
 1      CP BLADE     175   ENABLED
 2      CP BLADE     175   ENABLED
 3      AP BLADE     186   ENABLED
 4      AP BLADE     186   ENABLED
 5      SW BLADE     178   ENABLED
 6      SW BLADE     178   ENABLED
 7      CORE BLADE   177   ENABLED
 8      CORE BLADE   177   ENABLED
 9      AP BLADE     186   ENABLED
10      SW BLADE     178   ENABLED
11      SW BLADE     178   ENABLED
12      AP BLADE     186   ENABLED
```

To display the Brocade model name for each blade on a Brocade X6-8:

```
switch:user> slotshow -m

Slot    Blade Type    ID    Model Name    Status
--------------------------------------------------
 1      CP BLADE      175   CPX6          ENABLED
 2      CP BLADE      175   CPX6          ENABLED
 3      SW BLADE      204   FC32-64       ENABLED
 4      SW BLADE      178   FC32-48       ENABLED
 5      SW BLADE      178   FC32-48       ENABLED
 6      SW BLADE      178   FC32-48       ENABLED
 7      CORE BLADE    177   CR32-8        ENABLED
 8      CORE BLADE    177   CR32-8        ENABLED
 9      SW BLADE      204   FC32-64       ENABLED
10      AP BLADE      186   SX6           ENABLED
11      SW BLADE      178   FC32-48       ENABLED
12      SW BLADE      178   FC32-48       ENABLED
```

To display power consumption information on a Brocade X6-8:

```
switch:user> slotshow -p

Slot    Blade Type    ID    DC Power       Status
                            Consumption
--------------------------------------------------
 1      CP BLADE      175      50W         ENABLED
 2      CP BLADE      175      50W         ENABLED
 3      SW BLADE      204     387W         ENABLED
 4      SW BLADE      178     245W         ENABLED
 5      SW BLADE      178     245W         ENABLED
 6      SW BLADE      178     245W         ENABLED
 7      CORE BLADE    177     450W         ENABLED
 8      CORE BLADE    177     450W         ENABLED
 9      SW BLADE      204     387W         ENABLED
10      AP BLADE      186     420W         ENABLED
11      SW BLADE      178     245W         ENABLED
```

```
 12      SW BLADE    178       245W         ENABLED
Total DC Power Consumption:
4321 watts
Total AC Power Consumption:
4801 watts AC @ 90% efficiency (16386 BTU)
Power Efficiency:
1.0watts per port, 0.05 watts per Gb

  INSERTED, NOT POWERED ON blades are not included in Total Power
Consumption.
```

To display the Brocade model name for each blade on a Brocade X6-4:

```
switch:user> slotshow -m

Slot    Blade Type    ID     Model Name    Status
--------------------------------------------------
  1     CP BLADE     175     CPX6          ENABLED
  2     CP BLADE     175     CPX6          ENABLED
  3     SW BLADE     178     FC32-48       ENABLED
  4     SW BLADE     178     FC32-48       ENABLED
  5     CORE BLADE   176     CR32-4        ENABLED
  6     CORE BLADE   176     CR32-4        ENABLED
  7     SW BLADE     178     FC32-48       ENABLED
  8     AP BLADE     186     SX6           ENABLED
```

To display power consumption information on a Brocade X6-4:

```
switch:user> slotshow -p
Slot    Blade Type     ID    DC Power      Status
                             Consumption
--------------------------------------------------
  1     CP BLADE      175      50W         ENABLED
  2     CP BLADE      175      50W         ENABLED
  3     AP BLADE      186      420W        ENABLED
  4     SW BLADE      204      387W        ENABLED
  5     CORE BLADE    176      244W        ENABLED
  6     CORE BLADE    176      244W        ENABLED
  7     AP BLADE      186      420W        ENABLED
  8     SW BLADE      204      387W        ENABLED
Total DC Power Consumption:
2804 watts
Total AC Power Consumption:
3116 watts AC @ 90% efficiency (10633 BTU)
Power Efficiency:
1.99 watts per port, 0.12 watts per Gb
```

See Also

bladeDisable, bladeEnable, chassisShow, slotPowerOff, slotPowerOn

slotStatsClear

Clears hardware statistics for all the ports or the ports in specified slot or chip.

Synopsis

slotstatsclear [**-s** *slot1*[*-slot2*]]
slotstatsclear [**-c** *chip1*[*-chip2*]]
slotstatsclear -h

Description

Use this command to clear all the port hardware statistics such as ALPA-based CRC monitor, End-to-End monitor, and Filter-based performance monitor statistics for one or more ports in the switch. Execute this command without operands to clear all the port hardware statistics in the switch.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

-s *slot1*[*-slot2*]

Clears all ports on a slot or on a range of slots. Specify a range (1-3), or a list of slots separated by a comma (1,5,7), or a combination of both (1-3,5,7-9).

-c *chip1*[*-chip2*]

Clears all ports on a chip or on a range of chips. Specify a range (1-3), or a list of chips separated by a comma (1,5,7), or a combination of both (1-3,5,7-9). On chassis-based systems, this operand must be specified along with **-s** operand.

-h

Displays the command usage.

Examples

To clear hardware statistics for all the slots:

switch:admin> **slotstatsclear**

To clear hardware statistics for specific slot:

switch:admin> **slotstatsclear -s 3**

To clear hardware statistics for slot range:

```
switch:admin> slotstatsclear -s 3-4
```

To clear hardware statistics for specific chip:

```
switch:admin> slotstatsclear -c 1
```

To clear hardware statistics for chip range:

```
switch:admin> slotstatsclear -c 1-2
```

See Also

portStatsClear

snmpConfig

Manages the SNMP agent configuration.

Synopsis

```
snmpconfig --set snmpv1 [-index index] [-community community_name]
     [-host [ipv4 | ipv6 | dns]] [-port udp_port]
     [-severity severity_level] [-groupname ro | default]
snmpconfig --set snmpv1 [-index index] [-default]
snmpconfig --set snmpv3 [-index index] [-default]
snmpconfig --set snmpv3 [-enable | -disable [informs | passwd_encryption]]
snmpconfig --set snmpv3 [-index index] [-user user_name]
     [-host [ipv4 | ipv6 | dns]] [-port udp_port]
     [-severity severity_level] [-auth_proto auth_protocol]
     [-auth_passwd auth_password] [-priv_proto priv_protocol]
     [-priv_passwd priv_password] [-engine_id engine_id]
     [-notify_type trap | informs] [-groupname ro | default]
snmpconfig --set mibcapability [-mib_name mib_name [-bitmask bit_mask]]
snmpconfig --set accesscontrol [-index index] [-host ip_address]
     [-access [ro | rw]]
snmpconfig --set systemgroup [-sysdescr sysdescr] [-syslocation
syslocation]
     [-syscontact syscontact] [-authtrapenabled [ON | OFF]]
snmpconfig --set seclevel [-snmpget security_level] [-snmpset
security_level]
snmpconfig --set auditinterval [-interval minute]
snmpconfig --enable | --disable mibcapability
     -mib_name mib_name [-trap_name trap_name]
snmpconfig --enable | --disable snmpv1
snmpconfig --show [snmpv1 | snmpv3 | accesscontrol | mibcapability |
     systemgroup | seclevel | auditinterval]
snmpconfig --default [snmpv1 |snmpv3 | accesscontrol | mibcapability |
     systemgroup | seclevel | auditinterval]
snmpconfig --help
```

Description

Use this command to manage the configuration of the SNMP agent in the switch. The configuration includes SNMPv1 and SNMPv3 configuration, access control list (ACL), MIB capability, system group, and security level settings. The command supports set, reset to default, and display operations. This command supports enabling or disabling a single MIB or all MIBs, configuring a single trap only, and managing traps in excess of 32.

The SNMP Agent configuration interface allows both interactive and command line options (non-interactive) for all parameters.

The SNMPv3 configuration supports sending inform requests as an alternative to trap requests. Traps are unreliable because the receiver does not send any acknowledgment when it receives a trap. The sender cannot determine if the trap was received. However, an SNMP manager that receives an inform request acknowledges the message with an SNMP response protocol data unit (PDU). If the manager does not receive an inform request, it does not send a response. If

the sender never receives a response, the inform request can be sent again. For this reason, informs are more likely to reach their intended destination.

All values successfully changed by this command take effect immediately and are persistent across power cycles and reboots.

SNMPv1 Configuration Parameters

The agent supports six communities and their associated trap recipients and trap recipient severity levels. The first three communities are for read-write (rw) access and the last three are for read-only (ro) access. The default value for the trap recipient of each community is 0.0.0.0. The length of the community string should be in the range of 2 to 16 characters. The default values for the community strings include the following:

- Community 1: Secret Code

- Community 2: OrigEquipMfr

- Community 3: private

- Community 4: public

- Community 5: common

- Community 6: FibreChannel

For an SNMP management station to receive a trap generated by the agent, the administrator must configure a trap recipient to correspond to the IP address of the management station. In addition, the trap recipient must be able to pass the access control list (ACL) check as described in the Access Control category.

SNMPv3 Configuration Parameters

Two user roles, **snmpadmin** and **snmpuser** are supported. The **snmpadmin** role provides read-write access and the **snmpuser** role provides read-only access. Entries are added to the USM table corresponding to each role. A total of three entries for **snmpadmin** and **snmpuser** respectively are supported. Separate default passwords are provided for creation of **authKey** and **privKey** for each entry. The default set of passwords is published and the algorithm (MD5/SHA) is used to create the set of authentication keys. You can change these passwords using this option. You can select the authentication protocol MD5/SHA or no authentication for each entry.

When new passwords are entered for any user entry, a new **authKey** and **privKey** are generated. The new passwords must be updated on the client (e.g., MIB browser) as well. **AuthKey** and **privKey** can also be updated with the delta key mechanism provided by the SNMPv3 protocol.

The system prompts for password confirmation if a protocol other than **NoAuth/NoPriv** is selected. Protocol passwords must be between 1 and 32 characters.

In order for an SNMP management station to receive SNMPv3 traps generated by the agent, the administrator must configure a trap recipient value to correspond to the IP address of the management station. In addition, the trap recipient must pass the ACL check as described in the Access Control section. The trap recipient must be associated with one of the six users of SNMPv3 and trap severity level. The factory default value for the SNMPv3 trap recipient of each user is 0.0.0.0.

Access Control Configuration Parameters

The ACL check is as follows: there are six ACLs to restrict SNMP get, set, and trap operations to hosts under an host-subnet-area. The host-subnet-area is defined by comparing nonzero IP octets. For example, an ACL of 192.168.64.0 enables access by any hosts that start with the specified octets. The connecting host is enabled to set each host-subnet-area to be read-write or read-only. The closest match out of six entries is given access. The ACL check is turned off when all six entries contain 0.0.0.0. The default values of all six entries are 0.0.0.0. For IPv6 subnets, the format is specified by an IPv6 address followed by the number of fixed bits in the address.

MIB Capability Configuration Parameters

The **mibCapability** option turns certain MIBS and associated SNMP traps on or off. If a specific MIB is disabled, the corresponding traps also are disabled. If any trap group is disabled, the corresponding individual traps are also disabled.

SNMP Traps are identified by their bit mask and can be read directly from the switch configuration. The MIB and trap status (enabled or disabled) status is recorded in a 64- bit counter. The last bit (bit 0) is reserved for the MIB and the remaining bits are reserved for the traps of that MIB. The trap's position is allocated based on the last ID of the trap OID. For example, the last ID of the swEventTrap is 5 so its position will be 5th from the right. The following is a listing of valid SNMP traps and their bit masks:

```
MIB     Trap Name and position          Bit mask Default
_____
FE-MIB                                  0x1    Enabled

_____
SW-MIB                                  0x1    Enabled
     swFCPortScn (3)                    0x8    Enabled
     swEventTrap (4)                    0x10   Enabled
     swIPv6ChangeTrap (7)               0x80   Enabled
     swPmgrEventTrap (8)                0x100  Enabled
     swFabricReconfigTrap (10)          0x200 Disabled
     swFabricSegmentTrap (9)            0x400 Disabled
     swExtTrap (11)                     0x800 Disabled
     swStateChange (12)                        Disabled
     swMovePort (13)                           Disabled
     swBrcdGenericTrap (15)                    Disabled
     swDeviceStatusTrap (16)                   Disabled
     swZoneConfigChangeTrap (17)               Disabled

_____
FA-MIB                                  0x1    Enabled
     connUnitStatusChange(1)            0x2    Enabled
     connUnitEventTrap (4)              0x10   Enabled
     connUnitPortStatusChange (6)       0x40   Enabled

_____
FICON-MIB                               0x1    Enabled
     linkRNIDDeviceRegistration (1)     0x2    Enabled
     linkRNIDDevicedeRegistration(2)    0x4    Enabled
     linkLIRRListenerAdded (3)          0x8    Enabled
     linkLIRRListenerRemoved (4)        0x10   Enabled
     linkRLIRFailureIncident (5)        0x20   Enabled

_____
HA-MIB                                  0x1    Enabled
     fruStatusChanged (1)               0x2    Enabled
     cpStatusChanged (2)                0x4    Enabled
```

```
          fruHistoryTrap (3)                       0x8     Enabled
     _____
     FCIP-MIB                                      0x1     Enabled
     _____
     IF-MIB                                        0x1     Enabled
          linkUpTrap (3)                           0x8     Enabled
          linkdownTrap (4)                         0x10    Enabled
     _____
     MAPS-MIB                                      0x1     Enabled
          mapsTrapAM (1)                           0x2     Enabled
          mapsQuietTimeExpirationTrap (2)0x4               Enabled
     _____
     T11-FC-ZONE-SERVER-MIB                        0x1     Disabled
          t11ZsRequestRejectNotify (1)   0x2       Disabled
          t11ZsMergeFailureNotify (2)    0x4       Disabled
          t11ZsMergeSuccessNotify (3)    0x8       Disabled
          t11ZsDefZoneChangeNotify (4)   0x10      Disabled
          t11ZsActivateNotify (5)        0x20      Disabled
```

Note: The Zone Mib parameters are for restricted usage only.

Use the **--show mibcapability** option to display the traps configurable under each MIB.

Notes

The execution of this command is subject to Virtual Fabric restriction that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Informs are not supported for IPv6 addresses.

Operands

This command has the following operands:

--help

Displays the command usage.

--enable

Enables the SNMP agent configuration for the specified category. This operand is valid only with **mibcapability** and **snmpv1**. When used with the **snmpv1** operand, this command restores access to SNMPv1/v2c.

--disable

Disables the SNMP agent configuration for the specified category. This operand is valid only with **mibcapability** and **snmpv1**. When used with the **snmpv1** operand, this command blocks access to SNMPv1/v2c. All requests for v1/v2c version will be dropped by the switch, and SNMPv1 traps will be blocked from being sent, even if trap destinations are present.

--show

Displays the SNMP agent configuration data of the specified category. When used with the **snmpv1** operand, this command displays whether access to SNMPv1/v2c is enabled or disabled.

--set

Sets the SNMP agent configuration data of the specified category.

snmpv1

Selects SNMPv1-related configuration parameters. These parameters include the community string, trap recipient IP address, and trap severity level associated with each trap recipient IP address. When "0" is configured as a trap port, traps can be received at the default port 162.

snmpv3

Selects SNMPv3-related configuration parameters. These parameters include the user name, authentication protocol and password, the privacy protocol and password, the SNMPv3 trap recipient's IP address, its associated user index, and trap severity level. When "0" is configured as a trap port, traps can be received at the default port 162.

-index *index*

Specifies the index for which the user details are configured. Vaild values are from 1 through 6.

-community *community_name*

Specifies the community string. If special characters are used in the *community_name*, the *community_name* must be enclosed in single quotes. The default values for the community strings include the following:

- Community 1: Secret Code

- Community 2: OrigEquipMfr

- Community 3: private

- Community 4: public

- Community 5: common

- Community 6: FibreChannel

-host [ipv4 | ipv6 | dns]

Specifies the IP address of the host. IPv4, IPv6, and DNS hosts are supported.

-port *udp_port*

Specifies the UDP port where SNMP traps will be received. Valid port IDs range from 0 through 65535. The default port is 162. This command prompts for confirmation only when you specify the port number within the range of 0 through 49151.

-severity *severity_level*

Specifies the trap recipient severity level. When an event occurs and its severity level is at or below the set value, the Event Trap traps (swEventTrap and connUnitEventTrap), are sent to configured trap recipients. By default, this value is set at 0, implying that no Event Trap is sent. Possible values are:

- **0**: None

- **1**: Critical

- **2**: Error

- **3**: Warning

- **4**: Informational

- **5**: Debug

--default

Sets the SNMP agent configuration data for a specified item to the default values. Generally, these default values may be available in the configuration database. The command sets to factory defaults if the SNMP agent configuration parameters are not available in the configuration database. This operand is valid with **snmpv1**, **snmpv3**, **accesscontrol**, **mibcapability**, **systemgroup**, **seclevel**, and **auditinterval**.

-enable | -disable [informs]

Enables or disables informs. If informs are enabled, all trap destinations receive inform requests. If informs are disabled, all trap destinations receive trap requests. When informs are enabled, the engine ID must be set to correspond to the management engine IP address. Informs are by default disabled. IPv6 Informs are currently not supported.

-enable | -disable [passwd_encryption]

Enables or disables password encryption. If password encryption is enabled, both authentication and privacy passwords are encrypted. If the password encryption is disabled, the authentication and privacy passwords are reset to default. Password encryption is disabled by default.

When password encryption is enabled, the configuration key attribute values for the SNMPv3 users must not be modified in the uploaded configuration file. If the configuration file is modified and downloaded to the switch, the **configDownload** may fail for the filter SNMP. Even if the SNMP configurations are downloaded successfully, the calculated digest value may be incorrect and the SNMPv3 query as well as the trap may fail for that user.

-user *user_name*

Specifies the name of the user that connects to the agent. The user name must be between 2 and 32 characters long. The default user names are defined with the **noAuth** and **noPriv** protocol. The factory default SNMPv3 user names include the following:

- User 1: snmpadmin1

- User 2: snmpadmin2

- User 3: snmpadmin3

- User 4: snmpuser1

- User 5: snmpuser2

- User 6: snmpuser3

-auth_proto *auth_protocol*

Specifies the authentication protocol as MD5, SHA, or no authentication for each entry. If FIPS mode is enabled, MD5 protocol configuration is not supported for the snmpv3 users. The following combinations of protocols are supported:

- NoAuth/NoPriv

- Auth/NoPriv

- Auth/Priv

-auth_passwd *auth_password*

Specifies the authentication password that enables the agent to receive packets from the host. Passwords are plain text and must be added each time for each configuration replay. The password must be between 8 and 32 characters long.

-priv_proto *priv_protocol*

Specifies privacy authentication level setting. The vald values are **DES** and **AES128**.

-priv_passwd *priv_password*

Specifies the privacy password that enables the host to encrypt the contents of the message that it sends to the agent. Passwords are plain text and must be added each time for each configuration replay. The password must be between 8 and 32 characters long. The privacy password alone cannot be configured. You configure the privacy password with the authentication password.

-engine_id *engine_id*

Configures a user-defined engine ID for the SNMP agent.

-notify_type trap | informs

Specifies the type of notification traps that are sent for the host. Traps and informs are supported. The default notify type is traps.

-groupname ro | default

Modifies the access given to the communities or to the users. The **-groupname ro** makes all the entries to read-only permission; whereas the **-groupname default** option restores the default configuration that is the first three entries as read-write and the last three entries as read-only. The changes will not affect the other v1/v3 configurations when executed with **snmpconfig --set snmpv1|snmpv3 -groupname default** command.

--set mibcapability

Configures MIBs.

-mib_name *mib_name*

Specifies the name of the MIB to be configured. This operand is required if you want to configure MIB traps noninteractively. Valid MIB names include the following.

- FE-MIB

- SW-MIB

- FA-MIB

- FICON-MIB

- HA-MIB

- FCIP-MIB

- ISCSI-MIB

- IF-MIB

- MAPS-MIB

- T11-FC-ZONE-SERVER-MIB

-bitmask *bit_mask*

Specifies the bit mask for the MIB. Refer to the table above for valid values.

-trap_name *trap_name*

Specifies the name of the trap to be enabled or disable. This operand is optional. Use **snmpconfig --show mibcapability** for a listing of valid traps.

accessControl

Selects access-control-related parameters. These parameters include the access host subnet area and access permission (read-write).

-host *ip_address*

Specifies the host IP address with or without a subnet mask.

-access [ro | rw

Specifies the read-write (rw) or read-only (ro) access to the host.

systemGroup

Selects configuration parameters related to the system group.

-sysdescr *sysdescr*

Specifies the system description. The default value is "Fibre Channel Switch".

-syslocation *syslocation*

Specifies the location of the system (switch). The default value is "End User Premise". The string must be at least 4 characters in length; the maximum length is 255 characters. If special characters are used in the *syslocation*, the *syslocation* must be enclosed in single quotes.

-syscontact *syscontact*

Specifies the contact information for this system (switch). The default value is "Field Support". Refer to the definition of sysDescr, sysLocation and sysContact in the system group of MIB-II. The string must be at least 4 characters in length; the maximum length is 255 characters. If special characters are used in the *syscontact*, the *syscontact* must be enclosed in single quotes.

-authtrapenabled [ON | OFF]

Enables or disables the authentication traps. When enabled, the authentication trap (authenticationFailure) is transmitted to a configured trap recipient in the event that the agent receives a protocol message that is not properly authenticated. In the context of SNMPv1 and SNMPv2c, this means that a request contains a community string that is not known to the agent.The default value for this parameter is OFF (disabled).

secLevel

Sets the SNMP security level.

-snmpget *security_level*

Specifies security level for all SNMP GET requests.

-snmpset *security_level*

Specifies security level for SNMP SET requests only. Values include the following:

- **0** - No security.

- **1** - Authentication only.

- **2** - Authentication and Privacy.

- **3** - OFF

auditinterval

Sets the SNMP audit interval.

-interval *minute*

Specifies the the SNMP audit interval in minutes. Valid value range is from 1 through 1440. Default value is 60.

Examples

To display the SNMPv1 configuration :

```
switch:admin> snmpconfig --show snmpv1
SNMPv1 community and trap recipient configuration:
  Community 1: Secret C0de (rw)
    Trap recipient: 10.32.147.113
    Trap recipient Severity Level: 0
  Community 2: OrigEquipMfr (rw)
    Trap recipient: 1080::8:800:200C:1234
    Trap recipient Severity Level: 0
  Community 3: private (rw)
    No trap recipient configured yet
  Community 4: public (ro)
    No trap recipient configured yet
  Community 5: common (ro)
    No trap recipient configured yet
  Community 6: FibreChannel (ro)
    No trap recipient configured yet
```

To set the SNMPv1 configuration of a switch noninteractively:

```
switch:admin> snmpconfig --set snmpv1 -index 2 -community community2 \
    -port 4000 -severity 3
Committing configuration.....done
```

To set the SNMPv3 configuration of a switch noninteractively:

```
switch:admin> snmpconfig --set snmpv3 -index 2 -user user1 \
    -host 1.3.4.5 -port 178 -severity 5 -auth_proto 2 \
    -auth_passwd "password1" -priv_proto 3 -priv_passwd "password2" \
    -engine_id "80:00:08:08:08:98:AB:5C:01" -notify_type informs \
Committing configuration.....done
```

To set the severity level for switch events and MAPS alerts interactively:

```
switch:admin> snmpconfig --set mibcapability
[...]
SW-TRAP (yes, y, no, n): [yes]
  swFCPortScn (yes, y, no, n): [yes]
  swEventTrap (yes, y, no, n): [yes]

    DesiredSeverity: (0..4) [0] 4
  swIPv6ChangeTrap (yes, y, no, n): [yes]
    DesiredSeverity: (0..4) [0] 4
  swPmgrEventTrap (yes, y, no, n): [yes]
```

```
[...]
```

To enable the **mapsTrapAM** noninteractively:

```
switch:admin> snmpconfig  --enable mibcapability \
     -mib_name SW-MIB -trap_name mapsTrapAM
Operation succeeded
```

To enable the **swEventTrap** of the SW-MIB category only (this operation disables all other SNMP traps in this MIB category):

```
switch:admin> snmpconfig  --set mibcapability \
     -mib_name SW-MIB -bitmask 0x10
Operation succeeded

switch:admin> snmpconfig  --show mibcapability
[...]
SW-TRAP: NO
        swFCPortScn: YES
        swEventTrap: YES
                DesiredSeverity:4
        swIPv6ChangeTrap: YES
                DesiredSeverity:None
        swPmgrEventTrap: YES
        swFabricReconfigTrap: YES
        swFabricSegmentTrap: YES
        swExtTrap: NO
        swStateChangeTrap: NO
        swPortMoveTrap: NO
        swBrcdGenericTrap: YES
        swDeviceStatusTrap: YES
        swZoneConfigChangeTrap: NO
[...]
```

To enable the SW-MIB MIB only without changing the current trap configuration:

```
switch:admin> snmpconfig --enable mibcapability  \
     -mib_name SW-MIB
Operation succeeded

switch:admin> snmpconfig --show mibcapability
[...]
SW-TRAP: YES
        swFCPortScn: YES
        swEventTrap: YES
                DesiredSeverity:4
        swIPv6ChangeTrap: YES
                DesiredSeverity:4
        swPmgrEventTrap: YES
        swFabricReconfigTrap: YES
        swFabricSegmentTrap: YES
        swExtTrap: NO
        swStateChangeTrap: NO
        swPortMoveTrap: NO
        swBrcdGenericTrap: YES
        swDeviceStatusTrap: YES
```

```
                    swZoneConfigChangeTrap: NO
[...]
```

To re-enable all traps under the SW-MIB category:

```
switch:admin> snmpconfig --set mibcapability \
     -mib_name SW-MIB -bitmask 0xFFF
Operation succeeded

switch:admin> snmpconfig  --show mibcapability
[...]
SW-TRAP: YES
        swFault: YES
        swSensorScn: YES
        swFCPortScn: YES
        swEventTrap: YES
                DesiredSeverity:None
        swIPv6ChangeTrap: YES
        swPmgrEventTrap: YES
        swFabricReconfigTrap: Yes
        swFabricSegmentTrap: Yes
        swExtTrap: Yes
        swStateChangeTrap: NO
        swPortMoveTrap: NO
        swBrcdGenericTrap: NO
[...]
```

To display the configuration for all MIBs and associated traps:

```
switch:admin> snmpconfig --show mibcapability
FE-MIB: YES
SW-MIB: YES
FA-MIB: YES
FICON-MIB: YES
HA-MIB: YES
FCIP-MIB: YES
IF-MIB: YES
BROCADE-MAPS-MIB: YES
T11-FC-ZONE-SERVER-MIB: NO
SW-TRAP: YES
          swFCPortScn: YES
          swEventTrap: YES
                    DesiredSeverity:None
          swIPv6ChangeTrap: YES
          swPmgrEventTrap: YES
          swFabricReconfigTrap: YES
          swFabricSegmentTrap: YES
          swExtTrap: NO
          swStateChangeTrap: NO
          swPortMoveTrap: NO
          swBrcdGenericTrap: YES
          swDeviceStatusTrap: YES
          swZoneConfigChangeTrap: NO
FA-TRAP: YES
          connUnitStatusChange: YES
```

```
                        connUnitEventTrap: YES
                        connUnitPortStatusChange: YES
        FICON-TRAP: YES
                        linkRNIDDeviceRegistration: YES
                        linkRNIDDeviceDeRegistration: YES
                        linkLIRRListenerAdded: YES
                        linkLIRRListenerRemoved: YES
                        linkRLIRFailureIncident: YES
        HA-TRAP: YES
                        fruStatusChanged: YES
                        cpStatusChanged: YES
                        fruHistoryTrap: YES
        IF-TRAP: YES
                        linkDown: YES
                        linkUp: YES
        MAPS-TRAP: YES
                        mapsTrapAM: YES
                        mapsQuietTimeExpirationTrap: YES
        T11-FC-ZONE-SERVER-TRAP: NO
                        t11ZsRequestRejectNotify: NO
                        t11ZsMergeFailureNotify: NO
                        t11ZsMergeSuccessNotify: NO
                        t11ZsDefZoneChangeNotify: NO
                        t11ZsActivateNotify: NO
```

Note: The Zone Mib parameters are for restricted usage only.

To set the access control configuration noninteractively:

```
switch:admin> snmpconfig --set accesscontrol -index 1 -host 2.3.4.5 -access
ro
Committing configuration...done.
```

To display the access control configuration:

```
switch:admin> snmpconfig --show accesscontrol
SNMP access list configuration:
Entry 0:  Access host subnet area 2.3.4.5 (ro)
Entry 1:  No access host configured yet
Entry 2:  No access host configured yet
Entry 3:  No access host configured yet
Entry 4:  No access host configured yet
Entry 5:  No access host configured yet
```

To configure system group parameters and verify the configuration noninteractively:

```
switch:admin> snmpconfig --set systemgroup -syscontact "Field Support" \
   -authTrapEnabled false -sysdescr "Fibre Channel Switch" \
   -syslocation "End User Premise"

switch:admin> snmpconfig --show systemgroup
sysDescr = Fibre Channel Switch
sysLocation = End User Premise
sysContact = Field Support
authTraps = 0 (OFF)
```

To set the SNMP security level and verify the configuration noninteractively:

```
switch:admin> snmpconfig --set seclevel -snmpset 0
SET seclevel cannot be less than GET. Changing SET seclevel to be \
   same as GET. Do you want to continue? (yes, y, no, n): [no] y

switch:admin> snmpconfig --show seclevel
GET security level = 1, SET level = 1
SNMP GET Security Level: Authentication only
SNMP SET Security Level: Authentication only
```

To set the audit interval and verify the configuration noninteractively:

```
switch:admin> snmpconfig --set auditinterval -interval 90
Committing configuration.....done.

switch:admin> snmpconfig --show auditinterval
SNMP Audit Interval (in min): 90
```

To configure groupname to default or RO for SNMPv1 and SNMPv3:

```
switch:admin>snmpconfig --set snmpv1 -groupname ro
2017/09/11-04:36:28, [SNMP-1005], 11457, FID 128, INFO, stinger, SNMP
configuration \
attribute, snmpv1 groupname, has changed from [default] to [RO].
Committing configuration.....done.

switch:admin> snmpconfig --show snmpv1

SNMPv1 community and trap recipient configuration:
  Community 1: hello (ro)
    Trap recipient: 172.26.26.172
    Trap port: 1000
    Trap recipient Severity level: 5
  Community 2: hihi (ro)
    Trap recipient: 10.20.9.11
    Trap port: 1000
    Trap recipient Severity level: 5
  Community 3: highi (ro)
    No trap recipient configured yet
  Community 4: public (ro)
    No trap recipient configured yet
  Community 5: common (ro)
    No trap recipient configured yet
  Community 6: FibreChannel (ro)
    No trap recipient configured yet
SNMPv1:Enabled

switch:admin> snmpconfig --set snmpv3 -groupname ro
2017/09/11-04:49:51, [SNMP-1005], 11458, FID 128, INFO, stinger, SNMP
configuration attribute, snmpv3 groupname, has changed from [default]
to [RO].
Committing configuration.....done.

switch:admin> snmpconfig --set snmpv1 -groupname default
```

```
2017/09/11-04:51:43, [SNMP-1005], 11460, FID 128, INFO, stinger, SNMP
configuration attribute, snmpv1 groupname, has changed from [RO] to
[default].
Committing configuration.....done.
```

To display the SNMPv3 configuration with informs disabled interactively:

```
switch:admin> snmpconfig --show snmpv3

SNMP Informs = 0 (OFF)

SNMPV3 user password encrypted  = 0 (OFF)

SNMPv3 USM configuration:
User 1 (rw): snmpadmin1
            Auth Protocol: noAuth
            Priv Protocol: noPriv
User 2 (rw): snmpadmin2
            Auth Protocol: noAuth
            Priv Protocol: noPriv
User 3 (rw): snmpadmin3
            Auth Protocol: noAuth
            Priv Protocol: noPriv
User 4 (ro): snmpuser1
            Auth Protocol: noAuth
            Priv Protocol: noPriv
User 5 (ro): snmpuser2
            Auth Protocol: noAuth
            Priv Protocol: noPriv
User 6 (ro): admin
            Auth Protocol: noAuth
            Priv Protocol: noPriv

SNMPv3 Trap/Informs configuration:
Trap Entry 1:     1.2.3.4
    Trap Port: 162
    Trap User: snmpadmin1
    Trap recipient Severity level: 4
    Notify Type: TRAP(1)
Trap Entry 2:     No trap recipient configured yet
    Notify Type: TRAP(1)
Trap Entry 3:     No trap recipient configured yet
    Notify Type: TRAP(1)
Trap Entry 4:     No trap recipient configured yet
    Notify Type: TRAP(1)
Trap Entry 5:     No trap recipient configured yet
    Notify Type: TRAP(1)
Trap Entry 6:     5.6.7.8
    Trap Port: 162
    Trap User: admin
    Trap recipient Severity level: 4
    Notify Type: TRAP(1)
```

To enable inform requests to be sent instead of trap requests interactively:

```
switch:admin> snmpconfig --set snmpv3

SNMP Informs Enabled (true, t, false, f): [true]

SNMPV3 Password Encryption Enabled (true, t, false, f): [false]

User (rw): [snmpadmin1]
Auth Protocol [MD5(1)/SHA(2)/noAuth(3)]: (1..3) [3]
Priv Protocol [DES(1)/noPriv(2)/AES128(3)/AES256(4)]): (2..2) [2]
Engine ID: [01:02:03:04:05:06:07:08:09]
User (rw): [snmpadmin2]
Auth Protocol [MD5(1)/SHA(2)/noAuth(3)]: (1..3) [3]
Priv Protocol [DES(1)/noPriv(2)/AES128(3)/AES256(4)]): (2..2) [2]
Engine ID: [00:00:00:00:00:00:00:00:00]
User (rw): [snmpadmin3]
Auth Protocol [MD5(1)/SHA(2)/noAuth(3)]: (1..3) [3]
Priv Protocol [DES(1)/noPriv(2)/AES128(3)/AES256(4)]): (2..2) [2]
Engine ID: [00:00:00:00:00:00:00:00:00]
User (ro): [snmpuser1]
Auth Protocol [MD5(1)/SHA(2)/noAuth(3)]: (1..3) [3]
Priv Protocol [DES(1)/noPriv(2)/AES128(3)/AES256(4)]): (2..2) [2]
Engine ID: [00:00:00:00:00:00:00:00:00]
User (ro): [snmpuser2]
Auth Protocol [MD5(1)/SHA(2)/noAuth(3)]: (1..3) [3]
Priv Protocol [DES(1)/noPriv(2)/AES128(3)/AES256(4)]): (2..2) [2]
Engine ID: [00:00:00:00:00:00:00:00:00]
User (ro): [snmpuser3]
Auth Protocol [MD5(1)/SHA(2)/noAuth(3)]: (1..3) [3]
Priv Protocol [DES(1)/noPriv(2)/AES128(3)/AES256(4)]): (2..2) [2]
Engine ID: [00:00:00:00:00:00:00:00:00]

SNMPv3 trap/inform recipient configuration:
Notify Type [TRAP(1)/INFORM(2)]:(1..2)[1] 2
Inform Recipient's IP address : [0.0.0.0] 10.70.12.115
UserIndex: (1..6) [1]
Inform recipient Severity level : (0..5) [0] 5
Inform recipient Port : (0..65535) [162]
Notify Type [TRAP(1)/INFORM(2)]:(1..2)[1] 2
Inform Recipient's IP address : [0.0.0.0] 1.2.3.4
UserIndex: (1..6) [2]
Informs recipient Severity level : (0..5) [0] 2
Informs recipient Port : (0..65535) [162]
Notify Type [TRAP(1)/INFORM(2)]:(1..2)[1]
Trap Recipient's IP address : [0.0.0.0]
Notify Type [TRAP(1)/INFORM(2)]:(1..2)[1]
Trap Recipient's IP address : [0.0.0.0]
Notify Type [TRAP(1)/INFORM(2)]:(1..2)[1] 1
Trap Recipient's IP address : [0.0.0.0] 10.70.4.106
UserIndex: (1..6) [5]
Trap recipient Severity level : (0..5) [0] 2
Trap recipient Port : (0..65535) [162]
```

```
Notify Type [TRAP(1)/INFORM(2)]:(1..2)[1]
Trap Recipient's IP address : [0.0.0.0]
Committing configuration.....done.
```

To block access to SNMPv1/2c

```
switch:admin> snmpconfig --disable snmpv1
switch:admin> snmpconfig --show
SNMPv1 community and trap recipient configuration:
  Community 1: ram (rw)
    Trap recipient: 172.26.4.84
    Trap port: 162
    Trap recipient Severity level: 5
  Community 2: OrigEquipMfr (rw)
    No trap recipient configured yet
  Community 3: private (rw)
    No trap recipient configured yet
  Community 4: public (ro)
    No trap recipient configured yet
SNMPv1:Disabled
```

References

Refer to the following publications for further information on SNMP:

- *SW_v5_x.mib, "Switch Management Information & Switch Enterprise Specific Trap"*

- *RFC1157, "A Simple Network Management Protocol (SNMPv1)"*

- *RFC1213, "Management information Base for Network Management of TCP/IP-based internets: MIB-II"*

- *RFC2574, "User-based Security Model (USM) for version 3 of the Simple Network Management Protocol (SNMPv3)"*

See Also

None

snmpStatistics

Changes or displays the SNMP throttling attributes.

Synopsis

```
snmpstatistics --set module -maxPT max_pt
    -avgPT avg_pt -mul MUL
snmpstatistics --enable module
snmpstatistics --disable module
snmpstatistics --clear module
snmpstatistics --show
snmpstatistics --help
```

Description

Use this command to change or display the SNMP throttling parameters.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

module

Specifies a module such as SNMP.

--set

Configures the SNMP throttling parameters for the specified module.

-maxPT *max_pt*

Specifies the maximum processing time in milliseconds.

-avgPT *avg_pt*

Specifies the average processing time in milliseconds.

-mul *MUL*

Specifies the base interval. The default value is 1 second.

--enable

Enables SNMP throttling.

--disable

> Disables SNMP throttling.

--clear

> Clears SNMP throttling configuration parameters and statistics.

--show

> Displays the SNMP throttling configuration parameters and statistics.

--help

> Displays the command usage.

Examples

> To set the throttling configuration parameters:
>
> ```
> switch:admin> snmpStatistics --set SNMP -maxPT 250 -avgPT 10 -mul 5
> ```
> To enable SNMP throttling:
>
> ```
> switch:admin> snmpstatistics --enable snmp
> ```
> To disable SNMP throttling:
>
> ```
> switch:admin> snmpstatistics --disable snmp
> ```
> To clear SNMP throttling parameters and statistics:
>
> ```
> switch:admin> snmpstatistics --clear snmp
> ```
> To display SNMP throttling parameters and statistics:
>
> ```
> switch:admin> snmpstatistics --show
> snmpInPkts = 510
> snmpOutPkts = 510
> snmpInBadVersions = 0
> snmpInBadCommunityNames = 0
> snmpInBadCommunityUses = 0
> snmpInASNParseErrs = 0
> snmpInTooBigs = 0
> snmpInNoSuchNames = 0
> snmpInBadValues = 0
> snmpInReadOnlys = 0
> snmpInGenErrs = 0
> snmpInTotalReqVars = 0
> snmpInTotalSetVars = 0
> snmpInGetRequests = 0
> snmpInGetNexts = 0
> snmpInSetRequests = 0
> snmpInGetResponses = 0
> snmpInTraps = 0
> snmpOutTooBigs = 0
> snmpOutNoSuchNames = 0
> ```

```
snmpOutBadValues = 0
snmpOutGenErrs = 0
snmpOutGetRequests = 0
snmpOutGetNexts = 0
snmpOutSetRequests = 0
snmpOutGetResponses = 510
snmpOutTraps = 0
snmpEnableAuthenTraps = 2
snmpSilentDrops = 0
snmpProxyDrops = 0
snmpInformsCreate = 0
snmpInformsAck = 0
snmpInformsSent = 0
snmpInformsErrorResponse = 0
snmpInformsFailed = 0
snmpInformRetries = 0

Throttling config:
Flag                   :  Off
MOD ID                 :  0
Avg PT                 :  10 milli second
Max PT                 :  250 milli second
MUL                    :  5

Throttling Statistics:
last PT                :  0 milli second
Act Avg PT             :  0 nano second
No Of Throttle         :  0
No Of PKT Throttle     :  0
No Of samples          :  0

Debug Stats:
Start Time             :  0 second: 0 nano second
End Time               :  0 second: 0 nano second
Remaining PT           :  0 m
```

See Also

snmpConfig, snmpTraps

snmpTraps

Sends or displays SNMP traps.

Synopsis

```
snmptraps --send [-trap_name trap_name]
      [-ip_address ip_address]
snmptraps --show [port]
snmptraps --block -port [slot]port
snmptraps --unblock -port [slot]port | ALL
snmptraps --help
```

Description

Use this command to manage specific Simple Network Management Protocol (SNMP) traps.

Use the **--send** option to send a specific SNMP trap to a recipient indicated by its IP address. Or use the **--send** option without operands to send all supported traps to all configured SNMP trap recipients. When the command is issued to send all traps, the message returned indicates only the total number of traps sent and not the individual trap names.

In Fabric OS v7.0.0 and later you can block or unblock certain port traps on specified ports. This feature provides control over a subset of port traps including the following: SwFCPortScn, ConnUnitPortStatusChange, and SwFabricSegmentTrap.

Use the **--show** option with the **port** operand to display the status of blocked ports. When used without operands, the **--show** option displays all Management Information Base (MIB) objects and associated traps that are supported in Fabric OS.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--send

> Sends one or all SNMP traps to all configured recipients or to a specified recipient. The following operands are optional:

-trap_name *trap_name*

> Specifies the trap by name. Use **snmptraps --show** for a listing of valid traps.

-ip_address *ip_address*

> Specifies the recipient by its IP address in IPv4 or IPv6 format. IPv6 addresses require Fabric OS v6.4.0 or later.

--block [*slot*]*port*

> Blocks the following port traps on the specified port: SwFCPortScn, ConnUnitPortStatus-Change, and SwFabricSegmentTrap.

--unblock [*slot*]*port* | ALL

> Removes the trap blocking from the specified port or from all ports.

--show [port]

> Displays all configured SNMP traps and MIBs. When used with the optional **port** argument, this command displays the ports that are blocked from receiving certain software traps.

--help

> Displays the command usage.

Examples

> To send all traps to the configured recipients:

```
switch:admin> snmpTraps --send
Number of traps sent : 27
```

> To send a FRU history trap to recipient 172.16.0.12

```
switch:admin> snmptraps --send -trap_name \
      fru-history-trap -ip_address 172.16.0.12.
Number of traps sent : 1
```

> To display the traps and MIBs supported in Fabric OS:

```
switch:admin> snmpTraps --show

#   |Mib Name        |Supported Traps
---|---------------|------------------------------
001|SW-MIB          |sw-fc-port-scn
   |                |sw-ip-v6-change-trap
   |                |sw-pmgr-event-trap
   |                |sw-event-trap
   |                |sw-fabric-reconfig-trap
   |                |sw-fabric-segment-trap
   |                |sw-state-change-trap
   |                |sw-zone-config-change-trap
   |                |sw-port-move-trap
   |                |sw-brcd-generic-trap
   |                |sw-device-status-trap
002|FICON-MIB       |link-rnid-device-registration
   |                |link-rnid-device-deregistration
   |                |link-lirr-listener-added
   |                |link-lirr-listener-removed
   |                |link-rlir-failure-incident
003|FA-MIB          |conn-unit-status-change
```

```
       |                      |conn-unit-port-status-change
       |                      |conn-unit-event-trap
004|MIB-2                 |cold-restart-trap
       |                      |warm-restart-trap
005|IF-MIB                |if-link-up-trap
       |                      |if-link-down-trap
006|RFC1157               |snmp-authentication-trap
007|HA-MIB                |fru-status-change-trap
       |                      |fru-history-trap
       |                      |cp-status-change-trap
008|MAPS-MIB              |maps-trap
       |                      |maps-quiet-time-trap
009|T11-FC-ZONE-SERVER-MIB|t11ZsRequestRejectNotify
       |                      |t11ZsMergeSuccessNotify
       |                      |t11ZsMergeFailureNotify
       |                      |t11ZsDefZoneChangeNotify
       |                      |t11ZsActivateNotify
```

Note: The Zone Mib parameters are for restricted usage only.

To block a single port from receiving traps:

```
switch:admin> snmpTraps --block 17
```

To unblock a previously blocked port:

```
switch:admin> snmpTraps --unblock 17
```

To display the blocked port status:

```
switch:admin> snmpTraps --show port
Port        0      1      2      3      4      5      6      7      8      9
--------------------------------------------------------------------------
Blocked     |      |      |      |      |      |      |      |      |      |

Port       10     11     12     13     14     15     16     17     18     19
--------------------------------------------------------------------------
Blocked     |      |      |      |      |      |      |  Y   |  Y   |      |

Port       20     21     22     23     24     25     26     27     28     29
--------------------------------------------------------------------------
Blocked     |      |      |      |      |      |      |      |      |      |

Port       30     31     32     33     34     35     36     37     38     39
--------------------------------------------------------------------------
Blocked     |      |      |      |      |      |      |      |      |      |
```

See Also

snmpConfig

spinFab

Runs functional test of interswitch link (ISL) cabling and trunk group operation.

Synopsis

```
spinfab
    [-nmegs count]
    [-framesize bytes]
    [-ports itemlist]
    [-setfail mode]
    [-fports flag]
    [-nframes number]
    [-pattern number/name]
    [-timeout length]
```

Description

Use this command to verify the intended functional operation of interswitch links (ISLs) at the maximum speed by setting up the routing hardware so that test frames received by each E_Port are retransmitted on the same E_Port. Several frames are subsequently sent to the neighbor port attached to each active E_Port specified. Because the default action for such frames is to route them back to the sender, which never occurs during normal traffic, the frames circulate until the test terminates.

The frames are continuously transmitted and received in all ports in parallel. For SFP ports, the port LEDs flicker green rapidly while the test is running. The ICL or QSFP port LEDs glow steady green and blinking is not supported.

M->N/M->M loopback ports are tested as well, using the same algorithm, if loopback cables or loopback plugs are present in the switch.

While the frames are circulating, the RX frame count and port CRC and encoder error statistics are monitored. If a port stops or a low-level error occurs, the test generates an error message. Every one million frames, the circulating frames are captured to verify that they are still circulating and in the appropriate order. In this manner, the test can verify the entire path to the remote switch as well as the proper in-order delivery operation of any trunk groups present.

In case of trunk master ports, all the slave ports are also monitored for low-level errors.

The switch remains in normal operation while this test is running. However, some performance degradation may occur due to the ISLs being saturated with test frames. For this reason, use caution when running this test on live fabrics. Consider testing only one trunk group or ISL at a time, and do not run the tests for extended periods of time.

Combine this test with **portLoopBackTest** for ISL link failure isolation. If **spinFab** fails, replace the cable with a loopback plug and run **portLoopBackTest** to verify the local switch and media. If these pass, the fault lies in the cable, the remote switch, or media.

The frame size depends on the amount of buffer credit available on the port. There are eight possible frames that can be sent. Especially with trunking groups, all eight possible frames are used unless there is extensive traffic running on the link. The payload sizes of those eight frames are 1024, 12, 8,1024, 512, 1024, 12, and 1024.

Notes

The following port types support the **spinFab** diagnostics.

- Loopback ports

- E_Ports

- Interchassis link (ICL) E_Ports

- ICLs configured as D_Ports

- D_Ports

- Trunk master ports

- Trunk slave ports

- Ports in logical switches

- Ports in Base Switches

- Loopback ports in D_Port mode between two logical switches on the same switch

- Ports on non-VF connected to VF-configured switch

- Long distance ports

- D_Ports connected to AG switch in D_Port mode

- ICL D_Ports connected to AG switch in D_Port mode

- Loopback ports in D_Port mode connected to AG switch

The following ports do not support the **spinFab** test:

- F_Ports connected to non-Brocade-branded HBA

- F_Port connections to N_Port on AG switch

- F_Port on VF-enabled switch

- Ports on AG switch connected to HBA

- AE_Ports

- AF_Ports

- EX_Ports

- E_Ports connected to EX_Ports

- F_Ports converted to D_Ports

- Core blade connected to port blade

When trunk groups are present, the entire trunk group must be included in the range of ports to test or false failure notifications may occur. If multiple ISL links are present between two switches that support trunking, then it is likely that trunk groups are present and all ports between the two switches should be tested at the same time.

You cannot interrupt the test by pressing the return key (<cr>).

This command supports a maximum of 16 paths to a single remote domain.

When new logical switches are created, appropriate switch domain must be set to avoid domain ID overlap when running spinfab. With insistent DID turned off to overcome this issue, DID negotiation depends on when the switch is powered on. A reboot of the switches with links already established re-configures the domain if the domain ID is already in use by another switch in the fabric, to avoid convergence.

Spinfab tests skips F_Ports if Virtual Fabric is enabled on any platform.

Spinfab is not supported on F_Port that is configured as a D_Port. Please use the **portDPortTest** command for the link validation on F_Ports configured as D_Ports.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

-nmegs *count*

Specifies the number of frames to send in millions. The test progresses until the specified number of frames has been transmitted on each port. The default value is 10 million frames. This command only approximately counts the frames and the actual number of frames sent will be slightly larger, particularly at link speeds of 4Gb/s or higher.

-framesize *bytes*

For internal use only. Not supported.

-ports *itemlist*

Specifies a list of user ports to test. By default, all of the ISL ports in the current switch are tested. Refer to **itemList** for further details.

-setfail *mode*

Instructs **spinFab** how to mark failed ports. Valid values include the following:

0

Does not mark failing ports as FAILED (default). This option minimizes the impact on live fabrics.

1

Marks the failing ports as FAILED. In test or qualification environments without live traffic, this may be useful with large values of **-nmegs** *count*. This mode is disabled by default.

-fports *flag*

Instructs **spinFab** to include or exclude F_Ports in the testing. This feature is disabled by default. If enabled, **spinFab** tests the F_Ports connected to Brocade-branded HBAs along

with other valid ports (E-ports & Loopback ports). The HBA must be running firmware v2.1.1 or higher. Valid flag values include the following:

0

Does not include F_Ports in the port list for testing (default).

1

Includes F_Ports in the port list for testing.

-nframes *number*

Determines how many frames will be sent by spinfab on the link to spin. Default is 2. The maximum number is 5. If you want to configure more than 5 use **-nframes 0**.

-pattern *number*/*name*

Forces spinfab to use a particular data pattern for the frames it spins between ports. The pattern can be a user defined pattern or is selected from a set of twenty five predefined pattern types. Use the **datatypeshow** command to view the predefined patterns supported with spinfab. For each pattern, the **datatypeshow** command displays the name, the pattern type number, and an example. Specify the pattern by its name after the **-pattern** option. If pattern is not specified, it defaults to jCRPAT (type=17). To use a user defined pattern, follow the **-pattern** option with a 32 bit hexadecimal number.

-timeout *length*

Defines a time limit (in seconds) for the running of spinfab. Spinfab will keep track of how long the test has run and stop testing once the timeout limit has been reached. The overall accuracy will be in the tens of seconds.

Diagnostics

When it detects failures, the test may report one or more of the following error messages. If errors persist, contact Technical Support.

```
DATA
ERR_STAT
ERR_STATS
ERR_STATS_2LONG
ERR_STATS_BADEOF
ERR_STATS_BADOS
ERR_STATS_C3DISC
ERR_STATS_CRC
ERR_STATS_ENCIN
ERR_STATS_ENCOUT
ERR_STATS_TRUNC
ERR_STAT_2LONG
ERR_STAT_BADEOF
ERR_STAT_BADOS
ERR_STAT_C3DISC
ERR_STAT_CRC
```

```
ERR_STAT_ENCIN
ERR_STAT_ENCOUT
ERR_STAT_TRUNC
FINISH_MSG_ERR
INIT
MBUF_STATE_ERR
NO_SEGMENT
PORT_ABSENT
PORT_DIED
PORT_ENABLE
PORT_M2M
PORT_STOPPED
PORT_WRONG
RXQ_RAM_PERR
STATS
STATS_C3FRX
STATS_FRX
STATS_FTX
TIMEOUT
XMIT
```

Examples

To test cascading ISLs:

```
switch:admin> spinfab -ports 1/0 - 1/2
spinfab running...
spinfab: Completed 11 megs, status:  passed.
        port 0 test status: 0x00000000 -- passed.
        port 1 test status: 0x00000000 -- passed.
        port 2 test status: 0x00000000 -- passed.
Test Complete: "spinfab" Pass 10 of 10
Duration 0 hr, 0 min & 41 sec (0:0:41:877).
passed.
```

See Also

itemList, portLoopbackTest, portPerfShow

sshUtil

Manages public key authentication.

Synopsis

```
sshutil allowuser user name
sshutil showuser
sshutil importpubkey
sshutil showpubkeys
sshutil delpubkeys
sshutil genkey [-rsa | -dsa | -ecdsa]
sshutil exportpubkey
sshutil delprivkey
sshutil delknownhost [-all]
sshutil genhostkey [-rsa | -dsa | -ecdsa]
sshutil showhostkey
sshutil delhostkey [-rsa | -dsa | -ecdsa]
sshutil rekeyinterval value
sshutil showrekey
sshutil help
```

Description

Use this command to enable and manage SSH public key authentication on a switch. SSH public key authentication provides a mechanism for authenticating an authorized user without a password. SSH public key authentication is more secure than password authentication and can be used to securely access services that require automatic login.

SSH public key authentication works as follows: An authorized user generates a pair of encryption keys (public and private) on a local machine (a switch or a server). Messages encrypted with the private key can only be decrypted by the public key, and vice versa. The private key remains on the local machine; the public key is exported to a remote host. The remote host responds to login requests by sending a brief message encrypted with the public key. The private key on the local host decrypts the message, and the login succeeds.

Use the **sshUtil** command to do the following:

- Configure a user to manage keys on a switch.

- Generate a private/public key pair on the local switch.

- Import a public key for a specified user from a remote host to the local switch.

- Export the public key from the local switch to a remote host.

- Delete the public keys associated with a specified user or all users on the local switch.

- Delete the private key on the local switch.

- Delete the known host name or IP address from the file .ssh/known_hosts.

- Generate, display, and delete the SSH host keys.

- Configure and display SSH rekey interval.

Notes

> The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.
>
> Outgoing public key authentication from the switch to a remote host is restricted to Fabric OS Commands which use secure copy (SCP), such as **configDownload** or **configUpload**.
>
> This command supports generation of a public/private key pair on the switch to enable outgoing connections between a switch and a remote host. To set up incoming connections, you must first generate the public/private key pair on a remote host and then import the public key to the switch. Use the SSH utility **ssh-keygen -t dsa** to generate the keys on the remote host. Refer to your UNIX system documentation for details on this command.

Operands

> This command supports the following operands:
>
> **allowuser** *user name*
>
>> Configures the specified user to perform key management operations such as to generate a key pair, export the public key, and delete the private key. The default admin is, by default, a configured user. Only one user can be configured at any given time.
>>
>> The following operand is required:
>
> *user name*
>
>> Specifies login name for the configured user. The user must be in the switch user database and must have admin privileges on the switch.
>
> **showuser**
>
>> Displays the currently configured user. This operation can only be performed by the default admin.
>
> **importpubkey**
>
>> Imports a public key from a remote host to the local switch. The protocol used is SCP. This operation supports authentication for incoming connections. For this operation to succeed, a public/private key pair must be generated on the remote host prior to the import by issuing **ssh-genkey -t dsa** (a UNIX command). The command prompts for a user name for whom the public key is imported. Once the public key is imported successfully, the user for whom the key was imported can perform public key authentication with the switch from the remote host, on which the private key resides.
>>
>> **importpubkey** prompts for the following input parameters:
>
> *Username*
>
>> Enter the user name for whom the key is imported.

IP Address

    Enter the IP address for the remote host. IPv4 and IPv6 addresses are supported.

remote directory

    Enter the path where the public key is stored on the remote host. The default directory where SSH stores public keys is ~username/.ssh.

public key name

    Enter the name of the file in which the public key is stored on the remote host. This is a user-generated file name that must have a .pub extension.

login name

    Enter the user login name for the remote host.

password

    Enter the password for the remote user.

showpubkeys

    Displays all imported public keys associated with the specified user. Public keys generated on the switch are not shown. This command interactively prompts for a username.

username

    Enter the username for whom you want to display the public keys.

delpubkey

    Deletes all imported public keys associated with a specified user on the switch or with all users. This command prompts for the user name associated with the public keys. Enter "all" to delete the public keys of all users. Deletion of a configured user's public keys effectively blocks incoming connections from this user that rely on public key authentication with the switch.

genkey [-rsa | -dsa | -ecdsa]

    Generates a private or public key pair for the selected type on the local switch. This option can be performed only by a configured user. This option enables authentication for outgoing connections from the switch to a remote host. You must export the public key to a remote host to complete the setup. For incoming connections, the private or public key must first be generated on the remote host by issuing **ssh-genkey -t dsa** (a UNIX command), and then importing the public key from the remote host to the switch using the **sshutil import** command.

    genkey prompts for user input on the following parameters:

passphrase

> Accepts a string of arbitrary length. This operand is optional, but creating a pass phrase is strongly recommended. A strong pass phrase is 10-30 characters long, fairly complex and difficult to guess. and contains a mix of upper and lowercase letters, numbers, and nonalphanumeric characters. There is no way to recover a lost pass phrase. If the pass phrase is lost, a new key must be generated and copied to the corresponding public key to other machines.

exportpubkey

> Exports the public key from the switch to a specified remote host to support outgoing connections from the switch to a remote host. This option can only be performed by a configured user. The successfully exported public key must be appended to the authorized_keys file on the remote host. Use the **cat ~/.ssh/outgoing.pub >> ~/.ssh/authorized_keys** command to append the file.
>
> **exportpubkey** prompts for IP Address, remote directory, login name and password. Refer to **importpubkey** for a description of these parameters.

delprivkey

> Deletes the private key for outgoing connection from the switch. This option can only be performed by a configured user. Deletion of a configured user's private keys effectively blocks outgoing connections initiated by this user that rely on public key authentication with a remote host.

delknownhost [-all]

> Deletes the known host name or IP address from the file .ssh/known_hosts. This option can only be performed by the authorized user. On deletion of a known host name or IP address from the .ssh/known_hosts file, the next SSH connection prompts the user to accept a new public key.

-all

> Deletes all the known host names or IP addresses from the file.

genhostkey [-rsa | -dsa | -ecdsa]

> Generates a host key and installs it on the switch.

showhostkey

> Displays the host keys installed on the switch.

delhostkey [-rsa | -dsa | -ecdsa]

> Deletes the host keys installed on the switch.

rekeyinterval *value*

> Configures time duration in seconds for regenerating the session keys. The rekey process is initiated after every configured seconds. Valid values are 0, or from 900 through 3600. If you set the rekey interval to 0, rekey process is not initiate for the session.

showrekey

> Displays the configured rekey interval in seconds.

help

> Displays the command usage.

Examples

> To configure a user for public key authentication:

```
switch:admin> sshutil allowuser username
Allowed user has been successfully changed to username.
```

> To display the configured user:

```
switch:admin> sshutil showuser
   username
```

> To set up SSH public key authentication on a switch for incoming connections:

> 1) Generate a private/public key pair on a remote host (accept default directory and file name):

```
username@remotehost> ssh-keygen -t dsa
   Generating public/private dsa key pair.
   Enter file in which to save the key \
      (/users/home/username/.ssh/id_dsa):
   Enter passphrase (empty for no passphrase):passphrase
   Enter same passphrase again: passphrase
   Your identification has been saved in  \
      /users/home/username/.ssh/id_dsa.
   Your public key has been saved in   \
      /users/home/username/.ssh/id_dsa.pub.
   The key fingerprint is:
   3 0:9f:ae:b6:7f:7e:55:e4:b2:7a:51:f0:95:44:5c:d1
```

> 2) Import the public key from the remote host to the local switch:

```
switch:username> sshutil importpubkey
   Enter user name for whom key is imported: username
   Enter IP address:Remote host IP Address
   Enter remote directory: ~username/.ssh
   Enter public key name(must have .pub suffix):id_dsa.pub
   Enter login name:username
   Password:******
   public key is imported successfully.
```

> 3) Connect to switch using remote ssh client with the **-i** *private_key* option:

```
username@remotehost> ssh username@IP Address-i id_dsaIP Address-i
id_dsaIP Address-i id_dsa
```

To display the imported public keys on a switch:

```
switch:username> sshutil showpubkeys
Enter user name whose ssh public key is to be displayed: username
user's public keys
ssh-dss AAAAB3NzaC1kc3MAAACBANXuRsJoIA0PFJtGuZVLfqvfSr\
DYPplWuFouOmTcmuNvpTnd+yoZ
u3C/lAu930HLTmhfxeke/NWRIdj2MJS8yTf30a0u4bf9MSNB8Pt453P/+ \
    7VHHxNBYsh+Z++Dv1hfcTeb
0s53bdf7jyYSUdj1k+w//sNTaz0DCs0+rimo4l2NAAAAFQDCuHKRctSH \
    D8PRYu5Ee1yWCQKT/wAAAIAo
AMvr1ooq0JVXmXfd0VKcC7AImzFYgRa/FOxZBe4JDkCAXztFk5wnAFy \
    UbyTWEoC955mkYGqZRydMrSNM
9wLCAf2DTxXxuHFujA1REL5NGdZqRWo2Sk5HLkYQQYM1w9r9vfK  \
    QnFH3wYsnHV2sq7+tyRlXfwE416ee
chdwWVpmjgAAAIEAqxcaE1vY4o/cBq1Py62lPaZTcfOHS3jjdKgSO  \
    BKPCCVeNyx4gxnmqvihtyroeWAY
dBDK4CFgyhut16a/QmdFjn6iyiNR2SGV7X9xqkjPN8H4EhIPXGxoD  \
    VOfY1Vdt3V3KUxVeEI+vTBI2KJd
PmmLfyEKZqCHOlwBx+HuuZP2BnU= username@host
```

To delete all imported public keys for a single user:

```
switch:username> sshutil delpubkeys
Enter user name for whom ssh public key is to deleted \
    or all for all users:username
WARNING: It deletes all the ssh public keys for user. \
     Do you want to proceed(Yes or No, default is No)?yes
ssh public keys associated to username are deleted.
```

To set up SSH public key authentication on a switch for outgoing connections:

1)   Generate a private/public key pair on the local switch:

```
switch:username> sshutil genkey -rsa
Enter passphrase (empty for no passphrase):passphrase
Enter same passphrase again: passphrase
Key pair generated successfully.
```
2)   Export the public key to a remote host:

```
switch:username> sshutil exportpubkey
   Enter IP address: remote host IP Address
   Enter remote directory: ~username/.ssh
   Enter login name:username
   Password:******
   public key out_going.pub is exported successfully.
```
3)   Append the public key to the authorized_keys file on the remote host:

```
username@remotehost> cat ~/.ssh/outgoing.pub >> \
        ~/.ssh/authorized_keys
```

To delete the private key on a switch:

```
switch:username> sshutil delprivkey
   private key is deleted successfully.
```

To delete a known host or IP address from the file .ssh/known_hosts:

```
switch:username> sshutil delknownhost
IP Address/Hostname to be deleted:172.26.26.104
```

To delete all the known hosts or IP addresses from the file .ssh/known_hosts:

```
switch:username> sshutil delknownhost -all
This Command will delete all the known host keys.
Please Confirm with Yes(Y,y), No(N,n) [N]: Y

All known hosts are successfully deleted.
```

To configure the rekey interval to 900 seconds:

```
switch:username> sshutil rekeyinterval 900
```

To display the configured rekey interval:

```
switch:username> sshutil showrekey
configured rekey duration 900 seconds.
```

See Also

        None

statsClear

Clears port and diagnostic statistics.

Synopsis

```
statsclear
      [--slot slot]
      [-uports itemlist]
      [-bports itemlist]
      [-use_bports value]
```

Description

Use this command to clear the port and diagnostics statistics for the specified list of blade or user ports.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

The following are optional:

--slot *slot*

Specifies the slot on which to operate. If this option is not specified, the default slot is assumed. The default slot is 0 and designed to operate on fixed-port-count products, if **-use_bports** sets with nonzero value.

-uports *itemlist*

Specifies the list of user ports for which statistics are to be cleared.

-bports *itemlist*

Specifies the list of blade ports for which statistics are to be cleared.

-use_bports *value*

Specify a nonzero value to clear the diagnostics statistics for the blade ports specified in **-bports** clears. A value of zero (0) clears the user ports specified in **-uports**. The default value is 0.

Examples

To clear port and diagnostic statistics:

```
switch:admin> statsclear -bports 1/10-1/62 -use_bports 1
```

See Also

    itemList

stopPortTest

Terminates the running **portTest**.

Synopsis

stopporttest [**-ports** *itemlist*]

Description

Use this command to terminate the **portTest** command. Refer to the **portTest** help page for more information.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operand:

-ports *itemlist*

Terminates the test on the specified ports; this operand is optional; if omitted, the test is terminated on all ports. Refer to the **itemList** help page for more information.

Examples

To stop the **portTest** command:

switch:admin> **stopporttest**

See Also

portLoopbackTest, portTest, portTestShow, spinFab

supportFfdc

Modifies or displays the first-fault data capture (FFDC) daemon.

Synopsis

supportffdc [**--disable** | **--enable** | **--show**]

Description

Use this command to disable or enable the FFDC events, or to display the current configuration. If disabled, the daemon does not capture any data even when a message with FFDC attributes is logged. FFDC is enabled by default. When executed without operands, the command prints the usage.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--disable

> Disables the FFDC.

--enable

> Enables the FFDC.

--show

> Displays the FFDC configuration parameters.

Examples

To display the FFDC configuration:

```
switch:admin> supportffdc --show
First Failure Data Capture (FFDC) is disabled.
```

To enable the FFDC events:

```
switch:admin> supportffdc --enable
First Failure Data Capture (FFDC) is enabled.
```

See Also

None

supportFtp

Sets, clears, or displays support FTP parameters and enables or disables auto file transfer.

Synopsis

```
supportftp [-S]
supportftp -s [-h host][-u username][-p password]
     [-d remotedirectory] [-l protocol]
supportftp -t hours
supportftp -R
supportftp -e
supportftp -d
```

Description

Use this command to set, clear, or display **supportFtp** parameters. The parameters set by this command are used by the **supportSave** and **traceDump** commands.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

-S

Displays the current **supportFtp** parameters.

-s

Sets the **supportFtp** parameters. The following operands are optional. If the **-s** option is specified without further operands, the command interactively prompts for these parameters.

-h *host*

Specifies the host. Provide an IP address or a server name. IPv4 and IPv6 addresses are supported. To specify the host by name, a DNS entry must exist for the server.

-u *username*

Specifies the user name. The user name must be less than 48 characters long.

-p *password*

> Specifies the account password. The password must be less than 48 characters long. When using the reserved user names such as *anonymous* or *FTP*, a password is not required.

-d *remotedirectory*

> Specifies the remote directory where the trace dump files are stored. The directory name must be less than 48 characters long. Specifying the root directory as the remote directory (/) is not allowed.

-l *protocol*

> Specifies the transfer protocol. Valid values are file transfer protocol (FTP), secure copy protocol (SCP), or secure FTP (SFTP).

-t *hours*

> Specifies the time interval, in units of hours, at which the server connectivity is checked. The fractional value for time interval is converted to the nearest lower integer value, for example, a value of 6.5 hours is truncated to 6 hours.

-R

> Clears all **supportFtp** parameters.

-e

> Enables auto file transfer. Trace dump files are automatically transferred to a designated FTP server. The server parameters must be set before you can enable auto file transfer.

-d

> Disables auto file transfer.

Examples

To set the FTP parameters:

```
switch:admin> supportftp -s -h 1080::8:800:200C:417A  \
    -u admin -p password -d support -l sftp
supportftp: ftp parameters changed.
```

To display the FTP parameters:

```
switch:admin> supportftp
Host IP Addr:    1080::8:800:200C:417A
User name:            admin
Remote Dir:           support
Auto Upload protocol:  sftp
Auto-FTP:        Off
```

To set FTP parameters interactively:

```
switch:admin> supportftp -s
Host IP Addr[1080::8:800:200C:417A]:192.168.67.126
User Name[admin]: admin
Password[********]:password
Remote Dir[support]:
Auto upload protocol[ftp]:scp
Auto file transfer parameters changed
```

To set the time interval at which the FTP server connectivity is checked:

```
switch:admin> supportftp -t 24
supportftp: ftp check period changed.
```

To enable auto file transfer:

```
switch:admin> supportftp -e
support auto file transfer enabled.
```

To disable auto file transfer:

```
switch:admin> supportftp -d
support auto file transfer disabled.
```

See Also

supportSave, supportShow, traceDump

supportInfoClear

Clears all the default port statistic counters and portlogs in a chassis or switch.

Synopsis

```
supportinfoclear --clear [ -RASlog] [-force]
supportinfoclear --help
```

Description

Use this command to clear all the default port statistic counters, and portlogs in a chassis or switch. Use the **-RASlog** option to clear error logs along with statistics and portlogs on the active CP. On the standby CP, the **-RASlog** option clears only the error logs.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--clear

Clears port statistic counters and portlogs in a chassis or switch. The command prompts for a confirmation.

-RASlog

Clears error logs along with port statistic counters and portlogs in a chassis or switch. The command prompts for a confirmation.

-force

Executes without prompting for a confirmation.

--help

Displays command usage.

Examples

To clear port statistic counters and portlogs:

```
switch:admin> supportinfoclear --clear
Execution of the command will clear the default collection of counters
and port logs in the chassis.
Would you like to continue [y/n]?: y
```

To clear port statistic counters and portlogs along with error logs:

```
switch:admin> supportinfoclear --clear -RASlog
Execution of the command will clear the error logs along with default
collection of counters and port logs in the chassis.
Would you like to continue [y/n]?: y
```

See Also

errClear, portLogClear, portStatsClear, statsClear

supportLink

Configures a Brocade Support Link (BSL) to collect and upload critical device information to a BSL server module over a secured channel.

Synopsis

```
supportlink --enable | --disable | --default | --send
supportlink --config [-user user_name | -stime start_time_in_hour_[0-23]
|
     -sdate service_start_date_in_week day [Mon...Sun] or "MM/DD/YYYY"
format
     -endtimeperiod service_end_time_period_[0-12] |
     -retry service_retry_time |
     -period in_day | -server server-ip/domain-name |
     -port port_number | -grouptag user_group_tag_field |
     -proxyserver server_ip/domain_name | -proxyport proxyport |
     -proxyprotocol proxy_protocol | -proxyuser proxy_user_name |
     -proxypass proxy_password ]
supportlink --show
```

Description

Use this command to configure BSL to provide support for cloud data service configuration.

BSL is disabled by default on Brocade Gen5 or Brocade Gen6 platforms and needs to be enabled manually.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--config

Configures Support Link parameters.

-user *user_name*

The existing user name or an Email address from the server.

-stime *start_time_in_hour_[0-23]*

The start time for the service to take place. The default value is 21 and the valid values ranges from 0 through 23.

-sdate *service_start_date_in_week day [Mon...Sun]*
......or "MM/DD/YYYY" format

>   The start date or the day for the service in "MM/DD/YYYY" format. The start date must
>   be an exact weekday or a date. For example, if Sunday is configured the **-period** must be
>   set to 7 days to make it as weekly runs. If the exact date is configured, for example 07/
>   30/2018, the **-period** must be set to any value as per the maximum and minimum timer
>   configuration.

-endtimeperiod *service_end_time_period_[0-12]*

>   The collection happens within the end time period taken randomly from the start time. The
>   default value is 12 and the valid values ranges from 0 through 12.

-retry *service_retry_time*

>   The service starts again after an hour(s) elapsed from the failure, if a non-zero value is
>   set. The default value is 0 and the valid values ranges from 0 through 22.

-period *in_day*

>   The frequency in which the service must be triggered. The default value is 7. For
>   example, if Sunday is configured the **-period** must be set to 7 days to make it as weekly
>   runs. If the exact date is configured, for example 07/30/2018, the **-period** must be set to
>   any value as per the maximum and minimum timer configuration.

-server *server_ip/domain_name*

>   The server address or the domain name of the server.

-port *port_number*

>   The server port number.

-grouptag *user_group_tag_field*

>   The organizational group of switches. The group name can be up to 64 characters in
>   length.

-proxyserver *server_ip/domain_name*

>   The proxy server address or the proxy domain name of the server.

-proxyport *proxyport*

>   The proxy server port number.

-proxyprotocol *proxy_protocol*

>   The protocol used for proxy server. The supported proxy protocols are http, https,
>   socks4, socks4a, socks5, and socks5h.

-proxyuser *proxy_username*

>   The username of the proxy server.

-proxypass *proxy_password*

>   The password to the proxy server.

--enable | --disable

>   Enables or disables Support Link. Support Link is disabled by default.

--default

>   Resets the custom configurations to default and removes the other used-defined configurations.

--send

>   Manually triggers an immediate Support Link upload. Automatic uploads will still occur as per the configured schedule.

--show

>   Displays the BSL configuration information.

Examples

>   To configure a support link and display the configuration information:

```
switch:admin> supportlink --config -server connect.broadcom.com \
-port 8449 -user support@broadcom.com -stime 16 -sdate "11/10/2018" -
period 1 \
-proxyserver broadcom-proxy.com -proxyport 8443 -proxyprotocol https \
-proxyuser brcduser -proxypass password

switch:admin> supportlink --show
Support Link State          : Enabled
Next Service Start Time      : Thu Nov 15 15:00:00 2018
Next Service Retry Time      : Wed Nov 14 15:00:00 2018
Last Upload Time             : Wed Nov 13 15:02:10 2018

Support Link Configurations:
    Server Address           : connect.broadcom.com
    Server Port              : 8449
    User name                : support@broadcom.com
    Start Date               : 11/14/2018
    Start Time (in hour)     : 15
    End Time Period (in hour) : 0
    Retry Time (in hour)     : 1
    Service Period (in day)  : 1
    User Group Tag           : fabricA
    Proxy Server             : broadcom-proxy.com
```

```
       Proxy Server Port          : 8443
       Proxy Server Protocol      : https
       Proxy Server User name     : brcduser
```

To enable support link:

```
switch:admin> supportlink --enable
Support link enabled successfully.

switch:admin> supportlink --show
Support Link State           : Enabled
Next Service Start Time      : Thu Nov 15 15:00:00 2018
Next Service Retry Time      : Wed Nov 14 15:00:00 2018
Last Upload Time             : Wed Nov 13 15:02:10 2018

Support Link Configurations:
       Server Address             : connect.broadcom.com
       Server Port                : 8449
       User name                  : support@broadcom.com
       Start Date                 : 11/14/2018
       Start Time (in hour)       : 15
       End Time Period (in hour)  : 0
       Retry Time (in hour)       : 1
       Service Period (in day)    : 1
       User Group Tag             : fabricA
       Proxy Server               : broadcom-proxy.com
       Proxy Server Port          : 8443
       Proxy Server Protocol      : https
       Proxy Server User name     : brcduser
```

To disable support link:

```
switch:admin> supportlink --disable
Support link disabled successfully.

switch:admin> supportlink --show
Support Link State           : Disabled
Next Service Start Time      : Thu Nov 15 15:00:00 2018
Next Service Retry Time      : Wed Nov 14 15:00:00 2018
Last Upload Time             : Wed Nov 13 15:02:10 2018

Support Link Configurations:
       Server Address             : connect.broadcom.com
       Server Port                : 8449
       User name                  : support@broadcom.com
       Start Date                 : 11/14/2018
       Start Time (in hour)       : 15
       End Time Period (in hour)  : 0
       Retry Time (in hour)       : 1
       Service Period (in day)    : 1
       User Group Tag             : fabricA
       Proxy Server               : broadcom-proxy.com
       Proxy Server Port          : 8443
```

```
        Proxy Server Protocol     : https
        Proxy Server User name    : brcduser
```

To trigger support link operation:

```
switch:admin> supportlink --send
Supportlink data service has been started.
```

See Also

mgmtApp

supportSave

Saves RASLOG, TRACE, **supportShow**, core file, FFDC data, and other support information

Synopsis

```
supportsave
supportsave [-n] [-c] [-k] [-a]
      [-u user_name -p password -h host_ip
      -d remote_dir -l protocol]
supportsave [-R]
supportsave [-U -d remote_dir]
supportsave [-t timeout_multiplier]
```

Description

Use this command to collect RASLOG, TRACE, **supportShow**, core file, FFDC data and other support information to a remote FTP location. On platforms that support USB, the information can also be stored on an attached USB device. On a dual-CP system, information is saved for the local and the remote CP. **SupportShow** information is available on Active and Standby CPs. To reduce the chance of missing the correct trace dump, **supportSave** retrieves old (the dump created prior to the current one) and new (the dump triggered by the command) trace dumps.

The files generated by this command are compressed before being sent off the switch. The core files and panic dumps remain on the switch after the command is run. The FFDC data are removed after the command has finished.

If there are blade processor (BP) blades installed on the switch, a support file (a.tar.gz file) is generated from each slot.

This command accepts IPv4 and IPv6 addresses. If the configured IP address is in IPv6 format, the RAS auto file transfer and event notification to syslog will not work in the case where the Fabric OS version is downgraded. You must reconfigure auto file transfer and syslog with IPv4 IP addresses.

In a Virtual Fabric environment, **supportSave** saves all chassis-based information and iterates through the defined switch-based information for all logical switches. Chassis permissions are required to execute this command.

Note that quotes should be used around path entries to ensure proper handling of special shell characters.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

If you use anonymous FTP to run **supportSave** on a chassis with multiple AP blades, configure the FTP Windows server to allow unlimited anonymous users.

Operands

When invoked without operands, this command goes into interactive mode. The following operands are optional:

-n

Does not prompt for confirmation. This operand is optional; if omitted, you are prompted for confirmation.

-c

Uses the FTP, SCP, or SFTP parameters saved by the **supportFtp** command. This operand is optional; if omitted, specify the FTP, SCP, or SFTP parameters through command line options or interactively. To display the current **supportFTP** parameters, run **supportFtp** (on a dual-CP system, run **supportFtp** on the active CP).

The **-c** option is mutually exclusive with **-u**, **-p**, **-h**, and **-d**.

-k

Used to transfer the core and FFDC files. This operand can be specified with the **-c** and **-c -n** operands.

-a

Enables Challenge Response Authentication (CRA). CRA is supported only with the SCP protocol.

-u *user_name*

Specifies the user name for the FTP, SCP, or SFTP server. The user name can include upto 128 characters. It must begin with a letter and spaces are not permitted. The characters that do not support are tilde (~), single quotation mark ('), exclamation mark (!), number sign (#), dollar sign($), percentage (%), caret (^), ampersand(&), asterisk(*), plus sign (+), equals sign (=), pipe (|), parenthesis (), curly braces {}, square brackets [], double quotation mark ("), colon (:), comma (,), question mark (?), semicolon (;), greater than (>), and less than (<). Use at (@) or backslash (\\) in username to separate username and domain. This operand is optional; if omitted, anonymous FTP is used.

-p *password*

Specifies the password for the FTP, SCP, or SFTP server. This operand is optional with FTP; if omitted, anonymous FTP is used.

-h *host_ip*

Specifies the IPv4 or IPv6 address for the remote server.

-d *remote_dir*

Specifies the remote directory to which the file is to be transferred. By default, the remote directory is created in the */support*directory of the USB device.

-R

> Removes all core files on the CP and BP. This option cannot be used with any other options.

-l *protocol*

> Specifies the transfer protocol. Valid values are file transfer protocol (FTP), secure copy (SCP), or secure FTP (SFTP).
>
> If you plan to use SCP to transfer files, it is important to test the **supportSave** command prior to its use with various SCP-mode services. Because the **supportSave** command makes several access requests to copy files, it is important that the SCP-mode service be configured so that passwords are not required for each attempted transfer by the **supportSave** command. Failure to configure the service correctly may result in significant delays in obtaining transferred output from the **supportSave** command.
>
> When using secure copy (SCP), **supportSave** may create a directory specified by the **-d** option if it does not already exist and the parent directory has the appropriate permissions. Use of FTP requires the directory to exist on the remote server.

-U

> Saves support data to an attached USB device. When using this option, a target directory must be specified with the **-d** option.

-t *timeout_multiplier*

> Extends predefined **SupportSave** timeout values by the value of the timeout multiplier. Use this option to repeat the **supportSave** operation when **supportSave** completion indicates that one or more modules timed out during the process. For example, **-t 2** doubles the timeout values for each of the **SupportSave** modules. Valid multiplier values are 2 to 5. The default is 1.

Examples

To save RASLOG, TRACE, **supportShow**, and other support information to an FTP server in interactive mode:

```
switch:admin> supportsave
This command collects RASLOG, TRACE, supportShow, \
   core file, FFDC data
and then transfer them to a FTP/SCP/SFTP server \
   or a USB device.
This operation can take several minutes.
NOTE: supportSave will transfer existing trace dump \
   file first, then
automatically generate and transfer latest one. \
   There will be two trace dump
files transferred after this command.
OK to proceed? (yes, y, no, n): [no] y

Host IP or Host Name: 192.168.126.115
```

```
User Name: admin
Password:*******
Protocol (ftp | scp | sftp): scp
Remote Directory: /temp/support

Do you want to continue with CRA (Y/N) [N]: Y

Saving support information for chassis:HL51,module:RAS...
Saving support information for chassis:HL51,module:TRACE_OLD...
Saving support information for chassis:HL51,module:TRACE_NEW...
Saving support information for chassis:HL51,module:FABRIC...
Saving support information for chassis:HL51,module:CORE_FFDC...
Saving support information for chassis:HL51,module:DIAG...
Saving support information for chassis:HL51,module:RTE...
Saving support information for chassis:HL51,module:ISCSID_DBG...
Saving support information for chassis:HL51,module:AGDUMP...
Saving support information for chassis:HL51,module:SSHOW_PLOG...
Saving support information for chassis:HL51,module:SSHOW_OS...
Saving support information for chassis:HL51,module:SSHOW_EX...
Saving support information for chassis:HL51,module:SSHOW_FABRIC...
(output truncated)
```

To collect support information on a switch and save it to an attached USB device (timeout values are doubled):

```
switch:admin> supportsave -U -d mysupportsave -t 2
Saving support information for switch:ras072, module:RAS...
.................................................................

Saving support information for switch:ras072, module:FTR_START...
Saving support information for switch:ras072, module:SSHOW_SYS...
.............................................

Saving support information for switch:ras072, module:SSHOW_ISWITCH...

Saving support information for switch:ras072, module:FABRIC...
...............

Saving support information for switch:ras072, module:DIAG...
.......

Saving support information for switch:ras072, module:RTE...
Saving support information for switch:ras072, module:IF_TREE...
Saving support information for switch:ras072, module:ISCSID_DBG...
Saving support information for switch:ras072, module:AGDUMP...
Saving support information for switch:ras072, module:AGWWNS...
Saving support information for switch:ras072, module:AGWWN_CFG...
Saving support information for switch:ras072, module:VPWWN_CFG...
.....
(output truncated)
```

To run **supportSave** without confirmation on a chassis with AP blades included using **supportFTP** parameters (only Active CP output is shown):

```
switch:admin> supportsave -n -c
```

```
         Saving support information for chassis:ras2,module:RAS...
         Saving support information for chassis:ras2,module:TRACE_OLD...
         Saving support information for chassis:ras2,module:TRACE_NEW...
         Saving support information for chassis:ras2,module:FABRIC...
         Saving support information for chassis:ras2,module:CORE_FFDC...
         Saving support information for chassis:ras2,slot:4...
         slot 4 support file transfer done.
         Saving support information for chassis:ras2,slot:12...
         slot 12 support file transfer done.
         Saving support information for chassis:ras2,module:DIAG...
         Saving support information for chassis:ras2,module:RTE...
         Saving support information for chassis:ras2,module:ISCSID_DBG...
         Saving support information for chassis:ras2,module:AGDUMP...
         Saving support information for chassis:ras2,module:SSHOW_PLOG...
         (output truncated)
```

See Also

supportShow, supportFtp

supportShow

Displays switch information for debugging purposes.

Synopsis

```
supportshow
supportshow slot[/port1-port2] [lines]
```

Description

Use this command to display support information from groups of preselected Fabric OS and Linux commands and other support and debugging information. You can specify a port or a range of ports for which to display this information. These commands are organized by groups, but note that the order of the groups listed below is not the same as executed by the command.

The FCIP commands are supported only on the Brocade 7840, Brocade 7810, Brocade SX6, and Brocade FX8-24 blade. On unsupported platforms, the command displays a "not applicable to this platform" message next to the FCIP command group.

SupportShow executes commands in the following command groups. Use **supportShowCfgenable** or **supportShowCfgDisable** to modify the settings for each group.

os

OS group commands, enabled by default.

exception

Exception group commands, enabled by default.

port

Port group commands, enabled by default.

fabric

Fabric group commands, enabled by default.

services

Service group commands, enabled by default.

security

Security group commands, enabled by default.

network

Network group commands, enabled by default.

portlog

Portlog group commands, enabled by default.

system

System group commands, enabled by default.

extend

Extend group commands, disabled by default.

filter

Filter group commands, disabled by default.

ficon

FICON group commands, disabled by default.

iswitch

FC Router group commands, disabled by default.

asic_db

ASIC DB group commands, disabled by default.

fcip

FCIP group commands, disabled by default.

ag

Access Gateway group commands, disabled by default.

dce_hsl

DCE group commands, enabled by default.

crypto

Encryption group commands, disabled by default.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

This is a diagnostic command and should only be run for diagnostic support.

Output generated by this command may vary by switch configuration and platform. Output may change without notice.

Operands

This command has the following operands:

slot

On bladed systems only, specifies a slot number.

port1-port2

Specifies a port or a range of ports for which to display **supportShow** information. This operand is optional; if omitted, the command displays information for all ports. The following values are supported:

- A single port in *port1-port1* format, for example, "5/8-8".

- A port range where the beginning and end port are separated by a dash, for example, "5/8-13".

lines

Specifies the number of lines for the **portLogDump** output. This parameter is valid only with the *slot/port* parameters.

Examples

To display debugging information for a single port on a Brocade 5300:

```
switch:admin> supportshow 43
VF
=====================
Date:
Sun Dec  6 05:10:13 PST 2009

Time Zone:
America/Los_Angeles

Version:
Kernel:    2.6.14.2
Fabric OS: v6.4.0_main_bld09
Made on:   Tue Dec 1 20:04:36 2009
Flash:     Wed Dec 2 11:54:49 2009
BootProm:  1.0.15

supportshow groups enabled:
 os         enabled
 exception  enabled
 port       enabled
 fabric     enabled
 services   enabled
 security   enabled
 network    enabled
 portlog    enabled
 system     enabled
```

```
extend      disabled
filter      disabled
ficon       disabled
iswitch     enabled
asic_db     enabled
fcip        disabled (not applicable to this platform)
ag          enabled
dce_hsl     enabled

**** Begin start_port_log_cmd group ****
Sun Dec  6 05:10:14 PST 2009
portlogdump:
CURRENT CONTEXT -- 0 , 128
portlogdump      :
time          task     event  port cmd  args
-------------------------------------------------
Sat Dec 5 23:54:37 2009
23:54:37.560 FCPH      read    56 16 02fffc23,00fffc19, \
   bb000000,00000000,04 3401bb
23:54:37.560 FCPH      seq     56 10 20290000,043401bb, \
   00000722,0000001c,00 000000
23:54:37.560 msd0      ctin    56 fa  0001f007,00000000
23:54:37.561 msd0      ctout   56 fa  00018001,0009f300
(output truncated)
```

See Also

supportFtp, supportSave, supportShowCfgDisable, supportShowCfgEnable, supportShowCfgShow, traceDump

supportShowCfgDisable

Disables a group of commands under the **supportShow** command.

Synopsis

```
supportshowcfgdisable os | exception | port | fabric
      | services  | security | network | portlog | system | extend
      | filter | ficon | iswitch | asic_db | ag
      | dce_hsl | crypto | fcip
```

Description

Use this command to disable a group of commands under the **supportShow** command. Use the **supportShowCfgEnable** command to enable groups of commands.

The FCIP commands are supported only on the Brocade FX8-24 platform and cannot be configured to collect data on unsupported platforms.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

os

Disables the OS group commands.

exception

Disables the exception group commands.

port

Disables the port group commands.

fabric

Disables the fabric group commands.

services

Disables the service group commands.

security

Disables the security group commands.

network

> Disables the network group commands.

portlog

> Disables the portlog group commands.

system

> Disables the system group commands.

extend

> Disables the extend group commands.

filter

> Disables the filter group commands.

ficon

> Disables the FICON group commands.

iswitch

> Disables the FC Router group commands.

asic_db

> Disables the ASIC DB group commands.

ag

> Disables the Access Gateway group commands.

dce_hsl

> Disables the DCE group commands.

crypto

> Disables the encryption group commands

fcip

> Disables the FCIP group commands. Supported only on the Brocade FX8-24.

Examples

To disable the OS group of commands under the **supportShow** command:

```
switch:admin> supportshowcfgdisable os
```

```
Config update Succeeded
```

See Also

supportShow, supportShowCfgEnable, supportShowCfgShow

supportShowCfgEnable

Enables a group of commands to be displayed under the **supportShow** command.

Synopsis

```
supportshowcfgenable os | exception | port | fabric
     | services | security | network | portlog | system
     | extend | filter | ficon | iswitch | asic_db
     | ag | dce_hsl |crypto | fcip
```

Description

Use this command to enable a group of commands to be displayed under the **supportShow** command. Use the **supportShowCfgDisable** command to disable groups of commands.

The FCIP commands are supported only on the Brocade FX8-24 platform and cannot be configured to collect data on unsupported platforms.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

os

Enables the OS group commands.

exception

Enables the exception group commands.

port

Enables the port group commands.

fabric

Enables the fabric group commands.

services

Enables the service group commands.

security

Enables the security group commands.

network

Enables the network group commands.

portlog

Enables the portlog group commands.

system

Enables the system group commands.

extend

Enables the extend group commands.

filter

Enables the filter group commands.

ficon

Enables the FICON group commands.

iswitch

Enables the FC Router group commands.

asic_db

Enables the ASIC DB group commands.

ag

Enables the Access Gateway group commands.

dce_hsl

Disables the DCE group commands

crypto

Enables the encryption group commands.

fcip

Enables the FCIP group commands. Supported only on the Brocade FX8-24 platform.

Examples

To enable a group of commands under the **supportShow** command:

```
switch:admin> supportshowcfgenable os
```

```
Config update Succeeded
```

See Also

supportShow, supportShowCfgDisable, supportShowCfgShow

supportShowCfgShow

Displays the groups of commands enabled for display by the **supportShow** command.

Synopsis

    supportshowcfgshow

Description

Use this command to display the groups of commands enabled for display by the **supportShow** command. Use the **supportShowCfgEnable** and the **supportShowCfgDisable** commands to modify which groups are displayed.

The FCIP commands are supported only on the Brocade 7840, Brocade 7810, Brocade SX6, and Brocade FX8-24 platforms and cannot be configured to collect or display data on unsupported platforms.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To display command groups configured for data collection on the Brocade 6510:

```
switch:admin> supportshowcfgshow
 os         enabled
 exception  enabled
 port       enabled
 fabric     enabled
 services   enabled
 security   enabled
 network    enabled
 portlog    enabled
 system     enabled
 extend     disabled
 filter     disabled
 ficon      disabled
 iswitch    disabled
 asic_db    enabled
 fcip       disabled (not applicable to this platform)
  ag        disabled
```

To display command groups configured for data collection on the Brocade 7810

```
switch:admin> supportshowcfgshow
```

```
os         enabled
exception  enabled
port       enabled
fabric     enabled
fcoe       enabled
ucid       enabled
services   enabled
security   enabled
network    enabled
portlog    enabled
system     enabled
extend     disabled
filter     disabled
ficon      disabled
iswitch    enabled
asic_db    enabled
fcip       enabled
amp        disabled (not applicable to this platform)
ag         enabled
dce_hsl    enabled
```

See Also

supportShow, supportShowCfgDisable, supportShowCfgEnable

switchBeacon

Sets switch beaconing mode on or off.

Synopsis

switchbeacon [*mode*]

Description

Use this command to enable or disable switch beaconing mode. Switch beaconing can be used to locate a failing unit.

When beaconing mode is turned on, the port LEDs flash amber, left to right and right to left, from port 0 to the highest port number and back to port 0. The beaconing mode continues until you turn it off.

The beaconing LED pattern continues until you turn it off. Beaconing mode takes over the port LEDs. Other commands are still executable and functional. The normal flashing LED pattern (associated with an active, faulty or disabled port for example) is suppressed and only the beaconing pattern is shown. However, if diagnostic frame-based tests (such as **portLoopbackTest**) are executed, two patterns are interleaved. The diagnostic test flickers the LEDs green and the beaconing mode runs the LEDs amber at the same time.

The **switchBeacon** command is one of the commands that controls beaconing. Each command has a clearly defined scope of action:

•   The **portBeacon** command enables or disables beaconing on a specified port.

•   The **switchBeacon** command enables or disables beaconing on all ports in the current logical switch.

•   The **chassisBeacon** command enables or disables beaconing on all ports in the chassis.

•   The **portPeerBeacon** command enables or disables beaconing to identify the interconnections between ports.

The actions of the beaconing commands are independent and mutually exclusive. For example, if you enabled beaconing on the logical switch (1) and you want to enable beaconing on the entire chassis, you must first disable switch beaconing with the **switchBeacon** command before you can use the **chassisBeacon** command to enable beaconing on the entire chassis. Likewise, existing **portBeacon** settings remain unaffected if you enable or disable beaconing on the switch or on the chassis. Failure to disable existing beaconing commands before using a different type of beaconing may cause the commands to interfere with each other in unexpected ways.

To determine beaconing status, use the **switchBeacon** or **chassisBeacon** command without operands. A value of 0 indicates that the command is disabled, a value of 1 indicates that the command is enabled. Issue the **portBeacon --show**command to display beaconing for a specific port. The **switchShow** command displays the status of the **switchBeacon** command only.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operand:

mode

Specify 1 to enable beaconing mode or 0 to disable beaconing mode. This operand is optional. If no operand is specified, the current value is displayed.

Examples

To turn beaconing mode on and to verify the configuration:

```
switch:admin> switchbeacon 1
switch:admin> switchbeacon
value = 1
```

To turn beaconing mode off to verify the configuration::

```
switch:admin> switchbeacon 0
switch:admin> switchbeacon
value = 0
```

See Also

chassisBeacon, portBeacon, portPeerBeacon, switchShow

switchCfgPersistentDisable

Disables a switch persistently.

Synopsis

```
switchcfgpersistentdisable
switchcfgpersistentdisable --setdisablestate
switchcfgpersistentdisable --disable
switchcfgpersistentdisable --help
```

Description

Use this command to persistently disable the switch immediately or after reboot. All Fibre Channel ports are taken offline. If the switch was part of a fabric, the remaining switches reconfigure. The switch remains disabled even after a reboot.

As each port is disabled, the front panel LEDs change to a slow-flashing amber.

You can temporarily enable a persistently disabled switch with the **switchEnable** command. A temporarily enabled switch remains disabled after a reboot.

Notes

Performance Monitoring cannot be added to any port on a persistently disabled switch.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--setdisablestate

Sets the switch in disable state. The switch is disabled persistently after the next reboot.

--disable

Disables the switch persistently.

--help

Displays command usage.

Examples

To disable a switch persistently:

```
switch:admin> switchcfgpersistentdisable
Switch's persistent state set to 'disabled'
```

To set the state of a switch to disable so that the switch is disabled during next reboot:

```
switch:admin> switchcfgpersistentdisable -setdisablestate
Switch's persistent state set to 'disabled'
Switch persistent disable set
```

See Also

switchDisable, switchEnable, switchCfgPersistentEnable, switchShow

switchCfgPersistentEnable

Enables a switch persistently.

Synopsis

switchcfgpersistentenable

Description

Use this command to persistently enable a persistently disabled switch. All Fibre Channel ports that passed the power-on self-test (POST) are enabled and come online if connected to a device, or remain offline if disconnected. The switch may need to be enabled if it was previously disabled to make configuration changes or to run diagnostics.

If the switch is connected to a fabric, it rejoins the fabric. If this switch remains the principal switch, it assigns itself a domain ID. If another switch assumes the principal role, then this switch becomes a subordinate switch, and accepts a domain ID from the principal. Refer to the FC-SW specification for a complete description of this process.

As each port is enabled, the front panel LEDs change from slow-flashing amber to green for online ports, or to nonflashing amber for ports that do not initialize. Disconnected ports remain unlit.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To persistently enable a previously persistently disabled switch:

```
switch:admin> switchcfgpersistentenable
Switch's persistent state set to 'enabled'
```

See Also

switchDisable, switchEnable, switchCfgPersistentDisable, switchShow

switchCfgSpeed

Configures the speed for all ports on a switch.

Synopsis

`switchcfgspeed` *speed*

Description

Use this command to configure the port speed on a switch. This command sets the speed for all user ports. If any port on the switch is not capable of the specified speed setting, an error message is displayed for that port. The configuration is saved in nonvolatile memory and persists across switch reboots or power cycles.

On Brocade Gen 5 and Brocade Gen 6 platforms, the **switchCfgSpeed** command checks if the requested speed is allowed, based on the combination configured for the octet that contains the first eight physical ports of the switch or blade. If the requested speed is not supported by the current octet speed combination, this command logs a RASlog message and moves on to the next port. Use the **portCfgOctetSpeedCombo** command to set the suggested combination before re-executing the **switchCfgSpeed** command.

Use the **portShow** command to display actual port speed settings. Use the **portCfgShow** command to display user-configured speed settings.

Notes

This configuration cannot be set on VE_Ports or VEX_Ports.

Speed configuration is not applicable to FCoE ports.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operand:

speed

Specifies the speed for all ports on a switch. This operand is required. Valid values are as follows:

0

Autosensing mode. The port automatically configures for the highest speed.

1

The port is set at a fixed speed of 1Gb/s (not supported on Brocade Gen 6 platforms).

2

        The port is set at a fixed speed of 2Gb/s (not supported on Brocade Gen 6 platforms).

4

        The port is set at a fixed speed of 4Gb/s.

8

        The port is set at a fixed speed of 8Gb/s.

16

        The port is set at a fixed speed of 16Gb/s (not supported on 8G platforms).

32

        The port is set at a fixed speed of 32Gb/s (not supported on 8G platforms).

Examples

To set the autosensing mode for all ports on a switch:

```
switch:admin> switchcfgspeed 0
Committing configuration...done.
```

See Also

portCfgOctetSpeedCombo, portCfgSpeed, portShow

switchCfgTrunk

Enables or disables trunking on all the ports of a switch.

Synopsis

switchcfgtrunk *mode*

Description

Use this command to enable or disable trunking on all the ports of a switch. Use
portCfgTrunkPort to enable or disable trunking on a single port.

When the command is executed to update the trunking configuration, the ports to which the
configuration applies are disabled and subsequently re-enabled with the new trunking
configuration. Traffic through these ports may be temporarily disrupted. The command issues
a message that lists the VE/VEX_Ports to which the configuration does not apply.

Although trunking configuration changes are applied at the switch level, they are tracked as a
per-port attribute and no switch-wide attribute is maintained to keep track of these changes.
Whenever a new port comes online as part of the switch, you must reapply the trunking
configuration. For example, If you remove a blade from a chassis while trunking is enabled for
the ports on the blade, and you disable trunking on the switch after you removed the blade, the
blade ports will come online with trunking enabled after you reinsert the blade. To avoid
potentially disruptive behavior, reapply the trunking configuration.

Trunking on Inter-Chassis Link (ICL) ports is always enabled and cannot be turned off by this
command.

Disabling trunking fails if a Trunk Area (TA) is enabled on the port.

Notes

Enabling trunking requires an ISL Trunking license. You may disable trunking without a license.

The execution of this command is subject to Virtual Fabric restrictions that may be in place.
Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

The following operand is required:

mode

Specify 1 to enable trunking on all ports. Specify 0 to disable trunking on all ports.

Examples

To enable trunking on all ports of a switch:

```
switch:admin> switchcfgtrunk 1
Configuration applied to all ports except the following \
VE/VEX_Ports (ports 176 - 191).
```

To disable trunking on all ports of a switch:

```
switch:admin> switchcfgtrunk 0
Committing configuration...done.
```

See Also

portCfgShow, portCfgTrunkPort, portShow, switchShow

switchDisable

Disables all user ports on a switch.

Synopsis

switchdisable

Description

Use this command to disable all user ports on a switch. All Fibre Channel ports are taken offline. If the switch was part of a fabric, the remaining switches reconfigure. As each port is disabled, the front panel LED changes to a slow-flashing amber.

The switch must be disabled before making configuration changes or before running offline diagnostic tests. Commands that require the switch to be disabled generate an error message if invoked while the switch is enabled. It is not necessary to disable the switch before rebooting or powering off.

When this command is executed on a logical switch, only the ports allocated to the logical are disabled. To disable the entire chassis, use the **chassisDisable** command.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To disable the switch:

switch:admin> **switchdisable**

See Also

bladeEnable, bladeDisable, chassisEnable, chassisDisable, switchCfgPersistentDisable, switchCfgPersistentEnable, switchEnable, switchShow

switchEnable

Enables all user ports on a switch.

Synopsis

```
switchenable
```

Description

Use this command to enable all user ports on a switch. All Fibre Channel ports that passed the power-on self test (POST) are enabled. They can come online if connected to a device, or remain offline if disconnected. Use **switchEnable** to re-enable the switch after making configuration changes or running offline diagnostics.

If the switch is connected to a fabric, it rejoins the fabric. If the switch remains the principal switch, it assigns itself a domain ID. If another switch assumes the principal role, then the re-enabled switch becomes a subordinate switch and accepts a domain ID from the principal.

As each port is enabled, the front panel LED changes to green for online ports, or to amber for uninitialized ports. Disconnected ports remain unlit.

When this command is executed on a logical switch, only the ports allocated to the logical switch are enabled. To enable the entire chassis, use the **chassisEnable** command.

Notes

This command also enables the ports of a disabled blade on the switch.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To enable a switch:

switch:admin> **switchenable**

See Also

bladeEnable, bladeDisable, chassisDisable, chassisEnable, switchCfgPersistentDisable, switchCfgPersistentEnable, switchDisable, switchShow

switchName

Displays or sets the switch name.

Synopsis

switchname [*name*]

Description

Use this command to display or set the switch name. Once you set the switchname, you must re-login for the change to be in effect. All switches have a symbolic name that is primarily used for switch management. This name is shown in the Fabric OS CLI prompt, under each switch icon in Web Tools, in all the switch event RASLog messages, and in the output of various Fabric OS Commands, such as **fabricShow**.

Enter this command without an operand to display the current switch name. Use this command with the *name* operand to assign a new switch name. It is recommended to have unique switch name in the fabric.

Changing the switch name causes a domain address format registered state change notification (RSCN) to be issued. Refer to the FC-FLA specification for a description of RSCNs).

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operand:

name

Specifies the name for the switch. A switch name can be up to 30 characters in length. It can begin with either a letter or number and can consist of letters, numbers, hyphens, periods, and underscore characters. Spaces are not allowed. A switch name that begins with a numeric character must at least have either an alphabetic (A-Z, a-z) character or an underscore or a dash or a period. A switch name with only numeric character is not valid. For example, the switch name 12345678 is invalid. The case used in the name is recorded and will be displayed, but does not make the name unique. It is recommended to have unique switch name in the fabric.

When FICON Management Server (FMS) mode is enabled, the switch name can include up to 24 characters only.

Examples

To change the switch name to a name starting with a character (note the change in the prompt text):

```
switch:admin> switchname Lab1_demo_1298765_AY4TYI60
Lab1_demo_1298765_AY4TYI60:admin>
```

To change the switch name to a name starting with a character and containing dashes (-):

```
switch:admin> switchname Lab1-demo-1298765-AY4TYI60
Lab1-demo-1298765-AY4TYI60:admin>
```

To change the switch name to a name starting with a numeric:

```
switch:admin> switchname 174-switch
174.switch:admin> switchname
174.switch
```

To change the switch name to a name with a period:

```
switch:admin> switchname switch.73
switch.73:admin> switchname
switch.73
switch.73:admin>
```

See Also

chassisShow, switchShow

switchShow

Displays switch and port status.

Synopsis

```
switchshow
switchshow [-slot slot] [-portname | -qsfp]
switchshow [-portcount]
```

Description

Use this command to display switch, blade, and port status information. Output may vary depending on the switch model.

When used without operands, **switchShow** displays the following information:

switchName

Switch name.

switchType

Switch model and revision numbers.

switchState

Switch state: Online, Offline, Testing, or Faulty. When you issue the **switchcfgPersistent-Disable** command followed by the **switchEnable** command, the switch state changes to, "Online (Temporary)". The switch remains in this state until you issue the **switchcfgPer-sistentEnable** command.

switchMode

Switch operation mode: Access Gateway (if AG is enabled).

switchRole

Switch role: Principal, Subordinate, or Disabled.

switchDomain

Switch domain ID: 1 to 239.

switchId

Switch embedded port D_ID.

switchWwn

Switch world wide name (WWN).

switchBeacon

Switch beaconing state: On or Off.

zoning

The name of the active zone is displayed in parentheses. Active only when Access Gateway mode is disabled.

FC Router

FC Router state: On or Off.

FC Router BB Fabric ID

The backbone fabric ID for FC routing.

Fabric Name

The name assigned to the fabric. The fabric name is set with the **fabricName** command.

HIF Mode

Indicates HIF mode of the switch. Values are ON or OFF. The HIF mode can be set using the **configure** command.

Allow XISL Use

Allows the switch to use interswitch links (XILS) in the base fabric to carry traffic to this logical switch. Values are ON or OFF.

LS Attributes

On a switch in Virtual Fabric mode, this field displays logical switch attributes, including the fabric ID associated with the logical switch, the switch role (default switch, base switch, or FICON mode logical switch), and the fabric Address Mode (0, 2 or 3). If Virtual Fabrics are disabled, only the Address Mode is displayed. The fabric Address Mode value is set by the configure command (Enable a 256 Area Limit).

The switch summary is followed by one-line description for non-EX_Ports and one or two lines for EX_Ports:

Index

Port index is a number between 0 and the maximum number of supported ports on the platform. The port index identifies the port number relative to the switch.

Slot

Slot number; 1-12.

Port

Port number; 0-15, 0-31, or 0-63.

PortWWN

Port world wide name (WWN).

Address

The 24-bit Address Identifier.

Media

Media types include the following:

--

No module present. Applicable to all port types.

cu

Displays when the copper (default) GbE port ge0 or ge1 is active. If the optical GbE port is active and an SFP is installed (copper or optical), "id" is displayed. If nothing is installed on the optical port, the Media field shows "**--**". The "cu" field also displays for inter-chassis links (ICLs).

id

Serial ID. Indicates that an SFP is installed. Use **sfpShow** to get more information about the SFP, including the serial number.

Speed

The speed of the port. Valid port speeds include the following:

1G

1Gb/s fixed transfer speed (not supported on 16Gb/s-capable ports)

N1

1Gb/s negotiated transfer speed (not supported on 16Gb/s-capable ports)

2G

2Gb/s fixed transfer speed (only supported with use of 8Gb/s SFPs)

N2

2Gb/s negotiated transfer speed (only supported with use of 8Gb/s SFPs)

4G

4Gb/s fixed transfer speed

N4

4Gb/s negotiated transfer speed

8G

8Gb/s fixed transfer speed

N8

8Gb/s negotiated transfer speed

10G

10Gb/s fixed transfer speed

N10

10Gb/s negotiated transfer speed

16G

16Gb/s fixed transfer speed

N16

16Gb/s negotiated transfer speed

32G

32Gb/s fixed transfer speed

N32

32Gb/s negotiated transfer speed

AN

Autonegotiating

UN

Unknown

State

Port state information. Valid states include the following:

No_Card

No interface card present.

No_Module

No module (GBIC or other) present.

Mod_Val

Module validation in process.

Mod_Inv

Module speed mismatch or incompatible SFP.

No_Light

The module is not receiving light. This state is not applicable to 16Gb/s-capable inter-chassis link (ICL) ports.

No_SigDet

No signal is detected on the port. For 16Gb/s-capable interchassis link (ICL) ports, this state replaces the No_Light indicator. It indicates that a quad small form-factor pluggable (QSFP) has been installed but is not connected with a cable.

No_Sync

The module is receiving light but is out of sync.

In_Sync

The module is receiving light and in sync.

Laser_Flt

The module is signaling a laser fault.

Port_Flt

The port is marked faulty.

Hard_Flt

The port is hard faulted.

Lock_Ref

The port is locking to the reference signal.

Testing

The port is running diagnostics.

Offline

A port connection is not established (for virtual ports only).

Online

The port is up and running.

Transient

The port is disabled and re-enabled by MAPS to recover from the bottleneck condition caused by the target device.

Proto

Protocol support by GbE port. Valid protocols include the following:

ISCSI

The port supports ISCSI (deprecated).

FCIP

The port supports FCIP.

FCoE

The port supports Fibre Channel over Ethernet.

LAN

The port supports LAN.

comment

Optionally displays one of the following:

Copper or Optical

Displays which GbE port is currently active in the Brocade 7810 Switch. **Copper** indicates that the RJ-45 GbE port is currently active. **Optical** (default) indicates that the currently active GbE port accepts both copper and optical connections (SFPs).

Disabled

The port is disabled. Port disable reasons may be stated in parenthesis:

Disabled (FMS Mode)

The port is disabled and in Ficon Server Management mode.

Disabled (No area available for PID assignment)

The port is disabled because a PID could not be assigned for the stated reason.

Disabled (persistent) *disable reason*

This port has been disabled with the **portCfgPersistentDisable** command.

Disabled (Persistently disabled port) *disable reason*

This port has been disabled for unspecified reasons.

Disabled (Fabric Vision License required)

This D_Port has been disabled because the Fabric Vision license is not installed on the switch.

Disabled (Insistent Domain ID)

This port has been disabled because the switch did not get the requested domain ID.

Disabled (EX_Port IR POD License Limit Exceeded)

The EX_Port has been disabled because the Integrated Routing license limit for the number of EX_Ports allowed in a switch has exceeded.

Disabled (License not Installed for Integrated Routing)

The EX_port has been disabled because License for Integrated Routing not installed in the switch.

Disabled (Incompatible AMP Version)

This port has been disabled because of Analytics Monitoring Platform (AMP) version conflict.

Disabled (Port not bounded to Address in FICON Switch)

This port has been disabled because it is not bound to an area after migrating into a FICON switch. Use the **portaddress --bind** command to bind the port.

Disabled (Decommissioned)

The E_Port has been disabled by decommissioning operation.

Disabled (Port Throttled)

The port has been disabled due to high CPU utilization and will be up later when the CPU load is lower or when the number of ports attempting ASN is less than threshold due to CPU load, whichever happens earlier.

Bypassed

The port is bypassed (loop only).

Loopback

The port is in loopback mode.

D_Port

Diagnostic port; D_Port feature can be configured on both E_Port and F_Port. D_Port on E_Port displays the world wide node name (WWNN) of the remote switch and D_Port on F_Port displays the world wide port name (WWPN) of remote port.

E_Port

Fabric port; displays the world wide name (WWN) and name of the attached switch. If the port is configured as an EX_Port, the WWN of the attached switch is the same as the router.

F_Port

Point-to-point port; displays the WWN of the attached N_Port. If that specific F_Port receives 1 FDISC frame, **switchShow** displays the total number of NPIV Public ports as 1, for example: F_Port 1 NPort + 1 NPIV devices. If the base device logs out with NPIV devices logged in, the command displays the number of NPIV devices, for example, F_Port 1 NPort + 2 NPIV.

G_Port

Point-to-point port, but not yet E_Port or F_Port.

L_Port

Loop port; displays the number of NL_Ports.

EX_Port

Router port; displays the WWN of the attached edge switch.

VF_Port

FCoE Virtual F_Port. Displays the WWN of the attached ENode. For example, if there are NPIV devices logged in (2 FDISCs were received), then **switchShow** displays the total number of NPIV Public ports as 2 (VF_Port 1 NPort + 2 NPIV public).

VF_Port Disabled

FCoE Virtual F_Port is disabled.

D_Port Dynamic

The port is in Dynamic D_Port mode. Use the **configure** command to set the Dynamic D_Port mode.

D_Port On-demand

The port is in On-demand D_Port mode. Use the **configure** command to set the On-demand D_Port mode.

D_Port protocol violation

The port is stuck in G_Port state. The Static D_Port configuration is removed but the remote port is still in Static D-Port mode, which results in the switch port stuck in G_Port mode.

D_Port F_Port *WWN* Dynamic

The port is connected to a device port in the D_Port mode.

(Impaired)

The port is not used for routing, if the port is marked as Impaired.

SIM Port

The port is a simulated (SIM) port.

Mirror Port

The port is a mirror port.

(Trunk master)

The port is the master port in a group of trunking ports.

(Trunk port, master is port #x)

The port is configured as a trunking port; the master port is port #*x*.

(upstream)

The E_Port is an upstream path toward the principal switch of the fabric.

(downstream)

The E_Port is a downstream path away from the principal switch of the fabric.

FICON Persistent DID

This port has been disabled, because the switch could not obtain its configuration domain ID during the fabric reconfiguration when **fmsmode** was enabled. See the **ficonCupSet** help page for more information.

Fabric ID conflict

Two different fabrics have been assigned the same fabric ID. Applicable only to EX_Ports and Logical Fabric environments.

Fabric ID oversubscribed

One fabric has been assigned two different fabric IDs (EX_Ports only).

AoQ

Application-oriented QoS; indicates that an F_Port or N_Port has negotiated a link that is capable of quality of service (QoS). Both sides of the link have QoS capability and agreed on the protocol. The link could be between an HBA and an Access Gateway, between an Access Gateway and an edge switch, or between an HBA and an edge switch.

LB mode

If the Access Gateway cannot negotiate QoS capabilities with the edge switch, an HBA connected to the Access Gateway will not be able to negotiate a QoS link with the Access Gateway.

(logical)

Indicates a logical port. The **switchShow** output shows all logical ports currently present in the logical switch. The command displays -1 for the slot for logical ports and the user port number for slot port. The logical port numbers are not persistent and may change when the logical interswitch links (LISLs) are deleted and recreated. A logical port is shown to be in one of the following states: E_Port (if the port is online), offline, or disabled. When the port is disabled, a reason is provided.

segmented

Indicates a segmented or disabled port along with one of the following segmentation reasons:

(Encrypt incompatible)

Port segmentation or port disable due to mismatched configurations.

(Compress incompatible)

Port segmentation or port disable due to mismatched configurations.

(Encrypt limitation)

Port segmentation or port disable due to reaching encryption limitations.

(Compress limitation)

Port segmentation or port disable due to reaching compression limitations.

(Authentication failure)

Port segmentation or port disable due to authentication failure.

(Defzone conflict)

Port segmentation due to defzone states.

(Type mismatch)

D_Port configuration mismatch between local and remote switch.

(D-port mode mismatch, Not D-port)

The local port is configured as D_Port and remote port is not a D_Port. This segmentation reason is displayed for the local port.

(D-port mode mismatch, Static D-port)

The local port is configured as D_Port and remote port is not a D_Port. This segmentation reason is displayed for the remote port.

(ESC mismatch, AMP Version Conflict)

Port segmentation due to Analytics Monitoring Platform (AMP) version mismatch.

(Incompatible AMP Version)

Port segmentation due to incompatible Analytics Monitoring Platform (AMP) version.

When used with the **-slot** option, the command displays the following blade-specific information:

slot

Slot number.

Blade Type

Type of blade, for example, Core blade or AP blade. Refer to the **slotShow** command for a listing of supported blade types.

ID

A numeric blade ID that specifies the blade type. Refer to the **slotShow** command for a listing of supported blade IDs.

Status

Enabled or disabled.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

For all FCoE ports, the speed is Unknown. The default configuration of an FCoE port is an F_Port configuration. After a successful reboot **switchShow** displays all FCoE ports as online.

If a port is configured as a long distance port, the long distance level is displayed in the format of L*x*, where *x* represents the long distance level number. See **portCfgLongDistance** for the level description.

When a port is configured as an N_Port and is online, **switchShow** displays its type as an N_Port. Also, **switchShow** displays the WWN of the border switch attached to this N_Port as a 24-bit Port Identifier assigned to this port by the enterprise fabric.

In an AD context, if one of the L_Ports or NPIV Ports is a part of the current AD, the complete device information attached to the port is displayed.

Operands

This command has the following operands:

-slot *slot*

Displays blade information. You can specify this operand with **-portname** or **-qsfp**.

-portname

Displays the name for each port on the switch. The port name is set by the **portName** command.

-qsfp

Displays the output of the **switchShow** command with a QSFP column added. If a QSFP is installed on the port, the QSFP number is displayed for the port. This number corresponds to the physical QSFP number that can be found on the front of each Core Blade. A double dash (--) indicates that QSFP is not supported on that blade. This option is applicable on all switches that has QSFP installed.

-portcount

Displays the number of ports on the switch. This operand is exclusive.

Examples

To display the port count:

```
switch:admin> switchshow -portcount
FC ports =  198, GE ports =  12
```

To display a QoS-capable Core Access Gateway with online AoQ F_Ports and N_Ports:

```
switch:admin>   switchshow
switchName:     Spirit_125
switchType:     66.1
```

```
switchState:      Online
switchMode:       Access Gateway Mode
switchWwn:        10:00:00:05:1e:85:95:d0
switchBeacon:     OFF
FC Router:        OFF
FC Router BB Fabric ID: 1


Area Port Media Speed State     Proto
====================================
  0   0   --   N8   No_Module   FC
  1   1   --   N8   No_Module   FC
  2   2   --   N8   No_Module   FC
  3   3   --   N8   No_Module   FC
  4   4   --   N8   No_Module   FC
  5   5   --   N8   No_Module   FC
  6   6   --   N8   No_Module   FC
  7   7   --   N8   No_Module   FC
  8   8   --   N8   No_Module   FC
  9   9   id   N8   Online      FC   F-Port \
    10:00:00:05:1e:53:2c:54 0x690105 (AoQ)
 10  10   id   N8   Online      FC   F-Port  \
   10:00:00:05:1e:56:5f:a9 0x690107 (AoQ)
 11  11   id   N4   Online      FC   F-Port \
    10:00:00:05:1e:56:5f:a8 0x690106 (AoQ)
 12  12   --   N8   No_Module   FC
 13  13   --   N8   No_Module   FC
 14  14   --   N8   No_Module   FC
 15  15   --   N8   No_Module   FC
 16  16   id   N8   No_Light    FC
 17  17   id   N8   Online      FC   F-Port \
   1 N Port + 3 NPIV public (AoQ)
 18  18   --   N8   No_Module   FC
 19  19   --   N8   No_Module   FC
 20  20   --   N8   No_Module   FC
 21  21   --   N8   No_Module   FC
 22  22   --   N8   No_Module   FC
 23  23   --   N8   No_Module   FC
 24  24   --   N8   No_Module   FC
 25  25   --   N8   No_Module   FC
 26  26   --   N8   No_Module   FC
 27  27   --   N8   No_Module   FC
 28  28   --   N8   No_Module   FC
 29  29   --   N8   No_Module   FC
 30  30   --   N8   No_Module   FC
 31  31   --   N8   No_Module   FC
 32  32   id   N8   Online      FC   N-Port \
    10:00:00:05:1e:43:e8:02 0x690100 (Trunk master)  (AoQ)
 33  33   --   N8   No_Module   FC
 34  34   id   N8   Online      FC   N-Port \
    10:00:00:05:1e:43:e8:02 0x690100 (Trunk port, \
   master is Port 32 )(AoQ)
 35  35   --   N8   No_Module   FC
 36  36   --   N8   No_Module   FC
```

```
37  37   --    N8   No_Module   FC
38  38   --    N8   No_Module   FC
39  39   --    N8   No_Module   FC
```

To display switch information on a Virtual Fabrics-enabled switch with an assigned fabric name:

```
switch:admin> switchshow
switchName:     brocade218
switchType:     62.1
switchState:    Online
switchMode:     Native
switchRole:     Principal
switchDomain:   1
switchId:       fffc01
switchWwn:      10:00:00:60:69:80:04:92
zoning:         ON (testcfg1)
switchBeacon:   OFF
FC Router:      OFF
Fabric Name:    Fabric_A12
HIF Mode:ON
Allow XISL use: ON
LS Attributes:  [FID: 10, Base Switch: No,\
    Default Switch: No, Address Mode 0]

Index Slot Port Address Media Speed State      Proto
======================================================
377   12   41   32f180   --    N8   No_Module
378   12   42   32f280   --    N8   No_Module
379   12   43   32f380   --    N8   No_Module
380   12   44   32f480   --    N8   No_Module
381   12   45   32f580   --    N8   No_Module
382   12   46   32f680   --    N8   No_Module
383   12   47   32f780   --    N8   No_Module
769   -1   769   --       --    --   Online  E-Port \
    10:00:00:05:1e:40:f0:79 "Switch 1" (logical)
770   -1   770   --       --    --   Offline (logical)
785   -1   785   --       --    --   Offline \
    Disabled (logical, reason why port was disabled)
(output truncated)
```

To display blade information and port names:

```
switch:admin> switchshow -slot 5 -portname

FC Router:      OFF
Allow XISL Use: OFF
LS Attributes:[FID: 128, Base Switch: No, Default Switch:\
    Yes, Address Mode 0]

Slot   Blade Type      ID    Status
-------------------------------------------------
5      COREBLADE      52    ENABLED

Index  Slot Port       PortWWN          Name
============================================================
```

```
384    5    0   20:04:00:05:33:0e:df:00  MyName_portname0
385    5    1   20:04:00:05:33:0e:df:01  ------
386    5    2   20:04:00:05:33:0e:df:02  ------
```

To display QSFP information on a Brocade DCX 8510-4:

•   Ports 3/60-63 indicate no QSFP is present.

•   Slot 5 and 8 have QSFPs installed and the number is the group ID.

•   Port 5/6 is an example of non-contiguous ports crossing QSFP group boundaries.

```
switch:admin> switchshow -qsfp
switchType:    120.1
switchState:   Online
switchMode:    Native
switchRole:    Subordinate
switchDomain:  60
switchId:      fffc3c
switchWwn:     10:00:00:05:1e:40:68:78
zoning:        ON (WB_DEFAULT_CFG_LSAN)
switchBeacon:  OFF
FC Router:     OFF
Allow XISL Use: OFF
LS Attributes:  [FID: 128, Base Switch: No,
    Default Switch: Yes, Address Mode 0]


Index Slot Port QSFP  Address Media  Speed  State      Proto
============================================================

812    3   60   --    3c2cc0  --     N8    No_Module   FC
813    3   61   --    3c2dc0  --     N8    No_Module   FC
814    3   62   --    3c2ec0  --     N8    No_Module   FC
815    3   63   --    3c2fc0  --     N8    No_Module   FC
384    5    0   15    ------  id     16G   No_SigDet   FC
385    5    1   15    ------  id     16G   No_SigDet   FC
386    5    2   7     ------  id     16G   No_SigDet   FC
387    5    3   7     ------  id     16G   No_SigDet   FC
388    5    4   7     ------  id     16G   No_SigDet   FC
389    5    5   7     ------  id     16G   No_SigDet   FC
390    5    6   15    ------  id     16G   No_SigDet   FC
391    5    7   15    ------  id     16G   No_SigDet   FC
392    5    8   14    ------  --     16G   No_Module   FC
393    5    9   14    ------  --     16G   No_Module   FC
394    5   10   6     ------  --     16G   No_Module   FC
395    5   11   6     ------  --     16G   No_Module   FC
396    5   12   6     ------  --     16G   No_Module   FC
397    5   13   6     ------  --     16G   No_Module   FC
398    5   14   14    ------  --     16G   No_Module   FC
399    5   15   14    ------  --     16G   No_Module   FC
400    5   16   13    ------  --     16G   No_Module   FC
401    5   17   13    ------  --     16G   No_Module   FC
402    5   18   5     ------  --     16G   No_Module   FC
403    5   19   5     ------  --     16G   No_Module   FC
404    5   20   5     ------  --     16G   No_Module   FC
```

```
405     5    21     5    ------    --    16G    No_Module    FC
406     5    22    13    ------    --    16G    No_Module    FC
407     5    23    13    ------    --    16G    No_Module    FC
408     5    24    12    ------    id    16G    No_SigDet    FC
409     5    25    12    ------    id    16G    No_SigDet    FC
410     5    26     4    ------    id    16G    Online       FC  \
     E-Port  10:00:00:05:1e:39:f0:ca "ras040" (Trunk master)
411     5    27     4    ------    id    16G    Online       FC  \
     E-Port  10:00:00:05:1e:39:f0:ca "ras040" (Trunk master)
412     5    28     4    ------    id    16G    Online       FC  \
     E-Port  10:00:00:05:1e:39:f0:ca "ras040" (Trunk master)
413     5    29     4    ------    id    16G    Online       FC  \
     E-Port  10:00:00:05:1e:39:f0:ca "ras040" (Trunk master)
414     5    30    12    ------    id    16G    No_SigDet    FC
415     5    31    12    ------    id    16G    No_SigDet    FC
1152    5    32    11    ------    --    16G    No_Module    FC
1153    5    33    11    ------    --    16G    No_Module    FC
1154    5    34     3    ------    --    16G    No_Module    FC
1155    5    35     3    ------    --    16G    No_Module    FC
1156    5    36     3    ------    --    16G    No_Module    FC
1157    5    37     3    ------    --    16G    No_Module    FC
1158    5    38    11    ------    --    16G    No_Module    FC
1159    5    39    11    ------    --    16G    No_Module    FC
1160    5    40    10    ------    --    16G    No_Module    FC
1161    5    41    10    ------    --    16G    No_Module    FC
1162    5    42     2    ------    --    16G    No_Module    FC
1163    5    43     2    ------    --    16G    No_Module    FC
1164    5    44     2    ------    --    16G    No_Module    FC
1165    5    45     2    ------    --    16G    No_Module    FC
1166    5    46    10    ------    --    16G    No_Module    FC
1167    5    47    10    ------    --    16G    No_Module    FC
1168    5    48     9    ------    --    16G    No_Module    FC
1169    5    49     9    ------    --    16G    No_Module    FC
1170    5    50     1    ------    --    16G    No_Module    FC
1171    5    51     1    ------    --    16G    No_Module    FC
1172    5    52     1    ------    --    16G    No_Module    FC
1173    5    53     1    ------    --    16G    No_Module    FC
1174    5    54     9    ------    --    16G    No_Module    FC
1175    5    55     9    ------    --    16G    No_Module    FC
1177    5    57     8    ------    id    16G    No_SigDet    FC
1178    5    58     0    ------    --    16G    No_Module    FC
1179    5    59     0    ------    --    16G    No_Module    FC
1180    5    60     0    ------    --    16G    No_Module    FC
1181    5    61     0    ------    --    16G    No_Module    FC
1182    5    62     8    ------    id    16G    No_SigDet    FC
1183    5    63     8    ------    id    16G    No_SigDet    FC
416     8     0    15    ------    id    16G    No_SigDet    FC
417     8     1    15    ------    id    16G    No_SigDet    FC
418     8     2     7    ------    id    16G    No_SigDet    FC
419     8     3     7    ------    id    16G    No_SigDet    FC
420     8     4     7    ------    id    16G    No_SigDet    FC
421     8     5     7    ------    id    16G    No_SigDet    FC
422     8     6    15    ------    id    16G    No_SigDet    FC
```

```
423    8     7    15    ------    id    16G    No_SigDet    FC
424    8     8    14    ------    --    16G    No_Module    FC
425    8     9    14    ------    --    16G    No_Module    FC
426    8    10     6    ------    --    16G    No_Module    FC
427    8    11     6    ------    --    16G    No_Module    FC
428    8    12     6    ------    --    16G    No_Module    FC
429    8    13     6    ------    --    16G    No_Module    FC
430    8    14    14    ------    --    16G    No_Module    FC
431    8    15    14    ------    --    16G    No_Module    FC
432    8    16    13    ------    --    16G    No_Module    FC
433    8    17    13    ------    --    16G    No_Module    FC
434    8    18     5    ------    --    16G    No_Module    FC
435    8    19     5    ------    --    16G    No_Module    FC
436    8    20     5    ------    --    16G    No_Module    FC
437    8    21     5    ------    --    16G    No_Module    FC
438    8    22    13    ------    --    16G    No_Module    FC
439    8    23    13    ------    --    16G    No_Module    FC
440    8    24    12    ------    id    16G    No_SigDet    FC
441    8    25    12    ------    id    16G    No_SigDet    FC
442    8    26     4    ------    id    16G    Online       FC    \
     E-Port  10:00:00:05:1e:39:f0:ca "ras040" (Trunk master)
443    8    27     4    ------    id    16G    Online       FC    \
     E-Port  10:00:00:05:1e:39:f0:ca "ras040" (upstream)(Trunk master)
444    8    28     4    ------    id    16G    Online       FC    \
     E-Port  10:00:00:05:1e:39:f0:ca "ras040" (Trunk master)
445    8    29     4    ------    id    16G    Online       FC    \
     E-Port  10:00:00:05:1e:39:f0:ca "ras040" (Trunk master)
446    8    30    12    ------    id    16G    No_SigDet    FC
447    8    31    12    ------    id    16G    No_SigDet    FC
1184    8    32    11    ------    --    16G    No_Module    FC
1185    8    33    11    ------    --    16G    No_Module    FC
1186    8    34     3    ------    --    16G    No_Module    FC
1187    8    35     3    ------    --    16G    No_Module    FC
1188    8    36     3    ------    --    16G    No_Module    FC
1189    8    37     3    ------    --    16G    No_Module    FC
1190    8    38    11    ------    --    16G    No_Module    FC
1191    8    39    11    ------    --    16G    No_Module    FC
1192    8    40    10    ------    id    16G    No_SigDet    FC
1193    8    41    10    ------    id    16G    No_SigDet    FC
1194    8    42     2    ------    --    16G    No_Module    FC
1195    8    43     2    ------    --    16G    No_Module    FC
1196    8    44     2    ------    --    16G    No_Module    FC
1197    8    45     2    ------    --    16G    No_Module    FC
1198    8    46    10    ------    id    16G    No_SigDet    FC
1199    8    47    10    ------    id    16G    No_SigDet    FC
1200    8    48     9    ------    --    16G    No_Module    FC
1201    8    49     9    ------    --    16G    No_Module    FC
1202    8    50     1    ------    --    16G    No_Module    FC
1203    8    51     1    ------    --    16G    No_Module    FC
1204    8    52     1    ------    --    16G    No_Module    FC
1205    8    53     1    ------    --    16G    No_Module    FC
1206    8    54     9    ------    --    16G    No_Module    FC
1207    8    55     9    ------    --    16G    No_Module    FC
```

```
1208    8    56    8    ------    id    16G    No_SigDet    FC
1209    8    57    8    ------    id    16G    No_SigDet    FC
1210    8    58    0    ------    --    16G    No_Module    FC
1211    8    59    0    ------    --    16G    No_Module    FC
1212    8    60    0    ------    --    16G    No_Module    FC
1213    8    61    0    ------    --    16G    No_Module    FC
1214    8    62    8    ------    id    16G    No_SigDet    FC
1215    8    63    8    ------    id    16G    No_SigDet    FC
```

To display media type information (relevant output excerpts only):

- The following example shows **switchshow** output for the ge0 and ge1 ports on a Brocade 7810:

```
[...]
ge0  cu   1G   Offline   FCIP Copper  Disabled (Unsupported blade mode)
ge1  cu   1G   Offline   FCIP Copper  Disabled (Unsupported blade mode)
ge2  id   1G   No_Module  FCIP
ge3  id   1G   No_Module  FCIP

ge4  id   1G   No_Light   FCIP
ge5  id   1G   No_Light   FCIP
ge6  id   1G   No_Module  FCIP
ge7  id   1G   No_Module  FCIP
[...]
```

- This example shows **switchshow** output for a Brocade 5100. Port 31 has an SFP installed. Nothing is installed on Port 32.

```
[...]
31   31   421f00   id   N4   In_Sync     FC   Disabled
32   32   422000   --   N8   No_Module   FC   Disabled
[...]
```

- The **sfpShow** output for the same switch displays the serial number for the SFP.

```
[...]
Port 31: id (sw) Vendor: BROCADE Serial No: UAF1081800000MK
  Speed: 200,400,800_MB/s
Port 32: --
[...]
```

To display output when an authentication fails for a reason and the port gets disabled:

```
[...]
15   15   id   N2   No_Light        Disabled (Authentication Required)
[...]
```

To display the neighbor switch WWN for the segmented ISLs during ELP and post ELP:

```
switch:admin>   switchshow
switchName:     swd77
switchType:     71.2
switchState:    Online
switchMode:     Native
switchRole:     Principal
switchDomain:   1
switchId:       fffc01
switchWwn:      10:00:00:05:1e:a2:ec:9c
```

```
zoning:         OFF
switchBeacon:   OFF

Index Port Address Media Speed State      Proto
================================================
   0   0   010000   id    N8   No_Light   FC  Disabled (Persistent)
   1   1   010100   id    N8   No_Light   FC  Disabled (Persistent)
   2   2   010200   id    N4   No_Light   FC
   3   3   010300   id    N4   No_Light   FC
   4   4   010400   id    N8   No_Light   FC  Disabled (Persistent)
   5   5   010500   id    N8   No_Light   FC  Disabled (Persistent)
   6   6   010600   id    N8   No_Light   FC  Disabled (Persistent)
   7   7   010700   id    N8   No_Light   FC  Disabled (Persistent)
   8   8   010800   --    N8   No_Module  FC  Disabled (Persistent)
   9   9   010900   id    N4   Online     FC  E-Port \
     10:00:00:05:1e:a3:00:59 segmented,(RA TOV incompat)
  10  10   010a00   id    N8   No_Light   FC  Disabled (Persistent)
```

To display the output when any of the ICL links get disabled with no Enterprise ICL (EICL) license installed:

• If no EICL license is installed and the number of ICL-connected chassis in the fabric is more than 4, the port disable reason code displayed is, "No EICL License".

• If EICL license is installed and the number of ICL-connected chassis in the fabric exceeds 10, the port disable reason code displayed is, "EICL License Limited".

```
switch:admin> switchshow
switchName:     DCX_150
switchType:     120.3
switchState:    Online
switchMode:     Native
switchRole:     Principal
switchDomain:   6
switchId:       fffc06
switchWwn:      10:00:00:05:1e:93:ff:00
zoning:         OFF
switchBeacon:   OFF
FC Router:      OFF
Fabric Name:    fabric
Allow XISL Use: OFF
LS Attributes:  [FID: 128, Base Switch: No, Default Switch: Yes,
Address Mode 0]

Index Slot Port Address Media  Speed  State      Proto
=======================================================
   0    1    0   050000   --     N8   No_Module  FC
   1    1    1   050100   --     N8   No_Module  FC
   2    1    2   050200   --     N8   No_Module  FC
 .....
 398    5   14   ------   cu     8G   No_Sync    FC
 399    5   15   ------   cu     8G   No_Sync    FC
 400    5   16   ------   cu     8G   In_Sync    FC  Disabled (No EICL
License)
```

```
 401    5   17   ------   cu    8G   In_Sync    FC  Disabled (No EICL
License)
 402    5   18   ------   cu    8G   In_Sync    FC  Disabled (No EICL
License)
 403    5   19   ------   cu    8G   In_Sync    FC  Disabled (No EICL
License)
 404    5   20   ------   cu    8G   In_Sync    FC  Disabled (No EICL
License)
 405    5   21   ------   cu    8G   In_Sync    FC  Disabled (No EICL
License)
 406    5   22   ------   cu    8G   In_Sync    FC  Disabled (No EICL
License)
 407    5   23   ------   cu    8G   In_Sync    FC  Disabled (No EICL
License)
 .....
 416    8   0    ------   cu    8G   In_Sync    FC  E-Port
10:00:00:05:1e:4a:cb:00 "sw0" (upstream) \
(Trunk master)
 417    8   1    ------   cu    8G   In_Sync    FC  E-Port  (Trunk
port, master is Slot  8 Port  0 )
 418    8   2    ------   cu    8G   In_Sync    FC  E-Port  (Trunk
port, master is Slot  8 Port  0 )
 419    8   3    ------   cu    8G   In_Sync    FC  E-Port  (Trunk
port, master is Slot  8 Port  0 )
 420    8   4    ------   cu    8G   In_Sync    FC  E-Port  (Trunk
port, master is Slot  8 Port  0 )
```

To display the port status information on 16Gb/s-capable Inter-Chassis Links (ICLs):

```
switch:admin> switchshow
switchName:    ICL_DCX
switchType:    120.3
switchState:   Online
switchMode:    Native
switchRole:    Principal
switchDomain:  1
switchId:      fffc01
switchWwn:     10:00:00:05:1e:48:f8:02
zoning:        ON (bb_zone)
switchBeacon:  OFF
FC Router:     ON
Fabric Name:   BBTI
LS Attributes: [FID: 10, Base Switch: Yes,
Default Switch: No, Address Mode 0]

Index Slot Port Address Media  Speed          State     Proto
==============================================================
 396    5   12   018040  id    16G     Online      FC  EX-Port \
    10:00:00:05:33:b3:39:00 "Pluto2" (fabric id = 11 )(Trunk master)
 397    5   13   018080  id    16G     Online      FC  EX-Port \
    10:00:00:05:33:b3:39:00 "Pluto2" (fabric id = 11 )(Trunk master)
 398    5   14   0180c0  id    16G     Online      FC  EX-Port \
    10:00:00:05:33:b3:39:00 "Pluto2" (fabric id = 11 )(Trunk master)
 399    5   15   018100  id    16G     Online      FC  EX-Port \
```

```
        10:00:00:05:33:b3:39:00 "Pluto2" (fabric id = 11 )(Trunk master)
   412   5   28   ------   id   16G   Online      FC   E-Port \
        10:00:00:05:1e:75:4c:00 "FCR-DCX128" (upstream)(Trunk master)
   413   5   29   ------   id   16G   Online      FC   E-Port \
        10:00:00:05:1e:75:4c:00 "FCR-DCX128" (Trunk master)
   414   5   30   ------   id   16G   Online      FC   E-Port \
        10:00:00:05:1e:75:4c:00 "FCR-DCX128" (Trunk master)
   415   5   31   ------   id   16G   Online      FC   E-Port \
        10:00:00:05:1e:75:4c:00 "FCR-DCX128" (Trunk master)
```

To display the output when the location ID is configured:

```
switch:admin> switchshow
switchName:     switch
switchType:     66.1
switchState:    Online
switchMode:     Native
switchRole:     Subordinate
switchDomain:   106
switchId:       fffc6a
switchWwn:      10:00:00:05:1e:57:df:49
zoning:         ON (cfg_qos)
switchBeacon:   OFF
FC Router:      ON
FC Router BB Fabric ID: 128
Address Mode:   0
Fabric Name:    base
Location ID:    1

Index Port Address Media Speed State     Proto
===============================================
```

To display the output of license names on switchshow for Gen 6 platform:

```
switch:admin> licenseshow
G33rmR3ACfXE73YHgfDAZaY7fKRmEXSYHDt3MEHAmZGB:
    Ports on Demand license
    Capacity 24
BgEZfRHErC44P7aG99SmSYAFXKgZfrK3BAtgB:
    Trunking license
7QrGLL4CamMT79DGgQ9LQJ4RAE7AYAgmPQ49GLEAYTLA:
    Q-Flex Ports on Demand license
    Capacity 16
m7ACJRaP4mr7ZGWJX3H9mgJrQ7FSfJ7aBAX9M:
    Extended Fabric license
MSK74AZtY3YSPgFFWaRDQtPTXNrGfNNTBAGRR:
    Trunking license
9rSrGJga4Wt4KN4CfF7QJafYDTPrTHHLBJZBG:
    Fabric Vision and IO Insight license

switch:admin> switchshow
switchName   :Wedg57
switchType   :162.0
switchState  :Online
switchMode   :Native
```

```
switchRole   :Subordinate
switchDomain :5
switchId     :fffc05
switchWwn    :10:00:00:27:f8:f0:f6:90
zoning       :ON (cfga_1)
switchBeacon :OFF
FC Router    :OFF
Fabric Name  :SNMP
HIF Mode     :OFF
Allow XISL Use:ON
LS Attributes:[FID: 128, Base Switch: No, Default Switch: Yes, Ficon
Switch: No, Address Mode 0]

Index Port Address  Media Speed    State        Proto
==================================================
   0   0   050000   id    N16  No_Light    FC
   1   1   050100   id    N16  No_Light    FC
   2   2   050200   id    N16  Online      FC  F-Port  1 N Port + 20
NPIV public
   4   4   050400   id    N16  No_Light    FC
   5   5   050500   --    N32  No_Module   FC
   6   6   050600   id    N16  No_Light    FC
   7   7   050700   id    N16  No_Light    FC
   8   8   050800   id    N16  No_Light    FC
   9   9   050900   id    N16  No_Light    FC
  10  10   050a00   id    N16  Online      FC  F-Port
30:13:00:05:33:5b:7d:86
  11  11   050b00   id    N8   Online      FC  F-Port
30:12:00:05:33:5b:7d:86 (AoQ)
  12  12   050c00   --    N32  No_Module   FC
  13  13   050d00   id    N16  Online      FC  E-Port
10:00:00:05:1e:53:c9:72 "PPlus" (Trunk master)
  14  14   050e00   id    16G  Online      FC  E-Port
10:00:00:05:1e:53:c9:72 "PPlus" (Trunk master)
  15  15   050f00   id    N16  No_Light    FC
  16  16   051000   id    N32  Online      FC  F-Port
10:00:00:90:fa:94:22:c5
  17  17   051100   id    16G  Online      FC  E-Port
10:00:00:05:1e:53:c9:72 "PPlus" (Trunk master)
  18  18   051200   id    N16  Online      FC  E-Port
10:00:00:27:f8:f1:e5:c0 "sw0" (Trunk master)
  19  19   051300   id    N32  Online      FC  E-Port
10:00:00:27:f8:f1:e5:c0 "sw0" (upstream)(Trunk master)
  20  20   051400   id    N32  Online      FC  F-Port  1 N Port + 3
NPIV public
  21  21   051500   id    N16  Online      FC  E-Port  (Trunk port,
master is Port 22 )
  22  22   051600   id    N16  Online      FC  E-Port
10:00:50:eb:1a:9c:75:30 "Odin" (Trunk master)
  23  23   051700   id    N16  Online      FC  E-Port
10:00:50:eb:1a:9c:75:30 "Odin" (Trunk master)
  25  25   051900   id    N32  No_Light    FC
  26  26   051a00   --    N32  No_Module   FC
```

```
   28  28   051c00   id   16G  Online     FC   E-Port
segmented,10:00:00:05:1e:53:c9:74 (ESC mismatch, Fabric ID)(Trunk
master)
   29  29   051d00   id   16G  Online     FC   E-Port
10:00:00:05:1e:53:c9:72 "PPlus" (Trunk master)
   30  30   051e00   id   N16  No_Light    FC
   31  31   051f00   id   N32  Online     FC   E-Port
10:00:c4:f5:7c:01:1f:80 "Tyr" (Trunk master)
   33  33   052100   id   N32  Online     FC   E-Port
10:00:00:27:f8:f1:e5:c0 "sw0" (Trunk master)
   34  34   052200   id   N32  No_Light    FC
   36  36   052400   id   N16  No_Light    FC
   37  37   052500   id   N32  No_Light    FC
   38  38   052600   id   N16  No_Light    FC  (Ports on Demand license
not assigned or reserved yet)
   40  40   052800   id   N16  No_Light    FC
   41  41   052900   --   N32  No_Module    FC  (Ports on Demand license
not assigned or reserved yet)
   42  42   052a00   id   N32  No_Light    FC
   43  43   052b00   id   N32  No_Light    FC
   44  44   052c00   --   N32  No_Module    FC
   46  46   052e00   --   N32  No_Module    FC
   47  47   052f00   --   N32  No_Module    FC
   50  50   053200   id   N32  No_SigDet    FC
   52  52   053400   --   N32  No_Module    FC  (QFLEX Ports on Demand
license not assigned or reserved yet)
   53  53   053500   --   N32  No_Module    FC  (QFLEX Ports on Demand
license not assigned or reserved yet)
   54  54   053600   --   N32  No_Module    FC  (QFLEX Ports on Demand
license not assigned or reserved yet)
   55  55   053700   --   N32  No_Module    FC  (QFLEX Ports on Demand
license not assigned or reserved yet)
   56  56   053800   --   N32  No_Module    FC
   57  57   053900   --   N32  No_Module    FC
   58  58   053a00   --   N32  No_Module    FC
   59  59   053b00   --   N32  No_Module    FC
   60  60   053c00   --   N32  No_Module    FC  (QFLEX Ports on Demand
license not assigned or reserved yet)
   61  61   053d00   --   N32  No_Module    FC  (QFLEX Ports on Demand
license not assigned or reserved yet)
   62  62   053e00   --   N32  No_Module    FC  (QFLEX Ports on Demand
license not assigned or reserved yet)
   63  63   053f00   --   N32  No_Module    FC  (QFLEX Ports on Demand
license not assigned or reserved yet)
```

To display the output of FCoE ports:

```
switch:admin> switchshow
switchName:    sw0
switchType:    165.0
switchState:   Online
switchMode:    Native
switchRole:    Principal
```

```
switchDomain:   1
switchId:       fffc01
switchWwn:      10:00:c4:f5:7c:64:29:00
zoning:         OFF
switchBeacon:   OFF
FC Router:      OFF
HIF Mode:       OFF
Allow XISL Use: OFF
LS Attributes:  [FID: 128, Base Switch: No, Default Switch: Yes, Ficon
Switch: No, Address Mode 0]

Index Slot Port Address Media  Speed      State      Proto
============================================================
    8    3    8   010800   id    N16      Online    FC  E-Port
10:00:c4:f5:7c:5b:60:74 "sw0" (downstream)
   13    3   13   010d00   id    N8       Online    FC  F-Port
20:01:00:11:0d:61:af:00
  196    8    4   01c400   id    10G      Online    ETH
1800   -1 1800   019040   --    --       Online    FCoE VF-Port  1 N Port
+ 2 NPIV public
1801   -1 1801   ------   --    --       Offline   FCoE VF-Port  Disabled
1802   -1 1802   ------   --    --       Offline   FCoE
1803   -1 1803   ------   --    --       Offline   FCoE
1804   -1 1804   ------   --    --       Offline   FCoE
```

See Also

fabricName, portCfgLongDistance, switchDisable, switchEnable, switchName

switchViolation

Dumps the DCC violations for a switch.

Synopsis

```
switchViolation --dump -dcc
```

Description

Use this command to display all Device Connection Control (DCC) violations that have occurred on a switch. Internally the command searches "errdumpall" for the DCC violations. For each DCC violation, the command displays the device WWN and the port where the violation occurred.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

This command can be executed on both active and standby CPs. This command does not support High Availability (HA).

Operands

This command has the following operands. If executed without operands, the command prints the usage.

--dump

Displays specified policy violation.

-dcc

Specifies the violation type as DCC.

Examples

To display DCC violations for a switch:

```
switch:admin> switchviolation --dump -dcc
Device WWN                      Port
-----------------------------------
22:00:00:04:cf:75:59:87         10
```

See Also

None

sysHealth

Performs a PCIe link test between the standby CP and the port or core blades in the chassis.

Synopsis

```
syshealth --slotpcitest slot_number
syshealth --slotpcitest all
syshealth --help
```

Description

Use this command to run tests related to system health. The only test that is supported is slotpcitest.

Notes

PCIe errors found during the link test cannot be corrected, and for any test failures, perform **slotpoweroff** or **slotpoweron** manually during the maintenance window.

This command is not supported on fixed-port switches and single CP devices.

This command is subject to Virtual Fabric restrictions that may be in place. See "Using Fabric OS Commands" and "Command Availability" for details.

Operands

--slotpcitest *slot_number*

Performs a test on the PCIe link between the standby CP and the blade that is on the specified slot.

--slotpcitest all

Performs a test on all valid slots. The CP and vacant slots are skipped during the test.

--help

Displays the command usage.

Examples

To perform a slotpcitest test on a particular slot:

```
switch:admin> syshealth --slotpcitest 7
Slot   Test Result
---------------------
 7      SUCCESS
```

To perform a slotpcitest test for all slots:

```
switch:admin> syshealth --slotpcitest all
Slot   Test Result
----   -----------
 4       SUCCESS
 5       SUCCESS
 6       SUCCESS
 7       SUCCESS
```

See Also

None

syslogAdmin

Configures a syslog server host.

Synopsis

```
syslogadmin --set -ip ip_address | hostname [-secure] [-port port_num]
syslogadmin --set -facility level
syslogadmin --remove -ip ip_address | hostname
syslogadmin --show -ip | -facility
syslogadmin --help
```

Description

Use this command to configure a switch to forward all error log entries to a remote syslog server, to set the syslog facility to a specified log file, to remove a syslog server, and to display the list of configured syslog servers. Brocade switches use the syslog daemon, a process available on most UNIX systems that reads and forwards system messages to the appropriate log files or users, depending on the system configuration. Up to six servers are supported.

By default, the switch uses UDP protocol to send the error log messages to the syslog server. The default UDP port is 514. Use the **-secure** option to configure the switch to send the error log messages securely using the Transport Layer Security (TLS) protocol. TLS is an encryption protocol over the TCP/IP network protocol and it can be used only with the TCP-based destinations (tcp() and tcp6()). The default TLS port is 6514. While enabling secure syslog mode, you must specify a port that is configured to receive the log messages from the switch.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--set -ip *ip_address* | *hostname*

Configures a syslog server with the specified IP address or hostname. IPv4 and IPv6 addresses are supported. Only one syslog server can be specified at any given time. To configure more than one server, the command must be executed for each server.

-secure

Enables secure syslog mode to send the error log messages securely using the TLS protocol to the syslog server. The secure syslog mode is disabled by default.

-port *port_num*

The **-port** operand is optional. If secure mode is enabled and port number is not specified, the default TLS port number (6514) is set.

--set -facility *level*

Sets the syslog facility. Valid levels are 0 through 7. The default is 7.

0

LOG_LOCAL0

1

LOG_LOCAL1

2

LOG_LOCAL2

3

LOG_LOCAL3

4

LOG_LOCAL4

5

LOG_LOCAL5

6

LOG_LOCAL6

7

LOG_LOCAL7 (default)

--remove -ip *ip_address* **|** *hostname*

Removes the specified syslog server. IPv4 and IPv6 addresses are supported.

--show

Displays the list of configured syslog servers and the facility level.

-ip

Displays all syslog server IP addresses and hostnames.

-facility

Display the configured syslog facility.

--help

> Displays the command usage.

Examples

> To configure an IPv4 secure syslog server to which error log messages are sent:
>
> ```
> switch:admin> syslogadmin --set -ip 172.26.26.173 -secure -port 2000
> ```
>
> To configure an IPv6 non-secure syslog server:
>
> ```
> switch:admin> syslogadmin --set -ip fec0:60:69bc:92:218:8bff:fe40:15c4
> ```
>
> To configure a syslog server using a hostname:
>
> ```
> switch:admin> syslogadmin --set -ip win2k8-58-113
> ```
>
> To set the syslog facility to LOG_LOCAL2:
>
> ```
> switch:admin> syslogadmin --set -facility 2
> switch:admin> syslogadmin --show -facility
> Syslog facility: LOG_LOCAL2
> ```
>
> To display all syslog IP addresses configured on a switch:
>
> ```
> switch:admin> syslogadmin --show -ip
> syslog.1   172.26.26.173
> syslog.2   fec0:60:69bc:92:218:8bff:fe40:15c4
> syslog.3   win2k8-58-113
> ```
>
> To remove the IP address fec0:60:69bc:92:218:8bff:fe40:15c4 from the list of servers to which error log messages are sent:
>
> ```
> switch:admin> syslogadmin --remove -ip fec0:60:69bc:92:218:8bff:fe40:15c4
> ```

See Also

> **None**

sysShutDown

Provides a graceful shutdown to protect the switch file systems.

Synopsis

```
sysshutdown
```

Description

On standalone platforms, use this command to shut down the switch operating system.

On enterprise-class platforms, when **sysShutDown** is called on the active control processor (CP), the command shuts down the active CP, standby CP, and any AP blades.

Some platforms will only shut down the operating systems; others will shut down the operating system as well as shut off the power, that is, the LEDs will turn black.

After executing this command, manually power off the system. To reboot the system, manually turn the power switch on.

Notes

This command is not supported on the standby CP.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To perform a system shutdown on a standalone platform:

```
switch:admin> sysshutdown
This command will shutdown the operating systems on your
switch. You are required to power-cycle the switch in
order to restore operation.
Are you sure you want to shutdown the switch [y/n]? y
Broadcast message from root (ttyS0) Mon Sep 12 17: \
52:12 2005...

The system is going down for system halt NOW !!
INIT: Switching to runlevel:
INIT: Sending processes the TERM signal
ess095:root> Unmounting all filesystems.
The system is halted
flushing ide devices: hda
Power down.
```

To perform a system shutdown on a Brocade DCX-4S:

```
switch:admin> sysshutdown
This command will shutdown the operating systems on your
switch. You are required to power-cycle the switch in
order to restore operation.
Are you sure you want to shutdown the switch [y/n]?y
HA is disabled
Shutting down blade in slot:1, IP addr:127.1.14.2
Shutting down blade in slot:8, IP addr:127.1.14.9
Shutting down OCP at:0.0.0.0

Broadcast message from root (pts/0) Wed Nov  5 19:03:06 2008...

The system is going down for system halt NOW !!
```

To attempt a system shutdown from the standby CP (not supported):

```
switch:admin> sysshutdown
Shut down the whole system is not support from the standby CP
For shut down the whole system
please run the sysshutdown from the active CP
```

See Also

haDisable

tcpTimeStamp

Enables or disables the TCP Timestamping in the TCP frame.

Synopsis

```
tcptimestamp
tcptimestamp --enable
tcptimestamp --disable
tcptimestamp --help
```

Description

Use this command to enable or disable TCP Timestamping in the TCP frame. By default, Timestamping in TCP frame is enabled.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--enable

> Enables the TimeStamping in TCP frame.

--disable

> Disables the TimeStamping in TCP frame.

--help

> Displays the command usage.

Examples

To disable the timestamping in TCP frame:

switch:user> **tcptimestamp --disable**

To enable the timestamping in TCP frame:

switch:user> **tcptimestamp --enable**

See Also

None

tempShow

Displays temperature readings.

Synopsis

tempshow [**-details**]

Description

Use this command to display the current temperature readings of all temperature sensors in a switch. For each sensor, this command displays the sensor ID (an index number), the slot number (if applicable), the sensor index (when issued with the **-detail** option), the sensor state (OK or absent), and the temperature. The temperature readings are given in both Centigrade and Fahrenheit.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Refer to the hardware reference manual for your switch to determine the normal temperature range.

Operands

This command has the following operand:

-details

Displays an additional column for the sensor index. Sensor index indicates the position of the sensor in the system.

Examples

To display temperature and status sensors:

```
switch:user> tempshow
Sensor  Slot    State            Centigrade    Fahrenheit
  ID
========================================================
  1       1     Ok               38            100
  2       1     Ok               28             82
  3       1     Ok               40            104
  4       1     Ok               31             87
  5       1     Ok               43            109
  6       2     Ok               39            102
  7       2     Ok               28             82
  8       2     Ok               40            104
  9       2     Ok               30             86
 10       2     Ok               43            109
```

To display temperature and status sensors with the sensor index:

```
switch:user> tempshow -details
Sensor ID|Slot |Sensor Index|State     |Centigrade |Fahrenheit |
-----------------------------------------------------------------
1        |1    |0           |Ok        |35         |95         |
2        |1    |1           |Ok        |34         |93         |
3        |1    |2           |Ok        |43         |109        |
4        |1    |3           |Ok        |34         |93         |
5        |1    |4           |Ok        |41         |105        |
6        |2    |0           |Absent    |0          |0          |
7        |4    |0           |Ok        |33         |91         |
8        |4    |1           |Ok        |42         |107        |
9        |4    |2           |Ok        |42         |107        |
10       |4    |3           |Ok        |44         |111        |
```

See Also

fanShow, psShow, sensorShow, slotShow

timeOut

Sets or displays the idle timeout value for a login session.

Synopsis

> **timeout** [*timeval*]

Description

Use this command without an operand to display the current timeout value (in minutes) after which idle logins are automatically terminated.

Use this command with the *timeval* operand to set the login timeout value to the specified interval. A value of 0 disables timeout of login sessions.

The new timeout value takes effect with the next logins.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operand:

timeval

> Specify the number of minutes for the Telnet timeout value. Valid values are 1 to 99,999, or 0 to disable login timeouts. This operand is optional; if omitted, the command displays the current timeout value.

Examples

To set the idle timeout to 10 minutes:

```
switch:admin> timeout 10
         IDLE Timeout Changed to 10 minutes
The modified IDLE Timeout will be in effect after NEXT login
```

See Also

> **None**

topologyShow

Displays the unicast fabric topology.

Synopsis

```
topologyshow -index [domain]
topologyshow -nopage [domain]
topologyshow --help
```

Description

Use this command to display the fabric topology as it appears to the local switch. The display varies depending on the hardware configuration. The following rules apply:

- On all switches, the command displays the number of domains in the fabric and the local Domain IDs. If translate domains are configured, existing translate domains and associated ports are displayed.

- On an edge fabric, the command displays the following additional details for all domains in the fabric (including local translate domains):
  - All possible paths from the local switch to each of the remote domains.

  - For each path, the cost, the associated output port on the local switch, the path cost, and the number of hops from the local switch to the destination switch.

  - A summary of all ports that are routed through that path.

- On a backbone fabric, the command displays details for remote domains only. Details for local translate domains are not displayed.

- If there are two switches in the Backbone and the edge fabric is directly connected to both of those switches, **topologyshow** does not display the description of the translate domain associated with that edge fabric. In this case the translate domain is considered local to both of the switches in the backbone.

- If there is only one switch in the backbone, no domain details are displayed (all domains are local).

Depending on the fabric, the display may contains the following fields:

Local Domain ID

The domain number of local switch.

Local Translate Domain x owned by port

The port number associated with the local translate domain *x*.

Domain

The domain number of destination switch.

Metric

The cost of reaching destination domain.

Name

The name of the destination switch.

Path Count

The number of currently active paths to the destination domain. The maximum number of paths supported is 16. If there are more than 16 paths, the path count displays as 16 of *number of paths available*, for example, "16 of 20".

Hops

The maximum number of hops to reach destination domain.

Out Port

The port to which incoming frames are forwarded to reach the destination domain.

In Ports

The input ports that use the corresponding out port to reach the destination domain. This is the same information provided by **portRouteShow** and **uRouteShow** but in a different format.

Total Bandwidth

The maximum bandwidth of the out port. A bandwidth that is less than 0.512Gb/s is adjusted to the nearest power of 2 value. A bandwidth in the range of 0.512Gb/s (included) to 1Gb/s (not included) is adjusted to the 0.512Gb/s value. No adjustment takes place if the bandwidth is greater or equal to 1Gb/s.

Bandwidth Demand

The maximum bandwidth demand by the in ports.

Flags

Always D, indicating a dynamic path. A dynamic path is discovered automatically by the FSPF path selection protocol.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

The following operand is optional:

domain

>   Specify the destination domain for which to display the topology information.

index

>   Display port index numbers instead of slot or port numbers in the output.

nopage

>   Disables the paging format to display the output.

Examples

>   To display the topology on a single switch: domain is local, details are not displayed.

```
switch:user> topologyshow

   1 domains in the fabric; Local Domain ID: 97
```

>   When executed from an edge fabric, **topologyshow** displays details for all domains, including local domains and local translate domains:

```
switch:user> topologyshow

6 domains in the fabric; Local Domain ID: 7

Domain:          1
Metric:          10500
Name:            fcr_xd_1_1
Path Count:      1

    Hops:                   2
    Out Port:               11
    In Ports:               0 1 2 3 4 5 6 7 8 9 15
    Total Bandwidth:        8.000 Gbps
    Bandwidth Demand:       1275 %
    Flags:                  D

Domain:          2
Metric:          1000
Name:            fcr_fd_2
Path Count:      1

    Hops:                   2
    Out Port:               15
    In Ports:               0 1 2 3 4 5 6 7 8 9 11
    Total Bandwidth:        2.000 Gbps
    Bandwidth Demand:       4000 %
    Flags:                  D

Domain:          3
Metric:          10500
Name:            fcr_xd_3_5
```

```
Path Count:      1
    Hops:                    2
    Out Port:                11
    In Ports:                0 1 2 3 4 5 6 7 8 9 15
    Total Bandwidth:         8.000 Gbps
    Bandwidth Demand:        1275 %
    Flags:                   D

Domain:          111
Metric:          500
Name:            peng3900101
Path Count:      1

    Hops:                    1
    Out Port:                15
    In Ports:                0 1 2 3 4 5 6 7 8 9 11
    Total Bandwidth:         2.000 Gbps
    Bandwidth Demand:        4000 %
    Flags:                   D
(output truncate)
```

The command is executed from the backbone in a fabric with five switches. The fabric has five
domains, but details are only shown for the three remote domains, not for the two local translate
domains.

```
switch:user> topologyshow

5 domains in the fabric; Local Domain ID: 2
Local Translate Domain 4 owned by port: 24
Local Translate Domain 5 owned by port: 23 33

Domain:          1
Metric:          500
Name:            pengsaturn104
Path Count:      1

    Hops:                    1
    Out Port:                0
    In Ports:                23 24 33 38 39
    Total Bandwidth:         8.000 Gbps
    Bandwidth Demand:        350 %
    Flags:                   D

Domain:          3
Metric:          10500
Name:            fcr_xd_3_6
Path Count:      1

    Hops:                    2
    Out Port:                0
    In Ports:                23 24 33 38 39
    Total Bandwidth:         8.000 Gbps
    Bandwidth Demand:        350 %
    Flags:                   D
```

To display the topology with index numbers:

```
switch:user> topologyshow -index
1 domain(s) in the fabric; Local Domain ID: 188

Domain:         178
Metric:         500
Name:           dcx_178
Path Count:     1

        Hops:                   1
        Out Port (index):       112
        In Ports (index):       246 247
        Total Bandwidth:        24.000 Gbps
        Bandwidth Demand:       133 %
        Flags:                  D
```

See Also

portRouteShow, uRouteShow

traceDump

Initiates, or removes a trace dump or displays the trace dump status.

Synopsis

```
tracedump [-S]
tracedump -n [-s slot]
tracedump -r [-s slot] | -R
tracedump -c
```

Description

Use this command to initiate a background trace dump, to remove the content of a trace dump, or to display the dump status on the switch.

When executed without operands, this command defaults to **traceDump -S**.

Execution of **traceDump -n** generates a local trace dump locally. Use **supportSave** to transfer the local trace dump to a remote host. When **supportSave** is used, the default remote file name format for the trace dump file is as follows:

chassisname-S#xxs-YYYYMMDDHHMMSS.type_[NEW | OLD].dmp.gz

When the **traceDump -n -s** command is used with an AP blade, the trace dump is generated with the following file name format:

chassisname-S#xxs-YYYYMMDDHHMMSS_dump.tar.gz

S#

Indicates the slot number (0 on standalone platforms)

xxs

Indicates the processor. Values are cp0, cp1, bp0, bp1, dp0, or dp1.

YYYYMMDDHHMMSS

Indicates the trace dump time stamp (year-month-day-hour-minute-second).

type

Indicates the tracedump type. Valid types include TRACE, BTRACE, DTRACE, CTRACE, and Reboot.

NEW | OLD

Indicates a new or an old trace dump file.

dmp.gz

The compressed trace dump archive file extension.

For example, the filename for a a new BFOS tracedump received from slot 10 on chassisABC would be chassisABC-S10bp-201103031111.BTRACE_NEW.dmp.gz.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following mutually exclusive operands:

-S

Displays the trace dump status This operand is optional. If omitted, the same status information is displayed.

-n

Initiates a background trace dump.

-r

Clears the status of a particular trace dump on a specified slot.

-R

Clears the status of a particular trace dump on all slots.

-c

Clears all trace dump buffers. This operation resets the trace buffer contents.

-s *slot*

Specifies the slot number from which a trace dump is generated. If a slot is not supplied, the trace dump is generated from the local slot. This operand is optional.

Examples

To initiate a background trace dump from slot 5:

```
switch:admin> tracedump -n -s 5
```

To display the trace dump status on the Brocade 8510-8 switch:

```
switch:admin> tracedump -S
Dump status for switch:
Slot 6:  Thu Mar 17 04:43:44 2016
Slot 7:  Thu Mar 17 04:44:57 2016
Slot 11:  Thu Mar 17 04:45:07 2016
```

To display the trace dump status on a Gen6 switch:

```
switch:admin> tracedump -S
Dump status for switch:

slot: 1
Type            Timestamp
--------------------------------
Reboot          2016/03/16 10:50
FFDC(EM-1100)   2016/03/17 02:13
Panicdump       2016/03/17 02:24
CLI             2016/03/17 02:47

slot: 2
Type            Timestamp
--------------------------------
Reboot          2016/03/16 10:50
Reboot          2016/03/17 02:24
Reboot          2016/03/17 02:47
```

To clear the status of a trace dump:

```
switch:admin> tracedump -R
trace dump removed
```

To clear the content of the trace dump buffer:

```
switch:admin> tracedump -c
Cleared Trace Buffer contents
```

See Also

supportFtp, supportSave, supportShow

trunkDebug

Debugs a trunk link failure.

Synopsis

trunkdebug *port1 port2*

Description

Use this command to debug a trunk link failure. This command reports one of the following messages, based on the trunking properties of the two specified ports:

- Switch does not support trunking

- Trunking license required

- port *port_id* is not E_Port

- port *port_id* trunking disabled

- port *port_id* speed is not 2G, 4G or 8G

- port *port_id* and port *port_id* are not in same port group

- port *port_id* and port *port_id* connect to different switches

- port *port_id* and port *port_id* connect to the switch WWN

- port *port_id* is not a trunking port due to: E_Port being disabled, or trunking might be disabled at remote port

- port *port_id* and port *port_id* cannot trunk, please check link length to make sure difference is less than 400 m

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

port1

Specify the port index number of port 1. Use the **switchShow** command to view the index numbers for a port. This operand is required.

port2

Specify the port index number of port 2. Use the **switchShow** command to view the index numbers for a port. This operand is required.

Examples

To debug a trunk connection:

```
switch:admin> trunkdebug 43 44
Switch does not support trunking

switch:admin> trunkdebug 62 63
port 62 and 63 are trunked together
```

See Also

portCfgTrunkPort, switchCfgTrunk, trunkShow

trunkShow

Displays trunking information.

Synopsis

trunkshow [**-perf**] [**-swname**]

Description

Use this command to display trunking information of both E_Ports and EX_Ports. The command displays the following fields:

Trunking Group Number

Displays each trunking group on a switch. All ports that are part of this trunking group are displayed.

Port to port connections

Displays the port-to-port trunking connections.

WWN

Displays the world wide name of the connected port.

Domain

Displays the domain IDs of the switches directly connected to the physical ports. In case of an FC Router backbone fabric interlinking several edge fabrics, the domain ID displayed for an E_Port trunk refers to a domain of a switch within the backbone fabric, whereas the domain ID displayed for an EX_Port trunk refers to the domain ID of a switch in the edge fabric. Because they are independent fabrics, it is possible that both the backbone and the edge fabric may have the same domain ID assigned to switches. If this is the case, run **switchShow** to obtain information on the port types of the local switch and the WWNs of the remote switches. Refer to the Example section for an illustration.

deskew

The difference between the time it takes for traffic to travel over each ISL and the time it takes through the shortest ISL in the group plus the minimum deskew value. The value is expressed in nanoseconds divided by 10. For Brocade Gen 5 Platforms, the firmware automatically sets the minimum deskew value for the shortest ISL, which is 15. For Brocade Gen 6 Platforms, the minimum deskew value is from 5 through 14 and is set based on the link speed.

Master

Displays whether this trunking port connection is the master port connection for the trunking group.

When used with the **-perf** option, the command output displays the following additional information:

bandwidth

> The bandwidth (Rx, Tx, and the combined total for Tx+Rx) of the trunk group. Values are displayed as either bits per second (b/s), kilobits per second (Kb/s), megabits per second (Mb/s), or gigabits per second (Gb/s), rounded down to the next integer.

throughput

> Displays the throughput (Rx, Tx, and the combined total for Tx+Rx) of the trunk group. Results are displayed for the previous second. Values are displayed as either bits per second (b/s), kilobits per second (Kb/s), megabits per second (Mb/s), or gigabits per second (Gb/s), rounded down to the next integer.

%

> Displays the percentage of link utilization (Rx, Tx, and the combined total for Tx+Rx) . Even when the link utilization is 100% , the throughput value will be lesser than the band-width value, due to the 8b/10b encoding and the control words transmitted. For example, the throughput for an 8Gb/s link at 100% utilization would be approximately 6.8Gb/s.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operand:

-perf

> Displays the total bandwidth, throughput, and percentage of link utilization information for the trunk group (Rx, Tx, and combined total for Tx+Rx). This operand is optional.

-swname

> Displays the neighbor switch name. This operand is optional.

Examples

To display trunking information for a switch:

```
switch:admin> trunkshow
1: 43->  0 10:00:00:05:1e:53:e3:8a  92 deskew 15 MASTER

2: 58-> 66 10:00:00:05:1e:4f:eb:00  65 deskew 16 MASTER
   61-> 69 10:00:00:05:1e:4f:eb:00  65 deskew 16
   57-> 65 10:00:00:05:1e:4f:eb:00  65 deskew 16
   60-> 68 10:00:00:05:1e:4f:eb:00  65 deskew 15
   56-> 64 10:00:00:05:1e:4f:eb:00  65 deskew 16
```

```
     63-> 71 10:00:00:05:1e:4f:eb:00   65 deskew 16
     62-> 70 10:00:00:05:1e:4f:eb:00   65 deskew 16

3: 59-> 67 10:00:00:05:1e:4f:eb:00   65 deskew 15 MASTER
```

To display trunking information for a switch that is part of an FC Router backbone fabric interlinking several edge fabrics (see the EX_Port with WWN "10:00:00:05:1e:35:b3:03" and the E_Port with WWN "10:00:00:05:1e:37:12:13" in the output below):

```
switch:admin> trunkshow
4: 49->  0 10:00:00:05:1e:35:b3:03   4 deskew 16 MASTER
   54->  2 10:00:00:05:1e:35:b3:03   4 deskew 16
   53->  5 10:00:00:05:1e:35:b3:03   4 deskew 16
   50->  6 10:00:00:05:1e:35:b3:03   4 deskew 15
   51->  4 10:00:00:05:1e:35:b3:03   4 deskew 16
   52->  7 10:00:00:05:1e:35:b3:03   4 deskew 67
   55->  3 10:00:00:05:1e:35:b3:03   4 deskew 16
   48->  1 10:00:00:05:1e:35:b3:03   4 deskew 15

5: 71-> 22 10:00:00:05:1e:37:12:13   4 deskew 17 MASTER
   67-> 17 10:00:00:05:1e:37:12:13   4 deskew 16
   70-> 20 10:00:00:05:1e:37:12:13   4 deskew 16
   69-> 21 10:00:00:05:1e:37:12:13   4 deskew 16
   66-> 18 10:00:00:05:1e:37:12:13   4 deskew 17
   68-> 23 10:00:00:05:1e:37:12:13   4 deskew 17
   64-> 16 10:00:00:05:1e:37:12:13   4 deskew 15
   65-> 19 10:00:00:05:1e:37:12:13   4 deskew 16

switch:admin> switchshow
 48 4  0 013000 id  N4   Online   EX-Port  \
    (Trunk port, master is Slot  4 Port  1 )
 49 4  1 013100 id  N4   Online   EX-Port  \
    10:00:00:05:1e:35:b3:03 "SW4100_33" (fabric id = 100 )\
    (Trunk master) E-Port    \
    50:00:51:e3:70:bb:af:c1 "fcr_xd_9_100"
 50 4  2 013200 id  N4   Online   EX-Port  \
    (Trunk port, master is Slot  4 Port  1 )
 51 4  3 013300 id  N4   Online   EX-Port  \
    (Trunk port, master is Slot  4 Port  1 )
 52 4  4 013400 id  N4   Online   EX-Port  \
    (Trunk port, master is Slot  4 Port  1 )
 53 4  5 013500 id  N4   Online   EX-Port  \
    (Trunk port, master is Slot  4 Port  1 )
 54 4  6 013600 id  N4   Online   EX-Port  \
    (Trunk port, master is Slot  4 Port  1 )
 55 4  7 013700 id  N4   Online   EX-Port  \
    (Trunk port, master is Slot  4 Port  1 )
 64 7  0 014000 id  N4   Online   E-Port  \
    (Trunk port, master is Slot  7 Port  7 )
 65 7  1 014100 id  N4   Online   E-Port  \
    (Trunk port, master is Slot  7 Port  7 )
 66 7  2 014200 id  N4   Online   E-Port  \
    (Trunk port, master is Slot  7 Port  7 )
 67 7  3 014300 id  N4   Online   E-Port  \
```

```
         (Trunk port, master is Slot  7 Port  7 )
 68 7  4 014400 id  N4   Online   E-Port  \
    (Trunk port, master is Slot  7 Port  7 )
 69 7  5 014500 id  N4   Online   E-Port  \
    (Trunk port, master is Slot  7 Port  7 )
 70 7  6 014600 id  N4   Online   E-Port  \
    (Trunk port, master is Slot  7 Port  7 )
 71 7  7 014700 id  N4   Online   E-Port  \
    10:00:00:05:1e:37:12:13 "SW4900_43" (downstream)(Trunk master)
```

To display trunking information along with bandwidth throughput information:

```
switch:admin> trunkshow -perf
1: 43-> 0 10:00:00:05:1e:53:e3:8a  92 deskew 15 MASTER
  Tx: Bandwidth 4.00Gbps, Throughput 288.00bps (0.00%)
  Rx: Bandwidth 4.00Gbps, Throughput 320.00bps (0.00%)
  Tx+Rx: Bandwidth 8.00Gbps, Throughput 608.00bps (0.00%)

2: 58-> 66 10:00:00:05:1e:4f:eb:00   65 deskew 16 MASTER
   61-> 69 10:00:00:05:1e:4f:eb:00   65 deskew 16
   57-> 65 10:00:00:05:1e:4f:eb:00   65 deskew 16
   60-> 68 10:00:00:05:1e:4f:eb:00   65 deskew 15
   56-> 64 10:00:00:05:1e:4f:eb:00   65 deskew 16
   63-> 71 10:00:00:05:1e:4f:eb:00   65 deskew 16
   62-> 70 10:00:00:05:1e:4f:eb:00   65 deskew 16
  Tx: Bandwidth 28.00Gbps, Throughput 320.00bps (0.00%)
  Rx: Bandwidth 28.00Gbps, Throughput 1.73Kbps (0.00%)
  Tx+Rx: Bandwidth 56.00Gbps, Throughput 2.05Kbps (0.00%)

3: 59-> 67 10:00:00:05:1e:4f:eb:00   65 deskew 15 MASTER
  Tx: Bandwidth 8.00Gbps, Throughput 0.00bps (0.00%)
  Rx: Bandwidth 8.00Gbps, Throughput 0.00bps (0.00%)
  Tx+Rx: Bandwidth 16.00Gbps, Throughput 0.00bps (0.00%)
```

To display trunking information along with switch name:

```
switch:admin> trunkshow -swname
1:  0-> 10 10:00:00:05:1e:a1:99:09  88 SW_88 deskew 15 MASTER

2:  2-> 11 10:00:00:05:1e:a1:eb:39  75 switchname01234567890123456789
deskew 15 MASTER
```

To display trunking information, with switch name and bandwidth throughput information:

```
switch:admin> trunkshow -pref -swname
1:  0-> 10 10:00:00:05:1e:a1:99:09  88 SW_88 deskew 15 MASTER
    Tx: Bandwidth 4.00Gbps, Throughput 0.00bps (0.00%)
    Rx: Bandwidth 4.00Gbps, Throughput 0.00bps (0.00%)
    Tx+Rx: Bandwidth 8.00Gbps, Throughput 0.00bps (0.00%)

2:  2-> 11 10:00:00:05:1e:a1:eb:39  75 switchname01234567890123456789
deskew 15 MASTER
    Tx: Bandwidth 4.00Gbps, Throughput 0.00bps (0.00%)
    Rx: Bandwidth 4.00Gbps, Throughput 0.00bps (0.00%)
    Tx+Rx: Bandwidth 8.00Gbps, Throughput 0.00bps (0.00%)
```

See Also

portCfgTrunkPort, switchCfgTrunk

tsClockServer

Displays or sets the Network Time Protocol (NTP) Server addresses.

Synopsis

tsclockserver [*ipaddr* [*; ipaddr ...*]]

Description

Use this command to synchronize the local time of the Principal or Primary FCS switch to one or more external NTP servers.

This command accepts a list of NTP server addresses. The NTP server addresses can be passed in either IPV4 or IPV6 address format or as a DNS server name. When multiple NTP server addresses are specified, **tsClockServer** sets the first reachable address for the active NTP server. The remaining addresses are stored as backup servers, which can take over if the active NTP server fails.

The time server daemon synchronizes fabric time by sending updates of the Principal or Primary FCS local switch time periodically to every switch in the fabric. The time server daemon runs on all switches in the fabric, but only the Principal switch (when an FCS policy is not enabled) or the Primary FCS switch (when an FCS policy is enabled) connect to the NTP server (if specified) and broadcasts time service updates.

All switches in the fabric maintain the current clock server IP address in nonvolatile memory. By default, this value is **LOCL**., that is, the local clock of the Principal or the Primary FCS switch is the default clock server. Changes to the clock server IP addresses on the Principal or Primary FCS switch are propagated to all switches in the fabric.

Use this command without parameters to display the active NTP server and the configured NTP server list. Specify the **ipaddr** operands to set the clock server IP addresses and enable fabric-wide clock synchronization with the specified clock server. A value of **LOCL** may be specified as operand to set the clock server back to default.

Each **ipaddr** specified should be the IP address of an NTP server and should be accessible from the switch. The NTP server must support a full NTP client. When a clock server IP address other than **LOCL** is specified but is not used by the fabric, a warning is displayed and logged. When a clock server IP address other than **LOCL** is specified, the **date** command is restricted to display only. Refer to the **date** command help for details.

Notes

When an FCS policy is enabled, this command can be run on all switches to view the clock server value. However, you can only modify the clock server value from the Primary FCS switch.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operand:

ipaddr

Specify the IP address of the NTP server or **LOCL** to use the local clock of the Principal or Primary FCS switch as the clock server. If more than one IP address is specified, separate the IP addresses by semicolons and enclose the list in double quotation marks. This operand is optional; if omitted, the current NTP server configuration is displayed. The default NTP server is **LOCL**.

Examples

To display the default clock server:

```
switch:admin> tsclockserver
LOCL
```

To set the NTP server to a specified IP address:

```
switch:admin> tsclockserver 123.123.123.123
Updating Clock Server configuration...done.

switch:admin> tsclockserver
123.123.123.123
```

To configure multiple NTP servers:

```
switch:admin> tsclockserver "12.134.125.24; 12.234.87.01"
Updating Clock Server configuration...done.
```

See Also

date

tsTimeZone

Displays or sets the system time zone.

Synopsis

```
tstimezone --interactive
tstimezone timezonename
tstimezone --old hourOffset[,minuteOffset]
```

Description

Use this command to display or set the system time zone.

All switches maintain the current time zone setup in nonvolatile memory. Changing the time zone on a switch updates the local time zone setup and is reflected in local time calculations.

All switches are by default in the 0,0 time zone:, which is, GMT. If all switches in a fabric are located in the same time zone, you may leave the default time zone setup.

Time zone is used in computing local time for error reporting and logging. An incorrect time zone setup does not affect the switch operation in any way.

System services started during the switch boot reflect a time zone change only at the next reboot.

The time zone can be specified in the following two ways, by name or in an hours and minutes offset format:

- The offset format is specified with the **--old** option, followed by an hour offset value and optionally a minute offset value.

- The time zone name format uses the timezone database, which automatically adjusts for Daylight Saving Time.

By default, the switch is in offset mode (**--old**), with zero offsets, that is, time is displayed in GMT. Use **tsTimeZone** *timezonename* to change the offset format to the timezone name format.

When executed without parameters, this command displays the current time zone configuration in the format in which it was set.

- Negative hour offset values mean that the local time is behind GMT; for example, -8,0 is GMT-08:00.

- Positive hour offset values mean the that local time is ahead of GMT; for example, 3,0 is GMT+03:00.

When Virtual Fabrics are enabled, the hardware clock is updated by the default switch in the chassis, and the time zone set on any logical switch applies to all logical switches on the chassis. The **tsTimeZone** command requires chassis permissions.

Because there is only one clock on the chassis, for the time server to function correctly, ensure that all logical switches in the fabric have the same NTP Clock Server configured. This includes any Pre-v6.2.0 switches in the fabric.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

The option **11** (none) in interactive command mode to specify the time zone using the POSIX TZ format is not supported.

Operands

This command has the following operands:

--old

Specifies the time zone in the offset format.

hourOffset

Specifies the number of hours relative to GMT. This operand must be specified as an integer. Valid values are -12 to 12. This operand is required with the **--old** option.

minuteOffset

Specifies the number of minutes relative to hour offset. This operand must be specified as an integer and is valid only with the **--old** option. Valid values are -30, 0, or 30. This operand is optional; if not specified, the value defaults to 0.

timezonename

Specifies the name of a time zone from the time zone database. Use **tstimezone --interactive** for a listing of valid time zone name.

--interactive

Interactively sets the timezone in name format.

Examples

To display the current time zone setup and then change it to GMT-3:30:

```
switch:admin> tstimezone
Time Zone Hour Offset: 0
Time Zone Minute Offset: 0

switch:admin> tstimezone -3, -30
Updating Time Zone configuration...done.
System Time Zone change will take effect at next reboot.

switch:admin> tstimezone
Time Zone Hour Offset: -3
Time Zone Minute Offset: -30
```

To set the current timezone to the zone to Pacific Time using the interactive command mode:

```
 switch:admin> tsTimeZone --interactive
Please identify a location so that time zone rules can be set correctly.
Please select a continent or ocean.
1) Africa
2) Americas
3) Antarctica
4) Arctic Ocean
5) Asia
6) Atlantic Ocean
7) Australia
8) Europe
9) Indian Ocean
10) Pacific Ocean
11) none - I want to specify the time zone using the POSIX TZ format.
Enter number or control-D to quit ?2
Please select a country.
 1) Anguilla                          28) Haiti
 2) Antigua & Barbuda                 29) Honduras
 3) Argentina                         30) Jamaica
 4) Aruba                             31) Martinique
 5) Bahamas                           32) Mexico
 6) Barbados                          33) Montserrat
 7) Belize                            34) Nicaragua
 8) Bolivia                           35) Panama
 9) Bonaire Sint Eustatius & Saba     36) Paraguay
10) Brazil                            37) Peru
11) Canada                            38) Puerto Rico
12) Cayman Islands                    39) Sint Maarten
13) Chile                             40) St Barthelemy
14) Colombia                          41) St Kitts & Nevis
15) Costa Rica                        42) St Lucia
16) Cuba                              43) St Martin (French part)
17) Curacao                           44) St Pierre & Miquelon
18) Dominica                          45) St Vincent
19) Dominican Republic                46) Suriname
20) Ecuador                           47) Trinidad & Tobago
21) El Salvador                       48) Turks & Caicos Is
22) French Guiana                     49) United States
23) Greenland                         50) Uruguay
24) Grenada                           51) Venezuela
25) Guadeloupe                        52) Virgin Islands (UK)
26) Guatemala                         53) Virgin Islands (US)
27) Guyana
Enter number or control-D to quit ?49
Please select one of the following time zone regions.
1) Eastern Time
2) Eastern Time - Michigan - most locations
3) Eastern Time - Kentucky - Louisville area
4) Eastern Time - Kentucky - Wayne County
5) Eastern Time - Indiana - most locations
6) Eastern Time - Indiana - Daviess, Dubois, \
    Knox & Martin Counties
7) Eastern Time - Indiana - Pulaski County
```

```
8) Eastern Time - Indiana - Crawford County
9) Eastern Time - Indiana - Pike County
10) Eastern Time - Indiana - Switzerland County
11) Central Time
12) Central Time - Indiana - Perry County
13) Central Time - Indiana - Starke County
14) Central Time - Michigan - Dickinson, Gogebic, \
     Iron & Menominee Counties
15) Central Time - North Dakota - Oliver County
16) Central Time - North Dakota - Morton County \
     (except Mandan area)
17) Central Time - North Dakota - Mercer County
18) Mountain Time
19) Mountain Time - south Idaho & east Oregon
20) Mountain Time - Navajo
21) Mountain Standard Time - Arizona
22) Pacific Time
23) Alaska Time
24) Alaska Time - Alaska panhandle
25) Alaska Time - southeast Alaska panhandle
26) Alaska Time - Alaska panhandle neck
27) Alaska Time - west Alaska
28) Aleutian Islands
29) Metlakatla Time - Annette Island
30) Hawaii
Enter number or control-D to quit ?18

The following information has been given:
        United States
        Mountain Time
Therefore TZ='America/Denver' will be used.
Local time is now:     Tue Nov  6 02:43:16 MST 2012.
Universal Time is now: Tue Nov  6 09:43:16 UTC 2012.
Is the above information OK?
1) Yes
2) No
Enter number or control-D to quit ?1
System Time Zone change will take effect at next reboot
```

To revert back to the offset format and verify the configuration:

```
switch admin> tstimezone --old 2

switch admin> tstimezone
Time Zone Hour Offset: 2
Time Zone Minute Offset: 0
```

See Also

date

turboRamTest

Performs a turbo SRAM test of ASIC chips.

Synopsis

```
turboramtest
      [--slot slot]
      [-passcnt count]
```

Description

Use this command to verify the chip SRAM located in the ASIC using the turbo-RAM BIST circuitry. The BIST controller is able to perform the SRAM write and read operation at a much faster rate than the PCI operation.

Notes

Do not abort this test prematurely, using **CTRL-C** or **q** to quit. Doing so may cause the test to report unexpected errors. Errors may vary depending on the hardware platform.

You cannot interrupt the test by pressing the return key (<cr>).

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

This diagnostic cannot be run on an operational switch. You must disable the switch using the **chassisDisable** command before you can run this test. After the test completes, re-enable the switch using the **chassisEnable** command.

Operands

This command has the following optional operands:

--slot *slot*

Specifies the slot number on which the diagnostic operates. All eligible blade ports in the specified slot are tested. This operand is optional. The default value is 0 and operates on fixed port count products.

-passcnt *count*

Specifies the number of times to perform this test. This operand is optional. The default value is 1.

Examples

To run the SRAM test with two passes:

```
switch:admin> turboramtest -passcnt 2
Platform bladeType 154
```

```
Running turboramtest .............

WARNING:
This test should NOT be aborted in the middle. If aborted, current
blade or fixed configuration switch may become unusable.
Reset the blade or the switch to recover.

Running Condor3 turboramtest on slot 0 Condor 0
Condor3 turboramtest on slot 0 condor 0 PASSED

 PASSED.
```

See Also

bladeDisable, bladeEnable, chassisDisable, chassisEnable

upTime

Displays length of time the system has been operational.

Synopsis

```
uptime
```

Description

This command displays the current time, how long the system has been running, how many users are currently logged on, and the system load averages for the past 1, 5, and 15 minutes.

If the uptime is less than 60 seconds, the time is displayed in seconds. For times greater than or equal to 60 seconds, the time is displayed in minutes. The output format adjusts accordingly.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To display the length of time the system has been operational:

```
switch:admin> uptime
12:03am up 4:56, 3 users, load average: 1.17, 1.08, 1.08
```

See Also

date, fastBoot, reboot

uRouteShow

Displays unicast routing information.

Synopsis

urouteshow [*slot/*][*port*] [*domain*]

Description

Use this command to display the unicast routing information for a port, as it is known by the FSPF path selection and routing task. The routing information describes how a frame that is received from a port on the local switch is to be routed to reach a destination switch.

The following information displays:

Local Domain ID

Domain number of local switch.

In Port

Port from which a frame is received. Except for the cases in which you perform a port swap or enable extended-edge PID (PID Format 2) on a switch, the value is equal to the port index field displayed by the **switchShow** command. Refer to *Brocade Fabric OS Administration Guide* for more information regarding the extended edge PID format.

Domain

Destination domain of incoming frame.

Out Port

Port to which the incoming frame is to be forwarded. Except for the cases in which you perform a port swap or enable extended edge PID (PID Format 2) on a switch, the value is equal to the port index field displayed by the **switchShow** command. For port swap operations, the value is equal to the switch port field displayed by the **portSwapShow** command. Refer to *Fabric OS Administrator's Guide* for more information regarding the extended-edge PID format.

Metric

Cost of reaching the destination domain.

Hops

Maximum number of hops required to reach the destination domain. If the number of hops are different for some multiple equal cost paths (to reach the same domain), then it displays the maximum number.

Flags

Indicates route type as either dynamic (D) or static (S). A dynamic route is discovered automatically by the FSPF path selection protocol.

Next (Dom, Port)

Domain and port number of the next hop. These are the domain number and the port number of the switch to which Out Port is connected.

The information provided by this command should match what is provided by **topologyShow**.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

slot

For bladed systems only, specify the slot number of the input port whose routes are displayed, followed by a slash (/).

port

Specify the number of the input port whose routes are to be displayed, relative to its slot for bladed systems. Use **switchShow** to display a list of valid ports. This operand is optional; if omitted, the command displays routing information for all input ports in the switch.

domain

Specify a remote domain in the fabric for which routing information is to be displayed. This operand is optional; if omitted, the routing information for all domains in the fabric is displayed.

Examples

To display the routing information of all the active ports:

```
switch:admin> urouteshow
Local Domain ID: 3
In Port Domain Out Port Metric Hops Flags Next (Dom, Port)
-----------------------------------------------------------
  0       1       11     1000    1    D             1,0

 Type <CR> to continue, Q<CR> to stop:
 11       2        0     1500    2    D             4,0
```

```
Type <CR> to continue, Q<CR> to stop:
           4       0     500    1    D              4,0
16         1      27    1000    1      D            1,1

Type <CR> to continue, Q<CR> to stop:

27         2      16    1500    2      D            4,16
```

To display the routing information of port 11 to domain 4 only:

```
switch:admin> urouteshow 1/11, 4

Local Domain ID: 3

In Port Domain Out Port Metric Hops Flags Next (Dom, Port)
----------- -----------------------------------------------
  11        4      16     500    1    D            4,16
```

See Also

portRouteShow, topologyShow

usbStorage

Manages data files on an attached USB storage device.

Synopsis

usbstorage [**-e** | **--enable**]
usbstorage [**-d** | **--disable**]
usbstorage [**-l** | **--list**]
usbstorage [**-r** | **--remove** *area target*]
usbstorage [**-h** | **--help**]

Description

Use this command to control a USB device attached to the Active CP. When the USB device is enabled, other applications, such as **supportSave**, **firmwareDownload**, or **configDownload**/ **configUpload** can conveniently store and retrieve data from the attached storage device. Refer to the help pages for these commands for specific information on how the USB device is accessed by each application.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

This command is available only on the Active CP.

On the Brocade 7840 and Brocade 7810, the USB may continue blinking even after the USB device is disabled.

Operands

This command has the following operands:

-e | --enable

Enables the USB device. The USB device must be enabled before the list and remove functions are available.

-d | --disable

Disables an enabled USB device. This command prevents access to the device until it is enabled again.

-r| --remove *area target*

Removes a target in a specified application storage area. Valid areas are: *firmware*, *support*, *config*, or *firmwarekey*. A specified *area* must be followed by a *target*. Any existing file in a given application directory can be specified as a target. This command removes all data associated with the specified target.

-l | --list

> Lists the content of the USB device up to two levels down from the root directory.

-h | --help

> Displays the command usage.

Examples

> To enable an attached USB device:
>
> ```
> switch:admin> usbstorage -e
> USB storage enabled
> ```
>
> To list the contents of the attached USB device:
>
> ```
> switch:admin> usbstorage -l
>
> firmwarekey\         0B        2010 Aug 15 15:13
> support\             106MB     2010 Aug 24 05:36
>     support1034\     105MB     2010 Aug 23 06:11
> config\              0B        2010 Aug 15 15:13
> firmware\            380MB     2010 Aug 15 15:13
>     FW_v6.4.0\       380MB     2010 Aug 15 15:13
>           Available space on usbstorage 74%
> ```
>
> To remove a firmware target from the firmware application area:
>
> ```
> switch:admin> usbstorage -r firmware FW_v6.0.0
> ```
>
> To disable an attached USB device:
>
> ```
> switch:admin> usbstorage -d
> USB storage disable
> ```

See Also

> supportSave, firmwareDownload, configUpload, configDownload

userConfig

Manages user accounts.

Synopsis

```
userconfig
userconfig --show [username | -a | -r rolename]
userconfig --showlf -l LF_ID | -c
userconfig --add username -r role -l LF_ID_list [-h LF_ID
      [-c chassis_role] [-d description] [-p password]
      [-at | -access-time start_time-end_time] [-x]
userconfig --change username [-r role] [-h LF_ID]
      [-l LF_ID_list] [-c chassis_role] [-d description] [-x]
      [-e yes | no] [-u]
userconfig --addlf username [-h LF_ID]
      [-r role -l LF_ID_list] [-c chassis_role]
userconfig --deletelf username [-h LF_ID][-l LF_ID_list] [-c]
userconfig --delete username
userconfig --help
```

Description

Use this command to manage user accounts on a switch. In a Virtual Fabric-enabled environment, you can configure the account's username, its role, and the logical fabrics that the account may access. An account can have different roles for different Logical Fabrics. An account can access multiple Logical Fabrics, but only one Logical Fabric at a time.

When executed without operands, this command displays the usage. The logical fabric command options are displayed only if Logical Fabrics are enabled on the switch.

You can execute the **userConfig** command on any switch. When the command completes, account information is saved persistently. On platforms supporting multiple switch domains, account information is saved only to the switch domain, in which the command was executed.

Use the **distribute** command to distribute the account database manually to other switches in the fabric. Target switches must be configured to accept the database. Accounts that are not consistent with the distributed database are overwritten. Account recovery from backup or access to backup data is not supported..

This command supports all user-defined roles in addition to the default roles provided with Fabric OS. To display the user-defined roles with their associated access permissions, use the **roleConfig --show -all** command. To display all roles, including the default roles, use the **roleConfig --show -all -default** command.

In a Logical Fabric environment, you can additionally define access to chassis-level commands. An account can have one role in the Logical Fabric, and another role regarding chassis commands.

An asterisk (*) next to the account name in the **userConfig --show** and **userConfig -a** output indicates that the password for that user account is still at the default value.

Notes

The **userConfig** command operates on the switch-local user database only, regardless of whether the switch is configured to use RADIUS or LDAP authentication.

The account database supports a maximum of 256 customer created accounts.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--show

Displays user account information. Only accounts with access permissions compatible with the SecurityAdmin and Admin roles can show information about accounts other than the current login account. The following operands are optional:

username

Specifies the account login name. When no operand is specified, the command displays the current account information.

-a

Displays information about all accounts.

-r *rolename*

Displays information about all accounts with the specified role.

--showlf

Displays Logical Fabric permissions in an Logical Fabrics-enabled environment. Only users with access permissions compatible with the SecurityAdmin or Admin role may execute this command. An operand is required with this command. The following operands are mutually exclusive:

-l *LF_ID_list*

For each Logical Fabric in the *LF_ID_list*, this option displays a list of users that include that Logical Fabric in their Logical Fabrics permissions. Specify a range (1-5), or a list of Logical Fabric IDs separated by a comma (1,2,3), or a combination of both (1-5,7). Only users with access permissions compatible with the SecurityAdmin or Admin role may execute this command.

-c

Displays a list of users who have permission to execute chassis commands.

--add | --change

Creates a new user account or modifies an existing user account. The following restrictions apply when you create or modify a user account:

- You cannot change the role, the Logical Fabric permissions, the home Logical Fabric of any default account.

- You cannot change the role, the Logical Fabric permissions, or the description of accounts at the same or a higher authorization level.

- You cannot change the role, the Logical Fabric permissions, or the home Logical Fabric of your own account.

- No account can disable itself.

- Logical Fabric permissions must be a subset of the respective Logical Fabric permissions of the account that creates or modifies a user account.

- In an Logical Fabric-enabled environment, you can change the role associated with existing Logical Fabrics but you cannot add new Logical Fabrics or delete any existing Logical Fabrics.

- You cannot use **change** if the default FID was modified after user creation. **--addlf** must be used to add newly created Logical Fabrics to user.

- The account name cannot be the same an existing user account, a default role, a user-defined role, or a system role. System roles are used by internal switch processes and include the following: bin, daemon, sys, adm, tty, disk, lp, mem, kmem, wheel, mail, news, uucp, man, dip, ftp, nobody, users, floppy, console, utmp, and slocate. If the specified username already exists, this command fails with an appropriate message. Choose a different username and reissue the command.

The following operands are supported with the **--add** and **--change** option.

username

Specifies the login name of the account to be created or modified. Enter a valid login name to modify an existing account. For new accounts, the name must be unique and must begin with an alphabetic character. User names are case-sensitive and can contain up to 32 alphanumeric characters, including periods (.) and underscore (_) characters.

-r role

In a Logical Fabric-enabled environment, this operand specifies the account's role for all Logical Fabrics provided with the Logical Fabric list. When you create a user account in a Logical Fabric-enabled environment, you can specify only one role for the user. This role is associated with each of the Logical Fabric IDs in the specified LF_ID_list. Once the account is created, you can use the **--addlf** option to create another list of Logical Fabric IDs with its own set of associated roles.

You can assign any role but not higher than admin to the account, user-defined, or default. Use the **roleconfig --show** command for a listing of valid roles. This operand is required with the **--add** option; it is optional with the **--change** option.

-h *LF_ID*

> Specifies the home Logical Fabric depending on the environment. This operand is optional. If no Logical Fabric is specified with the **--add** option, the system assigns the lowest numbered Logical Fabric that the user is authorized to access.

-l *LF_ID_list*

> Specifies the Virtual Fabrics that the user is authorized to access. The Logical Fabrics in LF_ID_list and the existing Logical Fabric permissions for username must be a subset of the Logical Fabric permissions of the account that executes this command. This operand is required with the **--add** option. It is optional with the **--change** option.

-c *chassis_role*

> Specifies the account's access permissions at the chassis level. The chassis role allows the user to execute chassis-related commands in a Logical Fabric-enabled environment. To assign the chassis role to an account, the executing account must have chassis-level permissions. Valid chassis roles include the default and user-defined roles but not higher than admin to the account. Use the **roleconfig --show** command for a listing of valid roles.

-d *description*

> Provides a description for the new account. This operand is optional. The maximum length is 32 printable ASCII characters. Some characters that are interpreted by the shell (", ', ! etc.) require a preceding escape character (\). To include spaces, place the description in double quotation marks. Colons are not permitted.

-at | -access-time *start_time-end_time*

> Specifies the time range the users can access the switch through Telnet, SSH, console or Web. Outside the configured time, access will be denied and the existing sessions for the user will be terminated on the configured *end_time*. The *start_time* and *end_time* must be specified in the *hh:mm* 24-hour clock format. The firmwaredownload will continue even when the user gets logged out upon expiry of time limit.

> If *end_time* is less than the *start_time*, then it is considered as next day end time. For example, the command **-access-time 23:20-07:20** represents time interval in between two days.

-x

> Optionally specifies an expired password that must be changed the first time the user logs into a new or modified account. This command also prompts for the existing password.

> The following optional operand is available only with the **--add** option:

-p *password*

> Specifies a password for the account. This operand is optional; if omitted, the command prompts for an initial password for the account. The password must satisfy all currently

enforced password rules. By default the password is created with the configured expiration period.

The following optional operands are available only with the **--change** option:

-e yes | no

Enables or disables an account. Specify "yes" to enable or "no" to disable an account. Once an account is disabled, the CLI sessions associated with the account are terminated.

-u

Unlocks the specified user account. User accounts can get locked after several attempts to log in with an invalid password. Refer to the **passwdCfg** help page for more information.

--addlf | --deletelf

Adds Logical Fabric or chassis permissions to a user account or deletes Logical Fabric or chassis permission from a user account. The following operands are supported:

username

Specifies the account login name.

-h _LF_ID_

Specifies the account's home Logical Fabric. This operand is optional.

- If a home Logical Fabric is specified with the **--addlf** option, the home Logical Fabric must be one of the Logical Fabrics in _LF_ID_list_. If a home Logical Fabric is not specified and the account did not previously have a home Logical Fabric, the home Logical Fabric is set to the lowest numbered Logical Fabric in the user's Logical Fabric permissions.

- If a home Logical Fabric is specified with the **--deletelf** option, the home Logical Fabric must be one of the Logical Fabrics in the Logical Fabric permissions remaining after the Logical Fabrics specified in _LF_ID_list_ have been removed. If a home Logical Fabric is not specified, the current home Logical Fabric remains unchanged, if it is still in the user's Logical Fabric permissions. If a home Logical Fabric is not specified and the current home Logical Fabric is deleted, the new home Logical Fabric is set to the lowest numbered Logical Fabric in the user's Logical Fabric permissions.

The account's existing Logical Fabric permission and the _LF_ID_list_ must be a subset of the Logical Fabric permissions of the account executing this command.

-l _LF_ID_list_

Specifies the logical fabric IDs to be added or deleted. Specify a range (1-5) or a list of Logical Fabric IDs separated by comma (1,2,3), or a combination of both (1-5,7).

-r *role*

Specifies the role associated with the Logical Fabric ID list given in this command. This operand is required when you specify an *LF_ID_list* operand.

-c [*chassis_role*]

Specifies the account's access permissions regarding chassis-level commands. To remove an account's chassis permissions, specify **-c** only. To add chassis permissions, specify a chassis role with the -**c** option.

--delete *username*

Deletes the specified account from the switch. This command prompts for confirmation. Once an account is deleted, the CLI sessions associated with the account are terminated.

The following restrictions apply when you delete an account:

- •   You cannot delete a default account.

- •   You cannot delete your own account.

LF_ID list and associated Logical Fabric permissions for *username* must be a subset of the Logical Fabric permissions of the account that executes the **userConfig --delete** command.

--help

Displays the command usage. In a Logical Fabric-enabled environment, options specific to Logical Fabrics are displayed.

Examples

To create a new account named "test" with admin role and admin chassis permissions in the Logical Fabric member list 1-10:

```
switch:admin> userconfig --add test -l 1-10  \
     -r admin -c admin
Setting initial password for test
Enter new password:
Re-type new password:
Account test has been successfully added.
```

To display current account information:

```
switch:admin> userconfig --show test
Account name: test
Role: admin
Description:
Enabled: Yes
Password Last Change Date: Sat Jun 14 2008
Password Expiration Date: Not Applicable
Locked: No
```

```
RoleLFMaps: admin: 1-10 chassis
Chassis Role: admin
Home Context: 1
```

To grant user access permissions to the test account for the Virtual Fabrics 11-15:

```
switch:admin> userconfig --addlf test -r user -l 11-15
New LFs/Chassis role for account test has been \
   successfully added.
```

To change the test account's access permissions for the Logical l Fabrics 5 and 6 to ZoneAdmin and the chassis permission to user:

```
switch:admin> userconfig --change test -r zoneadmin  \
     -l 1-5 -c user -h 4
Broadcast message from root (ttyS0) Sat Jun 14 01:05:28 2008...
Security Policy, Password or Account Attribute Change: \
   test will be logged out
```

To display the test account information:

```
switch:admin> userconfig --show test
Account name: test
Role: zoneadmin
Description:
Enabled: Yes
Password Last Change Date: Sat Jun 14 2008
Password Expiration Date: Not Applicable
Locked: No
RoleLFMaps: zoneadmin: 1-5 admin: 6-10 user: 11-15 chassis
Chassis Role: user
Home Context: 4
```

To remove chassis permissions from the test account for the Logical Fabrics 1-3.

```
switch:admin> userconfig --deletelf test -l 1-3 -c
 Broadcast message from root (ttyS0) Sat \
    Jun 14 01:10:02 2008...

Security Policy, Password or Account Attribute Change: \
   test will  be logged out
LFs/chassis role for account test has been successfully\
    deleted.
```

To display information for all accounts with admin privileges:

```
switch:admin> userconfig --show -r admin

Account name: admin
Description: Administrator
Enabled: Yes
Password Last Change Date: Unknown
Password Expiration Date: Not Applicable
Locked: No
Home LF Role: admin
Role-LF List: admin: 1-128
Chassis Role: admin
Home LF: 128
```

```
Account name: testls1
Description:
Enabled: Yes
Password Last Change Date: Sun Oct  5 2025
Password Expiration Date: Not Applicable
Locked: No
Home LF Role: admin
Role-LF List: admin: 1
No chassis permission
Home LF: 1
```

See Also

roleConfig

version

Displays firmware version information.

Synopsis

```
version
```

Description

Use this command to display firmware version information and build dates.

The command output includes the following:

Kernel

The version of switch kernel operating system.

Fabric OS

The version of switch Fabric OS.

Made on

The build date of firmware running in switch.

Flash

The build date of firmware stored in flash proms.

BootProm

The version of the firmware stored in the boot PROM

Usually the Made on and Flash dates are the same, because the switch starts running flash firmware at power-on. However, in the time period between **firmwareDownload** and the next **reboot**, the dates can differ.

Operands

None

Examples

To display the firmware version information in a switch:

```
switch:admin> version
Kernel:     2.6.34.6
Fabric OS:  v8.2.0a
Made on:    Tue Jan 9 01:53:49 2018
Flash:      Wed Jan 10 06:37:24 2018
BootProm:   3.0.20
```

See Also

firmwareDownload, reboot

wwn

Displays the world wide name (WWN) and factory serial number of the switch or chassis.

Synopsis

wwn [**-sn**]

Description

Use this command to display the WWN associated with a switch or chassis and to display the factory serial number. The WWN is a 64-bit number that has eight colon-separated fields each consisting of one or two hexadecimal digits between 0 and ff. The WWN is a factory-set parameter that cannot be changed by the end user. The WWN is used as the license ID in many cases, but the only official string to be used for requesting licenses is the **licenseidShow** output. Alternately, use **switchShow** to display the WWN.

In addition to the WWN, all switches have a unique 24-bit Fibre Channel address that is used for communicating with the switch. Use **fabricShow** to display the FC address in addition to the WWN.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

-sn

On enterprise-class platforms, this operand displays the chassis factory serial number following the WWN. On standalone platforms, it displays the factory serial number. This operand is optional; if omitted, this command displays only the WWN for the switch or chassis.

Examples

To display the WWN on a Brocade DCX-4S:

```
switch:admin> wwn
10:00:00:05:1e:7a:7a:00
```

To display the WWN and chassis factory serial number:

```
switch:admin> wwn -sn

WWN: 10:00:00:05:1e:7a:7a:00
SN:  ANP0645D05B

switch:admin> chassisshow | grep ANP0645D05B
```

```
Chassis Factory Serial Num: ANP0645D05B
switch:admin>
```

To display the license ID:

```
switch:admin> licenseidshow
10:00:00:05:1e:7a:7a:00
```

To display the WWN and the Fibre Channel address:

```
switch:admin> fabricshow
Switch ID    Worldwide Name       Enet IP Addr FC IP Addr Name
-------------------------------------------------------------
1:fffc01 10:00:00:05:1e:7a:7a:00 10.32.39.25  0.0.0.0 "sw03"
2:fffc02 10:00:00:05:1e:b3:00:9e 10.32.39.34  0.0.0.0 "ras39"
3:fffc03 10:00:00:05:1e:93:c4:00 10.32.39.20  0.0.0.0 "sw5"
4:fffc04 10:00:00:05:1e:55:5c:69 10.32.39.59  0.0.0.0 >"sp39"
```

To display the WWN on a Brocade 5100:

```
switch:admin> wwn
10:00:00:05:1e:7a:7a:00
```

To display the WWN and factory serial number:

```
switch:admin> wwn -sn

WWN: 10:00:00:05:1e:82:3c:2a
SN:  ALM0602E003

switch:admin> chassisshow | grep  ALM0602E003
Factory Serial Num:     ALM0602E003
```

See Also

chassisShow, fabricShow, licenseIdShow, switchShow

wwnAddress

Binds an FC Port ID to a device WWN.

Synopsis

```
wwnaddress --bind [WWN] [PID]
wwnaddress --unbind [WWN]
wwnaddress --show
wwnaddress --findPID [WWN]
wwnaddress --help
```

Description

Use this command to manage address assignments for a given device world wide name. The allocation of a PID to a specified device WWN supports the persistence of the PID based on the WWN of the device to which the PID is bound. If the PID is not bound to a device WWN, the device can get the same or a different PID irrespective of which port it logs in to a given switch partition.

This command fails under any of the following conditions:

- The PID is currently bound to another port through port address binding. Use **portaddress --unbind** to free up the PID.

- The WWN is already bound with a different PID, or the PID is bound to another WWN. Use **wwnaddress --unbind** to remove the PID-WWN binding.

- There is no space left in the WWN-PID table for an additional entry. Use **wwnaddress -- unbind** to free up space in the table.

- If any N_Port ID Virtualization (NPIV) device have static PIDs configured and the acquired area is not the same as the one being requested, the FDISC coming from that device is rejected and the error is noted in the RASLog.

The command provides a **--show** option that displays the currently bound address for all WWNs. Alternately, you can use the **--findPID** option to display the PID currently bound to a specified WWN.

Notes

Dynamic Area Mode and WWN-Based persistent PID must be enabled on the switch before you can assign an address with this command. Refer to **configure** for more information.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operands:

--bind

> Assigns the lower two bytes of the Fibre Channel address to the specified WWN. This operand is not supported on the Brocade Analytics Monitoring Platform.

WWN

> Specifies the WWN for the device to which the PID should be assigned.

PID

> Specifies the PID (the lower 16 bits of the address excluding the domain part) in hexadecimal format to be bound to the device WWN. Note that only the upper 10 bits of the PID can be used for a unique route. Therefore, not all addresses in the 16-bit range are available.

--unbind

> Removes the WWN-PID binding corresponding to the specified device WWN. This operand is not supported on the Brocade Analytics Monitoring Platform.

WWN

> Specifies the WWN for the device from which to remove the PID binding.

--show

> Displays all WWN-PID entries currently present in the partition.

--findPID

> Displays the PID currently bound to the specified device WWN. This operand is not supported on the Brocade Analytics Monitoring Platform.

WWN

> Specifies the device WWN.

--help

> Displays the command usage.

Examples

> To bind a 16-bit address to a device WWN:

```
switch:admin> wwnaddress --bind \
   10:00:00:06:2b:0f:76:5f 0x9000
```

> To unbind a given address from a WWN:

```
switch:admin> wwnaddress --unbind \
   10:00:00:06:2b:0f:76:5f
```

To display all WWN address bindings on the current partition:

```
switch:admin> wwnaddress --show
#    WWN                      Area   Age Flag
==========================================
1)  10:00:00:06:2b:0f:71:0c  0x405  53  0x12
2)  10:00:00:05:1e:5e:2c:11  0x9900 101 0x21
3)  10:00:00:06:2b:0f:71:0d  0x503  37  0x12
4)  10:00:00:06:2b:0f:71:0e  0x304  43  0x12
5)  10:00:00:06:2b:0f:71:0f  0x303  38  0x12
6)  10:00:00:06:2b:0f:70:14  0x401  29  0x12
7)  10:00:00:06:2b:0f:70:15  0x505  46  0x12
8)  10:00:00:06:2b:0f:70:16  0x402  33  0x12
9)  10:00:00:06:2b:0f:70:17  0x406  47  0x12
10) 10:00:00:06:2b:0f:72:20  0x403  30  0x12
11) 10:00:00:06:2b:0f:72:21  0x501  36  0x12
12) 10:00:00:06:2b:0f:72:23  0x502  34  0x12
13) 10:00:00:06:2b:0f:6e:30  0x301  35  0x12
14) 10:00:00:06:2b:0f:6e:31  0x102  42  0x12
15) 10:00:00:06:2b:0f:6e:32  0x302  39  0x12
16) 10:00:00:06:2b:0f:6e:33  0x504  45  0x12
17) 10:00:00:06:2b:0f:76:5e  0x404  101 0x12
18) 10:00:00:06:2b:0f:76:5f  0x101  41  0x12
19) 20:20:00:05:1e:0b:61:cc  0x400  28  0x22
20) 20:21:00:05:1e:0b:61:cc  0x500  31  0x22
21) 20:22:00:05:1e:0b:61:cc  0x300  32  0x22
22) 20:23:00:05:1e:0b:61:cc  0x100  40  0x22
23) 10:00:00:06:2b:0f:6d:ee  0x305  50  0x12
24) 10:00:00:06:2b:0f:6d:ef  0x103  49  0x12
```

To display the WWW address binding for device 20:22:00:05:1e:0b:61:cc:

```
switch:admin> wwnaddress --findPid 20:22:00:05:1e:0b:61:cc
WWN                      PID
==============================
 20:22:00:05:1e:0b:61:cc  0x300
```

See Also

portAddress

wwnRecover

Utility to recover mismatch of data in WWN card. Errors may be due to corruption, defect, or other causes.

Synopsis

```
wwnrecover
```

Description

Use this command to recover one or both WWN cards from errors detected by the audit routine. The audit routine is triggered upon for first one hour after the boot up of the system, periodically every 24 hours thereafter, and upon detection of insertion of either of the WWN card. The audit routine performs consistency checks on each of the following sections of data maintained in the WWN cards for use by the corresponding system component:

- License ID data sections within the same WWN card

- IP address data sections across the two WWN cards

- DCE data sections across the two WWN cards

- License ID data sections across the two WWN cards

- Chassis configuration data sections across the two WWN cards

- Chassis serial and part number sections across the two WWN cards

- Registered Organization Name (RON) data sections across the two WWN cards

Error resulting from a mismatch in data may be encountered on one or more sections. The recovery mechanism may vary depending on the nature of the error encountered and is also based on the data section. The **wwnrecover** operation presents a summary of all the errors detected and prompts you through the recovery process interactively for all data sections. For each data section, you will be prompted with an option to recover WWN1 card data from WWN2 card data or vice-versa or to exit without recovering the corresponding data section. For example, if WWN2 is replaced by a minimally programmed factory replacement card, WWN recovery recommends to recover most of the data sections on WWN2 from WWN1. However, in a rare case where a bit corruption occurs in one data section on one card and another bit corruption in a different data section on the other card, the recovery for each of the affected data sections will be different. WWN recovery is not possible if the license ID differs on both WWN cards.

In the event of any of the following issues with WWN card operations, the system logs the corresponding RASlog message:

- Mismatch between the two WWN cards detected by the audit routine (EM-1220 message).

- Insertion of either of the two WWN cards detected by the system (EM-1221 message).

- Access failure by the audit routine during read/write to either of the WWN cards (EM-1222 message).

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To perform WWN recovery (the following example shows that no WWN errors were detected):

```
switch:admin> wwnrecover
No WWN Error is detected. Exiting.
```

To perform WWN recovery (the following example shows the WWN errors and the recovery process):

```
switch:admin> wwnrecover
WWN Discrepancies (Error:64) detected.

Please attempt recovery of these errors (where possible)
by navigating to the required recovery selection
from the following WWN Recovery Options Menu.

Please note that in the event of a mismatch in the LicenseIds,
between WWN1 and WWN2 cards, wwn recovery may not be possible.
In this case a factory programmed card with a matching LicenseId
must be used, as a replacement card, to complete the wwn recovery.

WWN 1 and WWN 2 Non-Critical Seeprom data is mismatched.

      WWN Non-Critical Seeprom Problem Details

WWN Seeprom Chassis Serial Number Mismatch.
WWN 1 Serial Number: BADSerial
WWN 2 Serial Number: GOODSerial

          WWN Recovery Options

0. Exit

3. Recover WWN 2 from WWN 1

4. Recover WWN 1 from WWN 2

Enter Selection > 4
You have opted to recover WWN1 from WWN 2.
Are you sure? Please Confirm: (yes, y, no, n): [no] y
Recovering Serial Number...
Serial Number Recovery completed.
```

```
WWN Seeprom Chassis Part Number Mismatch.
WWN 1 part Number: GoodPARTNO
WWN 2 Part Number: BadPARTNo

               WWN Recovery Options

0. Exit

3. Recover WWN 2 from WWN 1

4. Recover WWN 1 from WWN 2

Enter Selection > 3
You have opted to recover WWN2 from WWN1.
Are you sure? Please Confirm: (yes, y, no, n): [no] y
Recovering Part Number...
Part Number Recovery completed.
```

See Also

licenseIdShow, wwn

zone

Performs specific zone operations, manages Traffic Isolation (TI) Zones, and Frame Redirect (RD) Zones.

Synopsis

```
zone --help
zone --copy source_zone_object
     [dest_zone_object][-f]
zone --expunge "zone_object"
zone --validate [-verbose] [[-f|] [-m mode] ["zone_object"]]]
     [[-i] [pattern]]
zone --create -t objecttype [-o optlist] name -p portlist
zone --add [-o optlist] name -p portlist
zone --remove name -p portlist
zone --delete name
zone --activate name
zone --deactivate name
zone --show [-ic] [name][ -ascending]
zone --showTIerrors
zone --rdcreate [host_wwn] [target_wwn]
     [vi_wwn] [vt_wwn] [policy] [FCR | noFCR]
zone --rddelete name
zone --showTItrunkerrors
```

Description

The **zone** command supports three types of operations: specific zone operations, management of Traffic Isolation Zones, and management of Frame Redirect (RD) Zones.

1. Manage Zoning Operations

Use the **--copy**, **--expunge**, and **--validate** options to perform specific zoning operations. These commands follow a batched-transaction model.

2. Manage Traffic Isolation (TI) Zones

Use the **--create**, **--add**, **--remove**, **--delete**, **--activate**, **--deactivate**, and **--show** options to manage Traffic Isolation Zones.

TI zones control the flow of interswitch traffic by provisioning certain E_Ports to carry only traffic flowing from a specific set of source ports. The provision (a.k.a TI Zone) is part of the defined zone configuration and does not appear in the effective zone configuration. A Maximum of 255 TI Zones can be created in one fabric.

TI zones over FCR provide the ability to lock down a request and corresponding response to the same VE_Port tunnel for a given pair of devices in two separate fabrics. TI over FCR has two working parts:

- TI within edge fabric routes traffic between a real device and a Proxy device to a specified EX_Port.

- TI within backbone fabric locks down the route within the backbone fabric based on EX_Ports and devices involved.

Use the **--showTIerrors** option to generate a report of potential routing problems in the local Domain. If the command detects errors, it outputs the ID of the current domain, and for each record, it displays the following information:

Error Type

> Error or Warning.

Affected Remote Domain

> Domain where the traffic drop is likely to be happening.

Affected Local Port

> Device port shared by the TI zones.

Affected TI Zones

> Lists the names of the TI zones implicated in the problem.

Affected Remote Ports

> Remote ports that are affected by the problem in the TI Zones.

Using TI zones in logical fabrics has several restrictions. TI zones created in logical fabrics cannot include logical interswitch links (LISLs); only physical port numbers can be included. TI zones cannot use the failover disabled option in Logical fabrics that have LISLs, and TI zones cannot use the failover disabled option in Base Fabrics. For more information, refer to the *Brocade Fabric OS Administration Guide*.

3. Manage Frame Redirect (RD) Zones

Use the **--rdcreate** and **--rddelete** options to manage Frame Redirect Zones. RD zones allow frames to be redirected to devices that can perform additional processing on these frames (for example, encryption). The feature uses a combination of RD zones and Name Server changes to map real device world wide names (WWNs) to virtual port IDs (PIDs.) This allows redirecting a flow between a host and target to a device that can perform its functionality without reconfiguring the host and target.

The RD Zone is part of the defined zone configuration and does not appear in the effective zone configuration. Use **cfgSave** to save the RD zone changes to the defined configuration. Use **cfgShow** to display the RD zones.

When you create the first RD zone, two additional zone objects are created automatically: A base zone "red_____base" and a zone configuration "r_e_d_i_r_c__fg". These additional zone objects are required by the implementation. These zone objects must remain on the switch as long as other redirect zones are defined. Do not remove these objects, unless redirection is no longer required and no other redirect zones exist.

Use **zone --rddelete** to remove the base RD zone, "red_____base", if it is the last remaining RD zone in the RD zone configuration, "r_e_d_i_r_c__fg." When the base zone is removed, the RD zone configuration is removed as well.

Notes

Device ports are allowed to be part of several TI zones to support enhanced TI zone deployment in FICON environments.

You cannot swap E_Ports that are configured as part of a TI zone. The TI zone information is lost when you use **portSwap** to swap the E_Ports. To work around this issue, reconfigure your TI zones rather than swapping the E_Ports.

The current zone commands, **zoneCreate**, **aliCreate**, **cfgCreate**, etc., cannot be used to manage special zones, such as TI zones or RD zones.

Peer Zones are not allowed to be edited using this command.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command takes as an operand an action and its associated arguments. When executed without operands, the command displays the usage.

--help

Displays the command usage.

1. Commands for performing specific zone operations

--copy

Copies a specified zone object or all zone objects. The current transaction buffer is used for this operation. The following operands are optional:

source_zone_object

Specifies the zone object. The zone object can be a zone configuration, a zone alias, or several zones. If a source zone object is not specified, all zone configurations are copied over.

dest_zone_object

Identifies the destination zone object. If *dest_zone_object* is not specified, *source_-zone_object* is copied over with the same name. If the destination zone object is not already present, one is created (with type as *source_zone_object*).

-f

Overwrites existing zone object without confirmation.

--expunge

Removes all references to the specified zone object and then deletes the zone object. The command displays the list of zone objects to be deleted and prompts for confirmation before deleting the zone objects. The removal of zone object references can trigger the removal of zones not specified in the command. For example, removing the last zone

member from a zone deletes the zone, and may trigger a recursive deletion of other zones. The following operand is required:

"*zone_object*"

Specifies a zone object. A zone object can be a zone member, zone alias, or a zone. The zone object must be enclosed in double quotation marks.

--validate

Lists all zone members that are not part of the current zone enforcement table.

The following operands are optional:

-verbose

Displays the property members of peer zones along with the default **zone --validate** command output.

-f

Specifies that zone members that are not enforceable should be expunged in the transaction buffer. This pruning operation affects both the transaction buffer and the defined buffer. You cannot specify a mode or a zone object together with the -f option.

mode

Specifies the zone database location. This operand is optional. If no mode option is specified, the validated output of all the three buffers is displayed. Supported mode flag values include the following:

0

Uses the zone database from the current transaction buffer.

1

Uses the zone database stored in persistent storage.

2

Uses the currently enforced zone database.

"*zone_object*"

Specifies a zone object. A zone object can be a zone member, a zone alias, or a zone.

-i

Lists all zone members for a given pattern without case distinction.

pattern

>   A POSIX-style regular expression used to match zone members. This operand is optional. Patterns can contain:

•   A question mark (?) to match any single character.

•   An asterisk (*) to match any string of characters.

•   A range of characters to match any character within the range: for example, [0-9] or [a-f].

2. Creating and managing TI Zones

Use these commands to create and manage TI Zones.

--create

>   Creates a TI Zone with specified options and port list.

--add

>   Adds port list members and the failover option to existing TI zones.

--remove

>   Removes port list members from existing zones. Removal of the last member from an active TI zone generates a warning. If the last member of a TI zone is removed, the TI zone name is removed from the defined TI zone list.

>   The following operands are supported:

-t *objecttype*

>   Specifies the zone object type. This operand is supported only with the **--create** option. To create a TI zone, the value is **ti**.

-o *optlist*

>   Specifies list of options to control activation, deactivation, and failover mode. If this option is not specified the zone is created, by default, with failover enabled, and the zone will be activated. This operand is supported only with the **--create** and **--add** options.

>   Valid values for *optlist* include the following:

a

>   Activates the specified zone.

d

>   Deactivates the specified zone.

n

> Disables failover mode. In non-failover mode, when the last interswitch link (ISL) of a TI Zone goes offline and there is an alternative ISL, the alternative ISL is not used and the switch generates a state change notification (SCN) or a registered state change notification (RSCN) to indicate that no ISL is available. When the ISL of the TI Zone comes online again, the route is set up again and the switch generates another SCN or RSCN. TI zones with no-failover option are not supported in logical fabrics. TI zones defined in the Base Fabric for logical fabric traffic need to allow failover.

f

> Enables failover mode. In failover mode, when the last ISL of a TI Zone goes offline and there is an alternative ISL, the alternative ISL is used and the switch does not generate any SCN or RSCN messages. If the ISL of that TI Zone comes online again, traffic is rerouted immediately to the original ISL.

name

> Specifies the name of the zone to be created, added, or deleted.

> When you use the dollar sign ($) in the name, it must be prefixed with a backslash (\) while using it in the command prompt.

-p *portlist*

> Specifies the lists of ports to be included, added or removed from a TI zone. The syntax for *portlist* is "D,I" (Domain, Index). The port list must be enclosed in double quotation marks. List members must be separated by semicolons, followed by a space. When you create TI zones over FCR, for a TI within an Edge fabric use "-1"in "I" (of "D,I") in to denote Front and Translate phantom in the E_Port list. When creating a TI zone within the Backbone fabric specify "Port WWN" in *portlist* to indicate devices talking across fabrics.

--activate *name*

> Activates the specified TI zones. If more than one zone is specified, the list of zone names must be enclosed in double quotation marks; zone names must be separated by semicolons.

--deactivate *name*

> Deactivates the specified TI zones. If more than one zone is specified, the list of zone names must be enclosed in double quotation marks; zone names must be separated by semicolons.

--delete *name*

> Deletes TI zones from the defined TI zone lists. This command prompts for confirmation.

--show [*name*]

> Displays zone name, port lists, failover option, configured status and, the active status for
> the specified zones. The configured status reflects the latest change that may or may not
> have been activated. The active status reflects the state that is activated by **cfgEnable**.
> Without any specified name, this command displays all TI zones in the defined configu-
> ration. The following operands are optional:

-ic

> Displays all TI zone configurations for a given zone name without case distinction.

-ascending

> Displays the TI zone members in ascending order.

--showTIerrors

> Analyzes real and potential routing problems with the activated TI zoning set and prints
> a report. This command must be executed in the local domain and analyzes only that
> domain.

--showTItrunkerrors

> Displays details of the trunk members present in the TI zone and those not present in the
> TI zone.

3. Creating and managing RD Zones

--rdcreate

> Creates a RD Zone for the specified members. The following operands are required:

host_wwn

> Specifies the port world wide name of the host.

target_wwn

> Specifies the port world wide name of the target.

vi_wwn

> Specifies the port world wide name of the virtual initiator (VI).

vt_wwn

> Specifies the port world wide name of the virtual target (VT).

policy **restartable | nonrestartable**

> Specifies the policy as either **restartable** or **nonrestartable**. A restartable policy causes
> traffic flow to revert to the physical host and target configuration in the event the virtual

device should fail. When the policy is specified as nonrestricted and one of the virtual devices goes offline, the physical devices are considered offline and no traffic is allowed between the original host and target.

FCR | noFCR

Indicates whether or not this RD zone should function across a Fibre Channel router (FCR). Specify **FCR** to support FCR. Specify **noFCR** if you do not wish to support FCR.

--rddelete *name*

Deletes the RD Zone specified by *name*. RD Zones are unique in that the zone name is not user-defined. It is derived based on members and the specified configuration. Use **cdfgShow** to display currently implemented RD zone by name.

Examples

1. Specific zone operation commands

The following example shows a scenario of an invalid configuration. If you attempt to create a zone z10 with an alias a10, then create a zone with name a10, z10 expects a10 to be an alias and results in an invalid configuration.

To validate all zones in the currently enforced zone database:

```
switch:admin> zonecreate z10,a10

switch:admin> zonecreate a10, 1,2

switch:admin> zone --validate
Defined configuration:
zone: a10 1,2*
zone: z10 a10~

Effective configuration:
No Effective configuration: (No Access)
----------------------------------
~ - Invalid configuration
* - Member does not exist
# - Invalid usage of broadcast zone
```

The reason for not being in the current enforcement table could be The device is not online.

To delete all references associated with zone member 100,5:

```
switch:admin> zone --expunge"100,5"
You are about to expunge one configuration
or member. This action could result in removing
many zoning configurations recursively.
[Removing the last member of a configuration
   removes the configuration.]
    Do you want to expunge the member?
   (yes, y, no, n): [no] yes
```

To validate all zones in the zone database in the current transaction buffer:

```
switch:admin> zone --validate -m 0
Defined configuration:
 cfg:   t_r_a_f_f_i_c_i_s_o_c__fg
                bluezone; greenzone
 cfg:   ticonfig
                regzone
 zone:  bluezone
                1,1*; 1,2*
 zone:  greenzone 1,1*; 20:01:00:05:1e:01:23:e0*
 zone:  regzone 1,4*; 1,5*
 zone:  t_r_a_f_f_i_c_i_s_o_prop__zn
                1,3*; 2,3*
 -----------------------------------
 ~ - Invalid configuration
 * - Member does not exist
 # - Invalid usage of broadcast zone
```

To validate all zones in the zone database in the persistent storage (defined configuration):

```
switch:admin> zone --validate -m 1
Defined configuration:
 cfg:   t_r_a_f_f_i_c_i_s_o_c__fg
                bluezone; greenzone
 cfg:   ticonfig
                regzone
 zone:  bluezone
                1,1*; 1,2*
 zone:  greenzone 1,1*; 20:01:00:05:1e:01:23:e0*
 zone:  regzone 1,4*; 1,5*
 zone:  t_r_a_f_f_i_c_i_s_o_prop__zn
                1,3*; 2,3*
 -----------------------------------
 ~ - Invalid configuration
 * - Member does not exist
 # - Invalid usage of broadcast zone
```

To validate all zones in the zone database in the effective configuration:

```
switch:admin> zone --validate -m 2
Effective configuration:
 cfg:   ticonfig
 zone:  regzone 1,4*
                1,5*
 -----------------------------------
 ~ - Invalid configuration
 * - Member does not exist
 # - Invalid usage of broadcast zone
```

To prune all the zone members that are not enforceable:

```
switch:admin> zone --validate -f
You are about to prune the zone configurations,
based on zone --validate output.
Do you want to prune the zone
configurations (yes, y, no, n): [no] y
```

To validate the zone members beginning with "gre", regardless of the case:

```
switch:admin> zone --validate -i gre*
Defined configuration:
 zone:   GREEN  44,4; 21:00:00:20:37:0c:71:02; 8,9
 zone:   green  2,2*; 2,3*; 21:00:00:20:37:0c:76:8c*

Effective configuration:
 zone:   green  2,2*
                2,3*
                21:00:00:20:37:0c:76:8c*
----------------------------------
~ - Invalid configuration
* - Member does not exist
# - Invalid usage of broadcast zone
```

2. Traffic isolation zone commands

To create an activated traffic isolation zone with failover enabled (default).

```
switch:admin> zone --create -t ti purplezone  \
     -p "1,1; 2,4; 1,8; 2,6"
```

To create a deactivated traffic isolation zone with failover disabled:.

```
switch:admin> zone --create -t ti -o dn purplezone  \
     -p "1,1; 2,4; 1,8; 2,6"
```

To add an E_Port and N_Port member as a *portlist* to an existing TI zone:

```
switch:admin> zone --add purplezone  \
     -p "3,4; 3,6"
```

To add the option to disable failover for a TI zone:

```
switch:admin> zone --add -o n purplezone
```

To add the option to enable failover for a TI zone:

```
switch:admin> zone --add -o f greenzone" -p "3,4"
```

To remove portlist members from an existing TI zone.

```
switch:admin> zone --remove bluezone -p "3,4; 3,6"
```

To activate the TI zone "bluezone":

```
switch:admin> zone --activate bluezone
```

To deactivate the TI zone "purplezone":

```
switch:admin> zone --deactivate purplezone
```

To delete the TI zone "bluezone":

```
switch:admin> zone --delete bluezone
```

To display all TI zones in the defined configuration:

```
switch:admin> zone --show
Defined TI zone configuration:

TI Zone Name:    ti_blue
Port List: 4,55; 10:00:00:00:00:01:00:01; \
```

```
             10:00:00:00:00:01:00:04; 3,9

Configured Status: Activated / Failover-Disabled
Enabled Status: Deactivated

TI Zone Name:   ti_red
Port List:  4,4; 5,5; 3,3

Configured Status: Activated / Failover-Enabled
Enabled Status: Activated / Failover-Enabled
```

To display all TI zones in the defined configuration in ascending order:

```
switch:admin> zone --show -ascending

Defined TI zone configuration:

TI Zone Name:   ti_blue
Port List:      10:00:00:00:00:01:00:01; \
   10:00:00:00:00:01:00:04; 3,9; 4,55

Configured Status: Activated / Failover-Disabled
Enabled Status: Deactivated

TI Zone Name:   ti_red
Port List:      3,3; 4,4; 5,5

Configured Status: Activated / Failover-Enabled
Enabled Status: Activated / Failover-Enabled
```

To display a specified zone in the defined configuration:

```
switch:admin> zone --show ti_red
Defined TI zone configuration:

TI Zone Name:   ti_red
Port List:    4,4; 5,5; 3,3

Configured Status: Activated / Failover-Disabled
Enabled Status: Deactivated
```

To display members for the zone "ti_red" in ascending order:

```
switch:admin> zone --show ti_red -ascending
Defined TI zone configuration:

TI Zone Name:   ti_red
Port List:      3,3; 4,4; 5,5

Configured Status: Activated / Failover-Disabled
Enabled Status: Deactivated
```

To display members for the zone "TI_zone", regardless of the case:

```
switch:admin> zone --show -ic TI_zone*
Defined TI zone configuration:
```

```
TI Zone Name:    TI_zone
Port List:       7,8

Configured Status: Activated / Failover-Enabled
Enabled Status: Deactivated

TI Zone Name:    ti_zone
Port List:       3,3

Configured Status: Activated / Failover-Enabled
Enabled Status: Deactivated
```

To create an FCR TI zone within an Edge fabric where a host should talk to target1 and target4 through port number 2 on an Edge fabric switch with a domain ID of 3. (in the example, "3,1" is the host, and the remaining members are E_Ports):

```
switch:admin> zone --create -t ti fcr_edge_ti_zone \
     -p "3,1; 3,2; 4,-1; 5, -1"
```

To create an FCR TI zone within a Backbone where a host, target1, and target4 communicate over VE_Ports consisting of FCR1 port number 4 and FCR2 port number 7:

```
switch:admin> zone --create -t ti fcr_ti_zone \
     -p  "1,1; 2,1;host_PWWN;  target1_PWWN; \
      target4_PWWN; 1,4; 2,7"
```

To troubleshoot TI zone problems:

```
switch:admin> zone --showTIerrors
My Domain: 1

Error type:          ERROR
Affected Remote Domain:      2
Affected Local Port:  3
Affected TI Zones:    ti1, ti2
Affected Remote Ports: 6, 7, 8, 9
```

To display details of the trunk members present in the TI zone and those not present in the TI zone:

```
switch:admin> zone --showTItrunkerrors
TI Zone Name: brackets

E-Port Trunks
Trunk members in TI zone: 16 18
Trunk members not in TI zone: 17

F-Port Trunks
Trunk members in TI zone: 4 5
Trunk members not in TI zone: 6

TI Zone Name: loop

E-Port Trunks
Trunk members in TI zone: 0
Trunk members not in TI zone: 1
```

```
TI Zone Name: operand

E-Port Trunks
Trunk members in TI zone: 8
Trunk members not in TI zone: 9 10

E-Port Trunks
Trunk members in TI zone: 16
Trunk members not in TI zone: 17 18
```

3. Frame redirect zone commands

To create an RD Zone, given a host (10:10:10:10:10:10:10:10), target (20:20:20:20:20:20:20:20), VI (30:30:30:30:30:30:30:30), and VT (40:40:40:40:40:40:40:40):

```
switch:admin> zone --rdcreate  \
     10:10:10:10:10:10:10:10 20:20:20:20:20:20:20:20  \
     30:30:30:30:30:30:30:30 40:40:40:40:40:40:40:40  \
     restartable noFCR
```

This command creates the following zone objects:

• RD zone "red_0917_10_10_10_10_10_10_\ 10_10_20_20_20_20_20_20_20_20", with a restricted policy and no FCR support.

• The base zone object, "red_____base".

• The RD zone configuration, "r_e_d_i_r_c__fg".

To display the newly created zone objects:

```
switch:admin> cfgshow
Defined configuration:
 cfg:    myHTcfg myHostTarget
 cfg:    r_e_d_i_r_c__fg
          red_____base;
 red_0917_00_3f_3f_3f_23_24_25_26_3f_3f_3f_30_32_00_00_00
 zone:  myHostTarget
  00:3f:3f:3f:23:24:25:26; 3f:3f:3f:30:32:00:00:00
 zone:red_0917_00_3f_3f_3f_23_24_25_26_3f_3f_3f_30_32_00_00_00
       00:3f:3f:3f:23:24:25:26; 3f:3f:3f:30:32:00:00:00;
     3f:3f:3f:30:30:00:00:00; 3f:3f:3f:30:31:00:00:00
 zone:   red_____base
       00:00:00:00:00:00:00:01; 00:00:00:00:00:00:00:02;
       00:00:00:00:00:00:00:03; 00:00:00:00:00:00:00:04

 Effective configuration:
  cfg:    myHTcfg
  zone:   myHostTarget
               00:3f:3f:3f:23:24:25:26
               3f:3f:3f:30:32:00:00:00
```

To delete an RD Zone named "red_0917_10_10_10_10_10_ \ 10_10_10_20_20_20_20_20_20_20_20":

```
switch:admin> zone --rddelete  \
     red_0917_10_10_10_10_10_10_10_10_20_20_20_20_20_20_20_20
```

See Also

zoneHelp

zoneAdd

Adds a member to the zone or Peer Zone.

Synopsis

```
zoneadd "zoneName", "member[;member...]"
zoneadd --peerzone "zoneName" -principal "principal[;principal...]"
    -members "member[;member...]"
```

Description

Use this command to add one or more members to an existing zone or Peer Zone.

This command changes the defined configuration. For the change to be preserved across switch reboots, save the configuration to nonvolatile memory with the **cfgSave** command. For the change to become effective, enable the configuration with the **cfgEnable** command.

Target Driven Peer Zones are not allowed to be edited using this command.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

When an FCS policy is enabled, this command can be issued only from the primary FCS switch.

This command is not supported on the Brocade Analytics Monitoring Platform.

Operands

The following operands are required:

"*zoneName*"

Specify the name of an existing zone. Double quotation marks are optional.

Refer to the **zoneCreate** command for more information on name and member specifications. The dollar sign ($) must be prefixed with a backslash (\) while using it in the command prompt.

"*member*"

Specify a member or list of members to be added. The list must be enclosed in double quotation marks. Members must be separated by semicolons. Members can be specified in one or more of the following ways:

- A switch domain and port index number pair; for example, "2, 20". Use **switchShow** for a listing of valid port index numbers.

- Node or port WWN.

- Zone alias name.

- •   Zone alias pattern. Use a pattern preceded by the wildcard symbol asterisk (*) to include members in the zone that matches the pattern.

--peerzone "*zoneName*"

Specifies the Peer Zone name to which one or more principal or members should be added.

-principal "*principal*"

Specify a principal or list of principal members to be added. The list must be enclosed in double quotation marks. Principal members must be separated by semicolons. You can specify a WWN, D, I, or zone alias. The peer zones cannot have mixed members; they must either have D,I members including members of alias present in the peer zone or WWN members including members of alias present in the peer zone.

-members "*member*"

Specify a member or list of members to be added to the Peer Zone. You can specify a WWN, D, I, or zone alias. The peer zones cannot have mixed members; they must either have D,I members including members of alias present in the peer zone or WWN members including members of alias present in the peer zone.

Examples

To add aliases for three disk arrays to "Blue_zone":

```
switch:admin> zoneadd "Blue_Zone", "array3; array4; array5"
```

To add aliases for all the arrays that matches a pattern:

```
switch:admin> zoneadd matt, "ze*;bond*; j*"
switch:admin> cfgshow
Defined configuration:
 zone: matt   30:06:00:07:1e:a2:10:20; 3,2; zeus; \
    bond; jake; jeff; jones
 zone: sloth  bawn; bolt; bond; brain; brit; bru; \
    10:00:00:00:01:1e:20:20
 alias:        bawn   3,5; 4,8
 alias:        bolt   10:00:00:02:1f:02:00:01
 alias:        bond   10:00:05:1e:a9:20:00:01; 3,5
 alias:        brain  11,4; 22,1; 33,6
 alias:        brit   12,1
 alias:        bru    5,3; 12,4
 alias:        geek   2,7; 4,11; 20:10:00:05:1e:a9:20:87
 alias:        jake   4,7; 8,9; 14,11
 alias:        jeff   30:00:00:05:1e:a1:cd:02; \
    40:00:00:05:1e:a1:cd:04
 alias:        jones  7,3; 4,5
 alias:        zeus   4,7; 6,8; 9,2

Effective configuration:
No Effective configuration: (No Access)
```

To add a member to a Peer Zone:

```
switch:admin> zoneadd --peerzone peerzone_wwn_mbrs \
    -members "10:00:05:1e:a9:20:00:02"
```

See Also

zoneCreate, zoneDelete, zoneRemove, zoneShow

zoneCreate

Creates a zone or a Peer Zone.

Synopsis

```
zonecreate "zonename", "member[;member...]"
zonecreate --peerzone "zonename" -principal "principal[;principal...]"
    [-members "member[;member...]"]
```

Description

Use this command to create a new zone or a Peer Zone, or to create a "broadcast" zone.

A broadcast zone is a special zone that specifies the nodes that can receive broadcast traffic. This zone must be named "broadcast". Only one "broadcast" zone can exist within a fabric. This type of zone is enforced by the hardware; the switch controls the data transfer to a port.

This command changes the defined configuration. For the change to be preserved across switch reboots, save it to nonvolatile memory with the **cfgSave** command. For the change to become effective, enable the zone configuration with the **cfgEnable** command.

Target Driven Peer Zones are not allowed to be created using this command.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

When an FCS policy is enabled, this command can be issued only from the primary FCS switch.

This command is not supported on the Brocade Analytics Monitoring Platform.

Operands

The following operands are required:

"*zonename*"

Specify a unique name for the zone to be created. Double quotation marks are optional. A zone name can either begin with a letter or number and can consist of letters, numbers, hyphen (-), underscore (_), dollar ($), or caret (^) characters. Names are case-sensitive. For example, "Zone_1" and "zone_1" indicate different zones. Zone names are limited to 64 characters. Spaces are ignored.

The dollar sign ($) must be prefixed with a backslash (\) while using it in the command prompt.

"*member*"

Specify a member or a list of members to be included in the zone. The list must be enclosed in double quotation marks. Members must be separated by semicolons. The list must have at least one member; empty lists are not allowed.

A member can be specified in one or more of the following ways:

- **Domain and port index pair**: Specify a port by domain and port index, for example, "2, 20" specifies port index 20 on switch domain 2. When a zone member is specified by port index, all devices connected to that port are in the zone. If this port is an arbitrated loop, then all devices on the loop are in the zone. Use **switchShow** for a list of valid port index numbers.

- **World wide name**: Specify a world wide name as eight hex numbers separated by colons, for example "10:00:00:60:69:00:00:8a". Zoning compares the WWN with the node and port names presented by a device in a login frame (FLOGI or PLOGI). When a zone member is specified by node name, then all ports on that device are in the zone. When a zone member is specified by port name, then only that single device port is in the zone.

- **Zone alias name**: Specify a zone alias name using the same format as a zone name. Refer to **aliCreate** command help for zone alias naming requirements.

- **Zone alias pattern**: Use a pattern preceded by the wildcard symbol asterisk (*) to include members in the zone that matches the pattern.

--peerzone "*zoneName*"

Creates a new Peer Zone.

-principal "*principal*"

Specify a principal or list of principal members to be included in the Peer Zone. The list must be enclosed in double quotation marks. Principal members must be separated by semicolons. You can specify a WWN, D, I, or zone alias. The peer zones cannot have mixed members; they must either have D,I members including members of alias present in the peer zone or WWN members including members of alias present in the peer zone.

-members "*member*"

Specify a member or list of members to be included in the Peer Zone. You can specify a WWN, D, I, or zone alias. The peer zones cannot have mixed members; they must either have D,I members including members of alias present in the peer zone or WWN members including members of alias present in the peer zone. This operand is optional.

When creating a zone, you can combine different ways of specifying zone members. For example, a zone defined with the following members: "2,12; orange_dev" and "orange_dev" alias with the member "2,14" contains all devices connected to switch 2, ports 12 and 14.

Examples

To create three zones using a combination of port numbers and zone aliases:

```
switch:admin> zonecreate "Purple_zone", "1,0"

switch:admin> zonecreate "Blue_zone", "1,1; array1; 1,2; array2"

switch:admin> zonecreate "Green_zone", "1,0; 1,2; array2"
```

To create zone with the specified zone alias and to include the members that matches a pattern:

```
switch:admin> zonecreate sloth, "b*; 10:00:00:00:01:1e:20:20"
switch:admin> cfgshow
Defined configuration:
 zone:  matt   30:06:00:07:1e:a2:10:20; 3,2
 zone:  sloth  bawn; bolt; bond; brain; brit; \
     bru; 10:00:00:00:01:1e:20:20
 alias: bawn   3,5; 4,8
 alias:        bolt   10:00:00:02:1f:02:00:01
 alias:        bond   10:00:05:1e:a9:20:00:01; 3,5
 alias:        brain  11,4; 22,1; 33,6
 alias:        brit   12,1
 alias:        bru    5,3; 12,4
 alias:        geek   2,7; 4,11; 20:10:00:05:1e:a9:20:87
 alias:        jake   4,7; 8,9; 14,11
 alias:        jeff   30:00:00:05:1e:a1:cd:02; \
     40:00:00:05:1e:a1:cd:04
 alias:        jones  7,3; 4,5
 alias:        zeus   4,7; 6,8; 9,2
```

To create Peer Zones:

```
switch:admin> zonecreate --peerzone peerzone_wwn_mbrs \
   -principal "10:00:00:00:01:1e:20:20" -members
"10:00:00:02:1f:02:00:01;10:00:05:1e:a9:20:00:01"

switch:admin> zonecreate --peerzone peerzone_di_mbrs -principal "10,1" -
members "20,1;20,2"
```

See Also

zoneAdd, zoneDelete, zoneRemove, zoneShow

zoneDelete

Deletes a zone or Peer Zone.

Synopsis

zonedelete "*zonename*"

Description

Use this command to delete a zone or Peer Zone.

This command changes the defined configuration. For the change to be preserved across switch reboots, save the configuration to nonvolatile memory using the **cfgSave** command. For the change to become effective, enable the configuration with the **cfgEnable** command.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

When an FCS policy is enabled, this command can be issued only from the primary FCS switch.

This command is not supported on the Brocade Analytics Monitoring Platform.

Operands

The following operand is required:

"*zonename*"

Specify the name of the zone to be deleted. Quotation marks are optional.

Refer to the **zoneCreate** command for more information on name and member specifications. The dollar sign ($) must be prefixed with a backslash (\) while using it in the command prompt.

Examples

To delete the zone "Blue_zone":

switch:admin> **zonedelete "Blue_zone"**

To delete the Peer Zone "peerzone_di_mbrs":

switch:admin> **zonedelete "peerzone_di_mbrs"**

See Also

zoneAdd, zoneCreate, zoneRemove, zoneShow

zoneHelp

Displays a description of zoning commands.

Synopsis

```
zonehelp
```

Description

Use this command to display short descriptions of zoning commands.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

None

Examples

To display zone command help information:

```
switch:admin> zonehelp
aliadd              Add a member to a zone alias
alicreate           Create a zone alias
alidelete           Delete a zone alias
aliremove           Remove a member from a zone alias
alishow             Print zone alias information
bootluncfg                  Configure boot LUN for an HBA
cfgactvshow         Display Effective zone configuration \
                    information
cfgadd              Add a member to a configuration
cfgclear            Clear all zone configurations
cfgcreate           Create a zone configuration
cfgdelete           Delete a zone configuration
cfgdisable          Disable a zone configuration
cfgenable           Enable a zone configuration
cfgremove           Remove a member from a configuration
cfgsave             Save zone configurations in flash
cfgshow             Print zone configuration information
cfgsize             Print size details of zone database
cfgtransabort       Abort zone configuration transaction
cfgtransshow        Print zone configurations in transaction buffer
defzone             Activates or deactivates a default zone
                    configuration.
msfr                Create a MSFR Zone (internal use only)
nszonemember        Display the information of all the online devices
```

```
                          which are zoned with the given device.
            openfr          Create a MSFR Zone (internal use only)
            zone           Copies/Removes/Validates zone objects
            zoneadd        Add a member to a zone
            zonecreate     Create a zone
            zonedelete     Delete a zone
            zonehelp       Print zoning help info
            zoneobjectcopy Copies a zone object
            zoneobjectexpunge Expunges a zone object
            zoneobjectrename Rename a zoning Object
            zoneremove     Remove a member from a zone
            zoneshow       Print zone information
```

See Also

          None

zoneObjectCopy

Copies a zone object.

Synopsis

zoneObjectCopy "*objectName*", "*newName*"

Description

Use this command to make a copy of an existing zone object and give it a new name. The resulting object is of the same type as the original object. You can use this command for all zone object types, including cfg, zone, and alias.

Target Driven Peer Zones are not allowed to be edited using this command.

This command changes the defined configuration. For the change to be preserved across switch reboots, save the configuration to nonvolatile memory with the **cfgSave** command. For the change to become effective, enable the configuration with the **cfgEnable** command.

This command is not applicable for special zones, such as TI zones or RD zones.

Notes

When FCS policy is enabled, this command can be issued only from the primary FCS switch.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

The following operands are required:

"*objectName*"

> The name of the object that you want to copy. Quotation marks are optional.

"*newName*"

> The name of the object that you want created. Quotation marks are optional.

A zone configuration name can either begin with a letter or number and can consist of letters, numbers, hyphen (-), underscore (_), dollar ($), or caret (^) characters. Names are case-sensitive. For example, "Cfg_1" and "cfg_1" are different zone configurations. Blank spaces are ignored.

The dollar sign ($) must be prefixed with a backslash (\) while using it in the command prompt.

Refer to the **zoneCreate** command for more information on name and member specifications

Examples

To create a configuration containing three zones:

```
switch:admin> cfgshow "*"
     cfg:   USA_cfg    Red_zone; White_zone; Blue_zone

switch:admin> zoneobjectcopy "USA_cfg", "UK_cfg"

switch:admin> cfgshow "*"
     cfg:   UK_cfg     Red_zone; White_zone; Blue_zone
     cfg:   USA_cfg    Red_zone; White_zone; Blue_zone
```

See Also

cfgAdd, cfgClear, cfgDelete, cfgDisable, cfgEnable, cfgRemove, cfgSave, cfgShow, zoneObjectRename

```
switch:admin> cfgshow "*"
     cfg:   USA_cfg    Red_zone; White_zone; Blue_zone
```

zoneObjectExpunge

Expunges a zone object.

Synopsis

```
zoneObjectExpunge "objectName"
```

Description

Use this command to expunge a zone object. In addition to deleting the object, this command also removes the object from the member lists of all other objects. After successful execution of this command, the specified object no longer exists the database. You can use this command for all zone object types, including cfg, zone, and alias.

Target Driven Peer Zones are not allowed to be edited using this command.

This command changes the defined configuration. For the change to be preserved across switch reboots, save the configuration to nonvolatile memory with the **cfgSave** command. For the change to become effective, enable the configuration with the **cfgEnable** command.

Notes

When FCS policy is enabled, this command can be issued only from the primary FCS switch.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

This command has the following operand:

"objectName"

The name of the object that you want to expunge. Quotation marks are optional. This operand is required.

Refer to the **zoneCreate** command for more information on name and member specifications. Note that the dollar sign ($) must be prefixed with a backslash (\) while using it in the command prompt.

Examples

To create a configuration containing three zones:

```
switch:admin> cfgshow
    Defined configuration:
     cfg:   USA_cfg Red_zone; White_zone; Blue_zone
     zone:  Blue_zone
            1,1; array1; 1,2; array2
     zone:  Red_zone
            1,0; loop1
```

```
        zone:  White_zone
               1,3; 1,4
        alias: array1  21:00:00:20:37:0c:76:8c; \
                  21:00:00:20:37:0c:71:02
        alias: array2  21:00:00:20:37:0c:76:22; \
                  21:00:00:20:37:0c:76:28
        alias: loop1   21:00:00:20:37:0c:76:85; \
                  21:00:00:20:37:0c:71:df

  switch:admin> zoneobjectexpunge "White_zone"

  switch:admin> cfgshow
      Defined configuration:
      cfg:   USA_cfg   Red_zone; Blue_zone
      zone:  Blue_zone
             1,1; array1; 1,2; array2
      zone:  Red_zone
             1,0; loop1
      alias: array1  21:00:00:20:37:0c:76:8c; \
                21:00:00:20:37:0c:71:02
      alias: array2  21:00:00:20:37:0c:76:22; \
                21:00:00:20:37:0c:76:28
      alias: loop1   21:00:00:20:37:0c:76:85; \
                21:00:00:20:37:0c:71:df
```

See Also

cfgAdd, cfgClear, cfgDelete, cfgDisable, cfgEnable, cfgRemove, cfgSave, cfgShow, zoneObjectCopy, zoneObjectRename

zoneObjectRename

Renames a zone object.

Synopsis

zoneObjectRename "*objectName*", "*newName*"

Description

Use this command to rename a zone object. You can use this command for all zone object types, including cfg, zone, and alias.

Target Driven Peer Zones are not allowed to be edited using this command.

This command changes the defined configuration. For the change to be preserved across switch reboots, save the configuration to nonvolatile memory with the **cfgSave** command. For the change to become effective, enable the configuration must be enabled with the **cfgEnable** command.

This command is not applicable for special zones, such as TI zones or RD zones.

Notes

When an FCS policy is enabled, this command can be issued only from the primary FCS switch.

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

Operands

The following operands are required:

"*objectName*"

> The name of the object you want to rename.

"*newName*"

> The new name of the object.

A zone configuration name can either begin with a letter or number and can consist of letters, numbers, hyphen (-), underscore (_), dollar ($), or caret (^) characters. Names are case-sensitive. For example, "Cfg_1" and "cfg_1" are different zone configurations. Quotation marks are optional. Spaces are ignored.

The dollar sign ($) must be prefixed with a backslash (\) while using it in the command prompt.

Refer to the **zoneCreate** command for more information on name and member specifications.

Examples

To create a configuration containing three zones:

```
switch:admin> cfgshow "*"
      cfg:   USA_cfg    Red_zone; White_zone; Blue_zone

switch:admin> zoneobjectrename "USA_cfg", "UK_cfg"

switch:admin> cfgshow "*"
      cfg:   UK_cfg     Red_zone; White_zone; Blue_zone
```

See Also

cfgAdd, cfgClear, cfgDelete, cfgDisable, cfgEnable, cfgRemove, cfgSave, cfgShow, zoneObjectCopy

zoneObjectReplace

Replaces zone members.

Synopsis

```
zoneobjectreplace oldmember newmember
zoneobjectreplace --help
```

Description

Use this command to replace the existing member of a zone or a Peer Zone with a new member. This command can be used to replace members of an alias, but an alias itself cannot be replaced. This command is not applicable for Traffic Isolation (TI) Zones, and Frame Redirect (RD) Zones.

The property member of a Peer Zone cannot be replaced using this command.

Target Driven Peer Zones are not allowed to be edited using this command.

For the change to become effective, enable the configuration with the **cfgEnable** command.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

When an FCS policy is enabled, this command can be issued only from the primary FCS switch.

This command is not supported on the Brocade Analytics Monitoring Platform.

Operands

The following operands are required:

oldmember

Specifies the the zone member that has to be replaced. You can specify WWN or Domain,Index (D,I).

newmember

Specifies the new zone member with which to replace the old zone member. You can specify WWN or D,I.

--help

Displays the command usage.

Examples

To replace zone member:

```
switch:admin> zoneobjectreplace \
    "20:00:00:05:1e:a1:af:b2" "10:00:00:05:1e:a1:10:c1"
switch:admin> cfgshow
Defined configuration:
 cfg:   cfg     lsan_m
 cfg:   cfg1    zone2; zone3
 zone:  lsan_m  20:15:00:05:1e:a2:f9:b1; 20:13:00:05:1e:a2:f9:b1
 zone:  zone1   2,3; 20:00:00:05:1e:a1:af:b1; zali_1
 zone:  zone2   5,7; 2,9
 zone:  zone3   10:00:00:05:1e:a1:10:c1; 20:10:00:05:1e:a9:20:12
 alias: zali_1  10:00:00:05:1e:a1:ef:b9; 2,3; 1,11

Effective configuration:
 cfg:   cfg
 zone:  lsan_m    20:15:00:05:1e:a2:f9:b1 20:13:00:05:1e:a2:f9:b1
```

See Also

zoneAdd, zoneCreate, zoneDelete, zoneRemove, zoneShow

zoneRemove

Removes a member and principal (Peer Zone) from a zone.

Synopsis

```
zoneremove "zonename", "member[;member...]"
zoneremove --peerzone "zonename" -principal "principal[;principal...]"
     -members "member[;member...]"
```

Description

Use this command to remove one or more members from an existing zone, and to remove one or more members or principal members from a Peer Zone.

If all members are removed, the zone is deleted.

If all members (principal and non-principal members) are removed, the Peer Zone is deleted. If all non-principal members are removed but there is still a principal member, the Peer Zone will still exist.

This command changes the defined configuration. For the change to be preserved across switch reboots, save the configuration to nonvolatile memory with the **cfgSave** command. For the change to become effective, enable the configuration with the **cfgEnable** command.

Target Driven Peer Zones are not allowed to be edited using this command.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

When an FCS policy is enabled, this command can be issued only from the primary FCS switch.

This command is not supported on the Brocade Analytics Monitoring Platform.

Operands

The following operands are required:

"*zonename*"

Specify the name of the zone from which to remove a member or principal (Peer Zone only). Double quotation marks are optional.

Refer to the **zoneCreate** command for more information on name and member specifications. The dollar sign ($) must be prefixed with a backslash (\) while using it in the command prompt.

"*member*"

Specify a member or a list of members to be removed from the specified zone. The list must be enclosed in double quotation marks. Members must be separated by semicolons. A member can be one or more of the following:

- • A switch domain and port index pair: for example, "2,20". Use **switchShow** for a list of valid port index numbers.

- • A world wide name

- • A zone alias name

- • Zone alias pattern. Use a pattern preceded by the wildcard symbol asterisk (*) to include members in the zone that matches the pattern.

--peerzone "*zonename*"

Specifies the Peer Zone name from which one or more principal or members are to be removed.

-principal "*principal*"

Specify a principal or list of principal members to be removed from a Peer Zone. The list must be enclosed in double quotation marks. Principal members must be separated by semicolons. You can specify a WWN, D, I, or zone alias. The peer zones cannot have mixed members; they must either have D,I members including members of alias present in the peer zone or WWN members including members of alias present in the peer zone.

-members "*member*"

Specify a member or list of members to be removed from a Peer Zone. You can specify a WWN, D, I, or zone alias. The peer zones cannot have mixed members; they must either have D,I members including members of alias present in the peer zone or WWN members including members of alias present in the peer zone.

Examples

To remove "array2" from "Blue_zone":

```
switch:admin> zoneremove "Blue_zone", "array2"
```

To remove all the members and aliases matching a pattern:

```
switch:admin> zoneremove matt,"30:06:00:07:1e:a2:10:20; ja*; 3,2"
switch:admin> cfgshow
Defined configuration:
 zone: matt    zeus; bond; jeff; jones
 zone: sloth   bawn; bolt; bond; brain; brit; \
     bru; 10:00:00:00:01:1e:20:20
 alias:        bawn   3,5; 4,8
 alias:        bolt   10:00:00:02:1f:02:00:01
 alias:        bond   10:00:05:1e:a9:20:00:01; 3,5
 alias:        brain  11,4; 22,1; 33,6
 alias:        brit   12,1
 alias:        bru    5,3; 12,4
 alias:        geek   2,7; 4,11; 20:10:00:05:1e:a9:20:87
 alias:        jake   4,7; 8,9; 14,11
 alias:        jeff   30:00:00:05:1e:a1:cd:02; \
     40:00:00:05:1e:a1:cd:04
 alias:        jones  7,3; 4,5
```

```
 alias:          zeus    4,7; 6,8; 9,2

Effective configuration:
No Effective configuration: (No Access)
```

To remove a member from a Peer Zone:

```
switch:admin> zoneremove --peerzone peerzone_wwn_mbrs \
    -members "10:00:05:1e:a9:20:00:02"
```

See Also

zoneAdd, zoneCreate, zoneDelete, zoneShow

zoneShow

Displays zone information.

Synopsis

zoneshow [**--sort**] [**-verbose**][*pattern*][, *mode*]
zoneshow [**--ic**] [**-verbose**][*pattern*][, *mode*]
zoneshow [**--alias**] [**-ic**] [**-verbose**][*pattern*]
zoneshow [**--transdiffs**] [**-verbose**]
zoneshow [**--transdiffsonly**] [**-verbose**]
zoneshow [**--validate**] [**-verbose**] [*pattern*] [,*mode*]
zoneshow [**--peerzone** [**all** | **user** | **target**]]
zoneshow --verbose
zoneshow --help

Description

Use this command to display zone configuration information. This command includes sorting and search options to customize the output. If a pattern is specified, the command displays only matching match zone configuration names in the defined configuration. When used without operands, the command displays all zone configuration information for the Defined and the Effective configuration.

Use the **--transdiffs** and **--transdiffsonly** options to view changes in the current transaction.

The command output displays the changes in the current transaction by the following notations:

- An asterisk(*) before any tag indicates a change in that zone, zone configuration, alias or any other entity in the zone configuration.

- A plus(+) before any entity indicates that it is a newly added entity.

- A minus(-) before any entity indicates that it is a deleted entity.

Refer to **cfgShow** for a description of this display.

Notes

The execution of this command is subject to Virtual Fabric restrictions that may be in place. Refer to "Using Fabric OS Commands" and "Command Availability" for details.

When FCS policy is enabled, this command can be issued on any FCS switch in the fabric.

Operands

This command has the following operands:

--sort

Displays D,I zone members, WWNs, and zone alias in ascending order. For Peer Zones, the principal and peer members are sorted separately.

--ic

>   Displays all zone configuration names for a given pattern without case distinction.

-verbose

>   Displays the property members of peer zones along with the default **zoneShow** command output. This option is also applicable with **--sort**, **--alias**, **--transdiffs**, **--transdiffsonly**, and **--validate** operands.

--verbose

>   Displays the property members of peer zones along with the default **zoneShow** command output.

pattern

>   A POSIX-style regular expression used to match zone configuration names. This operand is optional. Patterns can contain:

>   •   A question mark (?) to match any single character.

>   •   An asterisk (*) to match any string of characters.

>   •   A range of characters to match any character within the range: for example, [0-9] or [a-f].

mode

>   Specify 0 to display the contents of the transaction buffer (the contents of the current transaction), or specify 1 to display the contents of the nonvolatile memory. The default value is 0. This operand is optional.

--alias

>   Displays all the zones containing the given alias pattern. The *pattern* operand is mandatory. The pattern can contain:

>   •   A question mark (?) to match any single character.

>   •   An asterisk (*) to match any string of characters.

>   •   A range of characters to match any character within the range: for example, [0-9] or [a-f].

--transdiffs

>   Displays the changes in the current transaction.

--transdiffsonly

>   Displays only the changes in the current transaction.

--validate

>   Displays the validated output for the specified zone configuration or for all the zone
>   configurations in the zone database.

zone_name

>   Specify the exact zone name or a portion of the zone name followed by an asterisk (*) at
>   the end to match any string of characters.
>
>   Refer to the **zoneCreate** command for more information on name and member specifica-
>   tions. The dollar sign ($) must be prefixed with a backslash (\) while using it in the
>   command prompt.

mode

>   Specifies the zone database location. This operand is optional. If no mode option is spec-
>   ified, the validated output of all the three buffers is displayed. Supported mode flag values
>   include the following:

0 | trans

>   Uses the zone database from the current transaction buffer.

1 | def

>   Uses the zone database stored in persistent storage.

2 | eff

>   Uses the currently enforced zone database.

--peerzone

>   Displays the Peer Zone configuration information (Peer Zone name, Peer Zone type,
>   property member, principal members, and peer members) for the Defined and the Effec-
>   tive configuration. The following operands are valid:

all

>   Displays configuration information for all Peer Zones.

user

>   Displays configuration information for the user created Peer Zones.

target

>   Displays configuration information for the target created Peer Zones.

--help

>   Displays the command usage.

Examples

To display all zones:

```
switch:admin> zoneshow
Defined configuration:
        cfg:   cfg1    red
        zone:  blue    44,5; 10:00:00:00:00:01:00:00; 3,4
        zone:  red     3,4; 1,2; 4,5; 2,3

Effective configuration:
        cfg:   cfg1
        zone:  red     3,4
                       1,2
                       4,5
                       2,3
```

To sort the zones in ascending order:

```
switch:admin> zoneShow --sort
Defined configuration:
cfg:   cfg1   red
zone:  blue  10:00:00:00:00:01:00:00; 3,4; 44,5
zone:  red   1,2; 2,3; 3,4; 4,5

Effective configuration:
cfg:   cfg1
zone:  red   1,2
             2,3
             3,4
             4,5
```

To display the red zone only using pattern search:

```
switch:admin> zoneshow red
zone:   red     3,4; 1,2; 4,5; 2,3
```

To combine a pattern search with the sorting option:

```
switch:admin> zoneshow --sort red
zone:   red     1,2; 2,3; 3,4; 4,5
```

To display the filtered content of the transaction buffer:

```
switch:admin> zoneshow red, 1
zone:   red   3,4; 1,2; 4,5; 2,3
```

To display the filtered and sorted content of the transaction buffer:

```
switch:admin> zoneshow --sort red, 1
zone:   red   1,2; 2,3; 3,4; 4,5
```

To display all green zones using pattern search, regardless of the case:

```
switch:admin> zoneshow --ic GREEN*
zone:   GREEN   44,4; 21:00:00:20:37:0c:71:02; 8,9
zone:   green   2,2; 2,3; 21:00:00:20:37:0c:76:8c
```

To display the zone members of alias "ali10":

```
switch:admin> zoneshow --alias ali10
```

```
zone:    zone20 ali10
```

To display the zone members of aliases beginning with "ali1":

```
switch:admin> zoneshow --alias ali1*
zone:   zone1  1,2; ali12; 3,3; 30:04:00:05:1e:0b:55:0f;
30:05:00:05:1e:0b:55:0f
zone:   zone   15 9,8; 2,5; 3,3; ali13
zone:   zone   17 ali1
zone:   zone   20 ali10
```

To display the changes in the current transaction:

```
switch:admin> zoneshow --transdiffs
Defined configuration:
cfg:     fabric_cfg
         green_zone
zone:    blue_zone
         21:00:00:20:37:0c:76:8c
*zone: green_zone
         21:00:00:20:37:0c:76:01; -1,4
*zone: red_zone
         3,3; 3,4; +5,5; +5,6

Effective configuration:
cfg:     fabric_cfg
zone:    green_zone
         21:00:00:20:37:0c:76:01
         1,4
```

To display only the changes in the current transaction:

```
switch:admin> zoneshow --transdiffsonly
*zone:  green_zone
          21:00:00:20:37:0c:76:01; -1,4
*zone:  red_zone
          3,3; 3,4; +5,5; +5,6
```

To display validated output of all zones in the zone database:

```
switch:admin> zoneshow --validate
Defined configuration:
 cfg:   cfg1    zone1; zone10; zone2
 zone:  zone1   20:1c:00:05:1e:57:b1:c6*; 20:1d:00:05:1e:57:b1:c6
 zone:  zone10  20:1e:00:05:1e:57:b1:c6; 20:1f:00:05:1e:57:b1:c6*
 zone:  zone2   20:03:00:05:1e:57:b1:c6; 20:1f:00:05:1e:57:b1:c6*


Effective configuration:
 cfg:   cfg1
 zone:  zone1   20:1c:00:05:1e:57:b1:c6*
        20:1d:00:05:1e:57:b1:c6
 zone:  zone10  20:1e:00:05:1e:57:b1:c6
        20:1f:00:05:1e:57:b1:c6*
 zone:  zone2   20:03:00:05:1e:57:b1:c6
        20:1f:00:05:1e:57:b1:c6*
-----------------------------------
```

```
~ - Invalid configuration
* - Member does not exist
# - Invalid usage of broadcast zone
```

To display validated output for a zone:

```
switch:admin> zoneshow --validate zone1
Defined configuration:
 zone:   zone1   20:1c:00:05:1e:57:b1:c6*; 20:1d:00:05:1e:57:b1:c6

Effective configuration:
 zone:   zone1   20:1c:00:05:1e:57:b1:c6*
         20:1d:00:05:1e:57:b1:c6
------------------------------------
~ - Invalid configuration
* - Member does not exist
# - Invalid usage of broadcast zone
```

To display validated output for zone members beginning with "zone":

```
switch:admin> zoneshow --validate zone*
Defined configuration:
 zone:   zone1   20:1c:00:05:1e:57:b1:c6*; 20:1d:00:05:1e:57:b1:c6
 zone:   zone10  20:1e:00:05:1e:57:b1:c6; 20:1f:00:05:1e:57:b1:c6*
 zone:   zone2   20:03:00:05:1e:57:b1:c6; 20:1f:00:05:1e:57:b1:c6*
 zone:   zone200 20:1d:00:05:1e:57:b1:c6; 20:1f:00:05:1e:57:b1:c6*

Effective configuration:
 zone:   zone1   20:1c:00:05:1e:57:b1:c6*
         20:1d:00:05:1e:57:b1:c6
 zone:   zone10  20:1e:00:05:1e:57:b1:c6
         20:1f:00:05:1e:57:b1:c6*
 zone:   zone2   20:03:00:05:1e:57:b1:c6
         20:1f:00:05:1e:57:b1:c6*
------------------------------------
~ - Invalid configuration
* - Member does not exist
# - Invalid usage of broadcast zone
```

To display validated output for a zone in the current transaction buffer:

```
switch:admin> zoneshow --validate zone200 0
Defined configuration:
 zone:   zone200  20:1d:00:05:1e:57:b1:c6; 20:1f:00:05:1e:57:b1:c6*
------------------------------------
~ - Invalid configuration
* - Member does not exist
# - Invalid usage of broadcast zone
```

To display the complete Peer Zoning configuration:

```
switch:admin> zoneshow --peerzone all
Defined configuration:
 zone: peerzone_di_mbrs
   Property Member: 00:02:00:00:00:02:00:01
   Created by: User
   Principal Member(s):
```

```
                    10,1
       Peer Member(s):
                    20,1; 20,2
 zone: peerzone_wwn_mbrs
    Property Member: 00:02:00:00:00:03:00:01
    Created by: User
    Principal Member(s):
                  10:00:00:00:01:1e:20:20
    Peer Member(s):
                  10:00:00:02:1f:02:00:01; \
                  10:00:05:1e:a9:20:00:01
Effective configuration:
 zone: peerzone_wwn_mbrs
    Property Member: 00:02:00:00:00:03:00:01
    Created by: User
    Principal Member(s):
                  10:00:00:00:01:1e:20:20
    Peer Member(s):
                  10:00:00:02:1f:02:00:01
                  10:00:05:1e:a9:20:00:01
1 Peer Zones in Eff Cfg
```

To display the property members of peer zones:

```
switch:admin> zoneshow --verbose
Defined configuration:
cfg:       c2               peer_zone3; peer_zone5; peer_zone7
zone:   peer_zone1          00:02:00:00:00:02:01:01; test1; edit123;
alias67
zone:   peer_zone2          00:02:00:00:00:03:00:01;
30:08:00:05:33:88:e3:f3;
                            30:08:00:05:33:88:e3:f4;
30:08:00:05:33:88:e3:f5
zone:   peer_zone3          00:02:00:00:00:03:01:02; edit123;
alias67; test1
zone:   peer_zone5          00:02:00:00:00:03:03:06; alias67;
edit123; test1
zone:   peer_zone7          00:02:00:00:00:02:01:02; edit123; alias67

Effective configuration:
cfg:       c2
zone:   peer_zone3
                            00:02:00:00:00:03:01:02
                            30:08:00:05:33:88:e3:f5
                            30:08:00:05:33:88:e3:f6
                            30:08:00:05:33:88:e3:f8
                            30:08:00:05:33:88:e3:f7
                            30:08:00:05:33:88:e3:fa
                            30:08:00:05:33:88:e3:fc
zone:   peer_zone5
                            00:02:00:00:00:03:03:06
                            30:08:00:05:33:88:e3:f5
                            30:08:00:05:33:88:e3:f6
                            30:08:00:05:33:88:e3:f8
```

```
                                                              30:08:00:05:33:88:e3:f7
                                                              30:08:00:05:33:88:e3:fa
                                                              30:08:00:05:33:88:e3:fc
              zone:     peer_zone7
                                                              00:02:00:00:00:02:01:02
                                                              7,6
                                                              7,7
                                                              7,4
                                                              7,5
                                                              7,10
                                                              7,11
```

See Also

None

Chapter 4: Primary FCS Commands

Table 4 summarizes the commands that are available only on the primary Fabric Configuration Server (FCS) when the FCS policy is enabled.

Table 4: Primary FCS Commands

Command	Description
aliAdd	Must be run from the primary FCS switch.
aliCreate	Must be run from the primary FCS switch.
aliDelete	Must be run from the primary FCS switch.
aliRemove	Must be run from the primary FCS switch.
aliShow	Can be run on all FCS switches.
cfgAdd	Must be run from the primary FCS switch.
cfgClear	Must be run from the primary FCS switch.
cfgCreate	Must be run from the primary FCS switch.
cfgDelete	Must be run from the primary FCS switch.
cfgDisable	Must be run from the primary FCS switch.
cfgEnable	Must be run from the primary FCS switch.
cfgRemove	Must be run from the primary FCS switch.
cfgSave	Must be run from the primary FCS switch.
cfgShow	Can be run on all FCS switches.
cfgTransAbort	Must be run from the primary FCS switch.
cfgTransShow	Must be run from the primary FCS switch.
date	Can be run on all switches to view the current date. You can modify the date only from the primary FCS switch.
defZone	The `defzone --show` command can be run on all switches. All other options must be run from the primary FCS switch.
msConfigure	Must be run from the primary FCS switch.
msPlClearDB	Must be run from the primary FCS switch.
msPlMgmtActivate	Must be run from the primary FCS switch.
msPlMgmtDeactivate	Must be run from the primary FCS switch.
msTdDisable	The `msTdDisable "ALL"` command must be run from the primary FCS switch.
msTdEnable	The `msTdEnable "ALL"` command must be run from the primary FCS switch.
secPolicyAbort	Must be run from the primary FCS switch.
secPolicyActivate	Must be run from the primary FCS switch.
secPolicyAdd	Must be run from the primary FCS switch.
secPolicyCreate	Must be run from the primary FCS switch.

Table 4: Primary FCS Commands (Continued)

Command	Description
secPolicyDelete	Must be run from the primary FCS switch.
secPolicyDump	Can be run on all FCS switches.
secPolicyFCSMove	Must be run from the primary FCS switch.
secPolicyRemove	Must be run from the primary FCS switch.
secPolicySave	Must be run from the primary FCS switch.
secPolicyShow	Can be run on all FCS switches.
snmpConfig	Can be run on all FCS switches.
tsClockServer	Can be run on all switches to view the NTP server's IP address. You can modify the NTP server's IP address only on the primary FCS switch.
zoneAdd	Must be run from the primary FCS switch.
zoneCreate	Must be run from the primary FCS switch.
zoneDelete	Must be run from the primary FCS switch.
zoneObjectCopy	Must be run from the primary FCS switch.
zoneObjectExpune	Must be run from the primary FCS switch.
zoneObjectRename	Must be run from the primary FCS switch.
zoneRemove	Must be run from the primary FCS switch.

Chapter 5: Command Availability

5.1 Command Validation Checks

Before a command is issued, it is validated against the following checks.

1. Active or standby availability: On enterprise-class platform systems, checks that the command is available on the control processor (CP).

2. Role-Based Access Control (RBAC) availability: Checks that the invoking user's role is permitted to invoke the command. If the command modifies the system state, the user's role must have the modify permission for the command. If the command only displays the system state, the user's role must have observe permission for the command. Some commands both observe and modify the system state and thus require the observe-modify permission. The following RBAC permissions are supported:
   - O = Observe
   - OM = Observe-modify,
   - N = None or not available

3. Virtual Fabric availability: If Virtual Fabrics are enabled, commands are checked for context and switch type as follows:
   - Virtual Fabric context (VF) = Command applies to the current logical switch only or to a specified logical switch.
     Virtual Fabric commands are further constrained by one of the following switch types:
     - All Switches (All) = Command can be run in any switch context.
     - Base Switch (BS) = Command can be run only on the base switch.
     - Default Switch (DS) = Command can be run only on the default switch.
     - N/A = Switch type is not applicable to the command.
   - Chassis context (CH) = Command applies to the chassis on which it is issued.
   - Switch and Chassis context (VF/CH) = Command applies to the switch and the chassis.
   - Disallowed = Command cannot be issued when Virtual Fabrics is enabled.

4. Command-specific: Checks whether the command is supported on the platform for which it is targeted.

5. Remote domain execution: Commands can be issued from a specified remote domain or logical switch context. In most cases, the show commands and the commands with show options are supported.

NOTE: To determine RBAC permissions for a specified command and associated major options, use the `classConfig --showcli` command. See "" for more information.

5.2 Virtual Fabric and Remote Domain Execution Command Restrictions

Table 1: Virtual Fabric and Remote Domain Execution Restrictions for Fabric OS Commands

Command Name	Context	Switch Type	Remote Domain Execution
aaaConfig	CH	N/A	Disallowed
ag	VF	All	Disallowed
agAutoMapBalance	VF	All	Disallowed
agShow	VF	All	Disallowed

Table 1: Virtual Fabric and Remote Domain Execution Restrictions for Fabric OS Commands (Continued)

Command Name	Context	Switch Type	Remote Domain Execution
aliAdd	VF	All	Disallowed
aliCreate	VF	All	Disallowed
aliDelete	VF	All	Disallowed
aliRemove	VF	All	Disallowed
aliShow	VF	All	Disallowed
appLoginHistory	VF	All	Disallowed
appServer	VF	All	Disallowed
aptPolicy	VF	All	Disallowed
auditCfg	CH	N/A	Disallowed
auditDump	CH	N/A	Disallowed
authUtil	VF	All	Disallowed
bannerSet	VF	N/A	Disallowed
bannerShow	VF	N/A	Disallowed
bcastShow	VF	All	Allowed
bladeCfgGemode	CH	N/A	Allowed
bladeDisable	CH	N/A	Disallowed
bladeEnable	CH	N/A	Disallowed
bladePortMap	CH	N/A	Disallowed
bladeSwap	VF	All	Disallowed
bladeVerShow	CH	N/A	Disallowed
bootLunCfg	VF	All	Disallowed
bufOpMode	CH	N/A	Allowed
cfgActvShow	VF	All	Disallowed
cfgAdd	VF	All	Disallowed
cfgClear	VF	All	Disallowed
cfgCreate	VF	All	Disallowed
cfgDelete	VF	All	Disallowed
cfgDisable	VF	All	Disallowed
cfgEnable	VF	All	Disallowed
cfgRemove	VF	All	Disallowed
cfgSave	VF	All	Disallowed
cfgShow	VF	All	Disallowed
cfgSize	VF	All	Disallowed
cfgTransAbort	VF	All	Disallowed
cfgTransShow	VF	All	Disallowed

Table 1: Virtual Fabric and Remote Domain Execution Restrictions for Fabric OS Commands (Continued)

Command Name	Context	Switch Type	Remote Domain Execution
chassisBeacon	CH	N/A	Disallowed
chassisCfgPerrThreshold	CH	N/A	Allowed
chassisDisable	CH	N/A	Disallowed
chassisDistribute	CH	N/A	Disallowed
chassisEnable	CH	N/A	Disallowed
chassisName	CH	N/A	Disallowed
chassisShow	CH	N/A	Allowed
classConfig	CH	N/A	Disallowed
cliHistory	CH/ VF	All	Disallowed
configDefault	VF/CH	N/A	Disallowed
configDownload	VF/CH	N/A	Disallowed
configList	CH	N/A	Disallowed
configRemove	VF	N/A	Disallowed
configShow	VF/CH	N/A	Disallowed
configUpload	VF/CH	N/A	Disallowed
configure	VF	All	Disallowed
configureChassis	CH	N/A	Disallowed
creditRecovMode	CH	N/A	Allowed
dataTypeShow	CH	N/A	Disallowed
date	CH	N/A	Disallowed
dbgShow	CH	N/A	Disallowed
defZone	VF	All	Disallowed
deviceLogin	VF	All	Allowed
diagClearError	CH	N/A	Disallowed
diagDisablePost	CH	N/A	Disallowed
diagEnablePost	CH	N/A	Disallowed
diagHelp	Disallowed	N/A	Disallowed
diagPost	CH	N/A	Disallowed
diagShow	VF	All	Disallowed
distribute	VF	All	Disallowed
dlsReset	VF	All	Disallowed
dlsSet	VF	All	Disallowed
dlsShow	VF	All	Allowed
dnsConfig	CH	N/A	Disallowed
enclosureShow	CH	N/A	Disallowed

Table 1: Virtual Fabric and Remote Domain Execution Restrictions for Fabric OS Commands (Continued)

Command Name	Context	Switch Type	Remote Domain Execution
errClear	CH	N/A	Disallowed
errDelimiterSet	CH	N/A	Disallowed
errDump	VF/CH	N/A	Disallowed
errFilterSet	CH	N/A	Disallowed
errModuleShow	VF	N/A	Disallowed
errShow	VF/CH	N/A	Disallowed
ethIf	CH	N/A	Allowed
exit	CH	N/A	Disallowed
extnCfg	VF/CH	All	Disallowed
fabRetryShow	VF	All	Allowed
fabRetryStats	VF	All	Allowed
fabricLog	VF	All	Disallowed
fabricName	VF	All	Allowed
fabricPrincipal	VF	All	Allowed
fabricShow	VF	All	Allowed
fabStatsShow	VF	All	Allowed
factoryFanShow	CH	N/A	Disallowed
fanDisable	CH	N/A	Disallowed
fanEnable	CH	N/A	Disallowed
fanShow	CH	N/A	Allowed
faPwwn	VF	All	Allowed
fastBoot	CH	N/A	Disallowed
fcipHelp	Disallowed	N/A	Disallowed
fcipLedTest	CH	N/A	Disallowed
fcipPathTest	CH	N/A	Disallowed
fcPing	VF	All	Disallowed
fcoe	VF	All	Disallowed
fcpLogClear	VF	All	Disallowed
fcpLogDisable	VF	All	Disallowed
fcpLogEnable	VF	All	Disallowed
fcpLogShow	VF	All	Disallowed
fcpProbeShow	VF	All	Allowed
fcpRlsProbe	VF	All	Allowed
fcpRlsShow	VF	All	Allowed
fcrBcastConfig	VF	BS	Allowed

Table 1: Virtual Fabric and Remote Domain Execution Restrictions for Fabric OS Commands (Continued)

Command Name	Context	Switch Type	Remote Domain Execution
fcrConfigure	VF	All	Disallowed
fcrEdgeShow	VF	BS	Allowed
fcrFabricShow	VF	BS	Allowed
fcrIclPathBWMonitor	VF	All	Disallowed
fcrLsan	VF	BS	Allowed
fcrLsanCount	VF	BS	Allowed
fcrLsanMatrix	VF	BS	Allowed
fcrPhydevShow	VF	BS	Allowed
fcrProxyConfig	VF	BS	Disallowed
fcrProxyDevShow	VF	BS	Allowed
fcrResourceShow	VF	BS	Allowed
fcrRouterPortCost	VF	BS	Allowed
fcrRouteShow	VF	BS	Allowed
fcrXlateConfig	VF	BS	Allowed
fddCfg	VF	All	Disallowed
fdmiCacheShow	VF	All	Allowed
fdmiShow	VF	All	Allowed
femDump	CH	N/A	Allowed
ficonCfg	VF	All	Disallowed
ficonClear	VF	All	Disallowed
ficonCupSet	VF	All	Disallowed
ficonCupShow	VF	All	Allowed
ficonHelp	Disallowed	N/A	Disallowed
ficonShow	VF	All	Allowed
fipsCfg	CH	NA/ALL	Disallowed
firmwareActivate	CH	N/A	Disallowed
firmwareCheck	CH	N/A	Disallowed
firmwareCleanInstall	CH	N/A	Disallowed
firmwareCommit	CH	N/A	Disallowed
firmwareDownload	CH	N/A	Disallowed
firmwareDownloadStatus	CH	N/A	Allowed
firmwareKeyShow	CH	N/A	Allowed
firmwareRestore	CH	N/A	Disallowed
firmwareShow	VF	N/A	Allowed
firmwareSync	CH	N/A	Disallowed

Table 1: Virtual Fabric and Remote Domain Execution Restrictions for Fabric OS Commands (Continued)

Command Name	Context	Switch Type	Remote Domain Execution
flow	VF	All	Allowed
fosConfig	CH	N/A	Disallowed
fosExec	VF	All	Disallowed
frameLog	VF	All	Allowed
fspfShow	VF	All	Allowed
gePortErrShow	VF	All	Allowed
gePortPerfShow	VF	All	Disallowed
h	Disallowed	N/A	Disallowed
haDisable	CH	N/A	Disallowed
haDump	CH	N/A	Allowed
haEnable	CH	N/A	Disallowed
haFailover	CH	N/A	Disallowed
haReboot	CH	N/A	Disallowed
haRedundancy	CH	N/A	Allowed
haShow	CH	N/A	Allowed
haShutdown	CH	N/A	Disallowed
haSyncStart	CH	N/A	Disallowed
haSyncStop	CH	N/A	Disallowed
help	Disallowed	N/A	Disallowed
historyLastShow	CH	N/A	Allowed
historyMode	CH	N/A	Disallowed
historyShow	CH	N/A	Allowed
i	CH	N/A	Disallowed
iflShow	VF	All	Allowed
interfaceShow	VF	All	Allowed
iodReset	VF	All	Disallowed
iodSet	VF	All	Allowed
iodShow	VF	All	Allowed
ipAddrSet	CH	N/A	Disallowed
ipAddrShow	VF, CH/ CH	N/A	Allowed
ipFilter	CH	N/A	Disallowed
islShow	VF	All	Allowed
itemList	VF	All	Disallowed
killTelnet	CH	N/A	Disallowed
lacp	VF	All	Disallowed

Table 1: Virtual Fabric and Remote Domain Execution Restrictions for Fabric OS Commands (Continued)

Command Name	Context	Switch Type	Remote Domain Execution
ldapCfg	CH	N/A	Disallowed
IfCfg	CH	N/A	Allowed
licenseAdd	CH	N/A	Disallowed
licenseIdShow	CH	N/A	Disallowed
licensePort	CH	N/A	Allowed
licenseRemove	CH	N/A	Disallowed
licenseShow	CH	N/A	Disallowed
licenseSlotCfg	CH	N/A	Disallowed
linkCost	VF	All	Disallowed
lldp	VF	All	Disallowed
logicalGroup	VF	All	Allowed
login	Disallowed	N/A	Disallowed
logOut	Disallowed	N/A	Disallowed
lsanZoneShow	VF	BS	Disallowed
lsCfg	CH	N/A	Allowed
lsDbShow	VF	All	Allowed
mapsConfig	VF	All	Allowed
mapsDb	VF	All	Allowed
mapshelp	VF	All	Disallowed
mapsPolicy	VF	All	Allowed
mapsRule	VF	All	Disallowed
mapsSam	VF	All	Allowed
memShow	CH	N/A	Disallowed
mgmtApp	VF/CH	All	Disallowed
motd	CH	N/A	Disallowed
msCapabilityShow	VF	All	Disallowed
msConfigure	VF	All	Disallowed
msPlatShow	VF	All	Disallowed
msPlatShowDBCB	VF	All	Disallowed
msPlClearDB	VF	All	Disallowed
msPlMgmtActivate	VF	All	Disallowed
msPlMgmtDeactivate	VF	All	Disallowed
msTdDisable	VF	All	Disallowed
msTdEnable	VF	All	Disallowed
msTdReadConfig	VF	All	Disallowed

Table 1: Virtual Fabric and Remote Domain Execution Restrictions for Fabric OS Commands (Continued)

Command Name	Context	Switch Type	Remote Domain Execution
myId	VF	N/A	Disallowed
nbrShow	VF	All	Allowed
nbrStateShow	VF	All	Allowed
nbrStatsClear	VF	All	Disallowed
nodeFind	VF	All	Disallowed
nodeWWN	VF	All	Disallowed
nsAliasShow	VF	All	Disallowed
nsAllShow	VF	All	Disallowed
nsCamShow	VF	All	Disallowed
nsDevLog	VF	All	Disallowed
nsShow	VF	All	Disallowed
nsZoneMember	VF	All	Disallowed
nsZoneShow	VF	All	Disallowed
passwd	VF/CH	N/A	Disallowed
passwdCfg	CH	N/A	Disallowed
pathBwConfig	VF	All	Disallowed
pathInfo	VF	All	Disallowed
pdShow	CH	N/A	Disallowed
portAddress	VF	All	Allowed
portAlpaShow	VF	All	Allowed
portBeacon	VF	All	Disallowed
portBufferCalc	VF	All	Disallowed
portBufferShow	VF	All	Allowed
portCamShow	VF	All	Allowed
portCfg	VF/CH	All	Disallowed
portCfgAlpa	VF	All	Disallowed
portCfgAutoDisable	VF	All	Allowed
portCfgCleanAddress	VF	All	Allowed
portCfgBreakout	VF	All	Disallowed
portCfgCompress	VF	All	Allowed
portCfgCreditRecovery	VF	All	Allowed
portCfgDefault	VF	All	Disallowed
portCfgDPort	VF	All	Disallowed
portCfgEncrypt	VF	All	Disallowed
portCfgEport	VF	All	Disallowed

Table 1: Virtual Fabric and Remote Domain Execution Restrictions for Fabric OS Commands (Continued)

Command Name	Context	Switch Type	Remote Domain Execution
portCfgEportCredits	VF	All	Allowed
portCfgEXPort	VF	All	Disallowed
portCfgFaultDelay	VF	All	Disallowed
portCfgFec	VF	All	Allowed
portCfgfFillword	VF	All	Disallowed
portCfgFlexPort	VF	All	Disallowed
portCfgFlogiLogout	VF	All	Disallowed
portCfgFportBuffers	VF	All	Disallowed
portCfgGE	VF	All	Allowed
portCfgGport	VF	All	Disallowed
portCfgISLMode	VF	All	Disallowed
portCfgLongDistance	VF	All	Disallowed
portCfgLossTov	VF	All	Disallowed
portCfgLport	VF	All	Disallowed
portCfgNonDfe	VF	All	Disallowed
portCfgNPIVPort	VF	All	Disallowed
portCfgNPort	VF	All	Disallowed
portCfgOctetSpeedCombo	CH	N/A	Disallowed
portCfgPersistence	VF	All	Disallowed
portCfgPersistentDisable	VF	All	Disallowed
portCfgPersistentEnable	VF	All	Disallowed
portCfgQos	VF	All	Disallowed
portCfgShow	VF	All	Allowed
portCfgSpeed	VF	All	Disallowed
portCfgTdz	VF	All	Disallowed
portCfgTrunkPort	VF	All	Disallowed
portCfgVEXPort	VF	All	Disallowed
portChannel	VF	All	Disallowed
portChannelShow	VF	All	Disallowed
portCmd	VF	All	Disallowed
portDebug	CH	N/A	Disallowed
portDecom	VF	All	Disallowed
portDisable	VF	All	Disallowed
portDPortTest	VF	All	Allowed
portEnable	VF	All	Disallowed

Table 1: Virtual Fabric and Remote Domain Execution Restrictions for Fabric OS Commands (Continued)

Command Name	Context	Switch Type	Remote Domain Execution
portEncCompShow	VF	All	Allowed
portErrShow	VF	All	Allowed
portFlagsShow	VF	All	Allowed
portImpair	VF	All	Allowed
portLedTest	CH	N/A	Disallowed
portLogClear	VF	All	Disallowed
portLogConfigShow	VF	All	Disallowed
portLogDisable	VF	All	Disallowed
portLogDump	VF	All	Disallowed
portLogDumpPort	VF	All	Disallowed
portLogEnable	VF	All	Disallowed
portLogEventShow	VF	All	Disallowed
portLoginShow	VF	All	Disallowed
portLogPdisc	VF	All	Disallowed
portLogReset	VF	All	Disallowed
portLogResize	VF	All	Disallowed
portLogShow	VF	All	Disallowed
portLogShowPort	VF	All	Disallowed
portLogTypeDisable	VF	All	Disallowed
portLogTypeEnable	VF	All	Disallowed
portLoopbackTest	CH	N/A	Disallowed
portName	VF	All	Disallowed
portPeerBeacon	VF	All	Allowed
portPerfShow	VF	All	Disallowed
portRouteShow	VF	All	Allowed
portShow	VF	All	Allowed
portStats64Show	VF	All	Allowed
portStatsClear	VF	All	Disallowed
portStatsShow	VF	All	Allowed
portSwap	VF	All	Disallowed
portSwapDisable	VF	All	Disallowed
portSwapEnable	VF	All	Disallowed
portSwapShow	VF	All	Allowed
portTest	VF	All	Disallowed
portTestShow	VF	All	Disallowed

Table 1: Virtual Fabric and Remote Domain Execution Restrictions for Fabric OS Commands (Continued)

Command Name	Context	Switch Type	Remote Domain Execution
portTrunkArea	VF	All	Allowed
portZoneShow	VF	All	Disallowed
powerOffListSet	CH	N/A	Disallowed
powerOffListShow	CH	N/A	Allowed
psShow	CH	N/A	Allowed
psUtil	CH	All	Disallowed
rasAdmin	CH	N/A	Disallowed
rasMan	Disallowed	N/A	Disallowed
reBoot	CH	N/A	Disallowed
relayConfig	CH	N/A	Allowed
roleConfig	CH	N/A	Disallowed
ron	CH	N/A	Disallowed
routeHelp	Disallowed	N/A	Disallowed
rtLogTrace	CH	N/A	Disallowed
sddQuarantine	VF	All	Disallowed
secActiveSize	VF	All	Disallowed
secAuthSecret	VF	All	Disallowed
secCertMgmt	CH	N/A	Disallowed
secCryptoCfg	CH	N/A	Disallowed
secDefineSize	VF	All	Disallowed
secGlobalShow	VF	All	Disallowed
secHelp	Disallowed	N/A	Disallowed
secPolicyAbort	VF	All	Disallowed
secPolicyActivate	VF	All	Disallowed
secPolicyAdd	VF	All	Disallowed
secPolicyCreate	VF	All	Disallowed
secPolicyDelete	VF	All	Disallowed
secPolicyDump	VF	All	Disallowed
secPolicyFCSMove	VF	All	Disallowed
secPolicyRemove	VF	All	Disallowed
secPolicySave	VF	All	Disallowed
secPolicyShow	VF	All	Disallowed
secStatsReset	VF	All	Disallowed
secStatsShow	VF	All	Disallowed
sensorShow	CH	N/A	Allowed

Table 1: Virtual Fabric and Remote Domain Execution Restrictions for Fabric OS Commands (Continued)

Command Name	Context	Switch Type	Remote Domain Execution
serDesTuneMode	CH	N/A	Allowed
setContext	VF	All	Disallowed
setDbg	CH	N/A	Disallowed
setVerbose	CH	N/A	Disallowed
sfpShow	VF	All	Disallowed
shellFlowControlDisable	CH	N/A	Disallowed
shellFlowControlEnable	CH	N/A	Disallowed
slotCfgPersistence	CH	All	Disallowed
slotPowerOff	CH	N/A	Disallowed
slotPowerOn	CH	N/A	Disallowed
slotShow	VF, CH	N/A	Allowed
slotStatsClear	VF	All	Disallowed
snmpConfig	CH	N/A	Disallowed
snmpStatistics	CH	N/A	Disallowed
snmpTraps	CH	N/A	Disallowed
spinFab	VF	All	Disallowed
sshUtil	CH	N/A	Disallowed
statsClear	VF	All	Disallowed
stopPortTest	VF	DS	Disallowed
supportFfdc	CH	N/A	Disallowed
supportFtp	CH	N/A	Disallowed
supportInfoClear	CH	N/A	Allowed
supportLink	CH	N/A	Disallowed
supportSave	CH	N/A	Allowed
supportShow	VF	All	Disallowed
supportShowCfgDisable	CH	N/A	Disallowed
supportShowCfgEnable	CH	N/A	Disallowed
supportShowCfgShow	CH	N/A	Disallowed
switchBeacon	VF	All	Disallowed
switchCfgPersistentDisable	VF	All	Disallowed
switchCfgPersistentEnable	VF	All	Disallowed
switchCfgSpeed	VF	All	Disallowed
switchCfgTrunk	VF	All	Disallowed
switchDisable	VF	All	Disallowed
switchEnable	VF	All	Disallowed

Table 1: Virtual Fabric and Remote Domain Execution Restrictions for Fabric OS Commands (Continued)

Command Name	Context	Switch Type	Remote Domain Execution
switchName	VF	All	Disallowed
switchShow	VF	All	Allowed
switchViolation	VF	All	Disallowed
sysHealth	CH	N/A	Disallowed
syslogAdmin	CH	N/A	Disallowed
sysShutdown	CH	N/A	Disallowed
tcpTimeStamp	CH	N/A	Disallowed
tempShow	CH	N/A	Allowed
timeOut	CH	N/A	Disallowed
topologyShow	VF	All	Allowed
traceDump	CH	N/A	Disallowed
trunkDebug	VF	All	Allowed
trunkShow	VF	All	Allowed
tsClockServer	CH	N/A	Disallowed
tsTimeZone	CH	N/A	Disallowed
turboRamTest	CH	N/A	Disallowed
upTime	CH	N/A	Disallowed
uRouteShow	VF	All	Allowed
usbStorage	CH	N/A	Disallowed
userConfig	CH/VF	All/NA	Disallowed
version	VF	N/A	Allowed
wwn	VF, CH/ VF	All	Disallowed
wwnAddress	VF	All	Disallowed
wwnRecover	VF, CH/ VF	All	Disallowed
zone	VF	All	Disallowed
zoneAdd	VF	All	Disallowed
zoneCreate	VF	All	Disallowed
zoneDelete	VF	All	Disallowed
zoneHelp	Disallowed	N/A	Disallowed
zoneObjectCopy	VF	All	Disallowed
zoneObjectExpunge	VF	All	Disallowed
zoneObjectRename	VF	All	Disallowed
zoneObjectReplace	VF	All	Disallowed
zoneRemove	VF	All	Disallowed
zoneShow	VF	All	Disallowed

Revision History

FOS-82x-Command-RM110; 22 June 2021

New Command

- sysHealth – Performs a PCIe link test between the standby CP and the port or core blades in the chassis.

Modified Commands

- aaaConfig – Added the new **-tls_mode starttls | ldaps** option and its description.
- portCfgLossTov – Replaced a command output example.
- userConfig – Modified the command description for **-r** *role* and **-c** *chassis_role.*

FOS-82x-Command-RM109; 01 October 2020

Modified Commands

- configDownload, configUpload, and supportSave – Modified the *user* and *user_name* descriptions to include supported characters.
- dnsConfig – Modified `serverip1` and `serverip2` to `-serverip1` and `-serverip2`.
- extnCfg – Removed an extra `-ve` and `/` in the `slot` option and edited the description.
- ficonShow – Edited the description for **0x40**.
- firmwareKeyShow – Modified the command description.
- fruDump – Edited the command page for accuracy.
- ipAddrSet and ron – Added a statement to say that on a chassis-based system, the command validates whether RON is set or not.
- syslogAdmin – Modified the synopsis and description to separate the `-secure` and `-port` options.

FOS-82x-Command-RM108; 26 June 2020

New Command

- fruDump – Collects limited debug information related to field-replaceable units (FRUs).

Modified Commands

- portCfgLongDistance – Modified the description of **LE (3)**.
- psShow – Modified the command output examples.
- relayConfig – Removed a note that was not supported.
- userConfig – Modified the description of *username.*

FOS-82x-Command-RM107; 20 December 2019

Modified Commands

- ethIf – Updated the description and output to include interactive mode.

- firmwareCleanInstall and firmwareDownload – Included the `-acceptEULA` and `-showEULA` operands and their descriptions.
- portCfgShow – Included the description for the **8G Non-DFE** option.

FOS-82x-Command-RM106; 12 September 2019

Added the Shell Function Commands section to detail shell function commands and usage.

Modified Commands

- ipAddrShow – Included a statement to say that IPv6 addresses/gateways are displayed only when a static IPv6 address/gateway or DHCPv6 or an autoconfigured address/gateway is configured.
- mapsConfig – Included a note to say that `--raslogMode` is not supported on the Brocade Analytics Monitoring Platform.
- portCfgDPort – Modified the description of `--enable -dwdm` and `--disable -dwdm`.
- portErrShow – Modified the description of `pcs err` to include 32Gb/s ports.
- supportLink – Modified the description of `-sdate` and `-period`.
- trunkShow – Updated the minimum deskew value from 5 through 14. This value is set based on the link speed for Brocade Gen 6 platforms.

Deprecated Commands

- ipSecConfig
- secCertUtil
- switchUpTime

FOS-821-Command-RM105; 02 July 2019

Included the statement "The command passed as an argument must use only lowercase letters in the `classconfig --showcli` command." under the Determining the RBAC Permissions for a Specific Command section.

Modified Commands

- classConfig and supportLink – Corrected a typo.
- mapsConfig – Updated the description of the `sfp_marginal` operand.

FOS-821-Command-RM104; 18 March 2019

The documentation errata described in the following section has the update and correction applicable to this document and also to the man page for Fabric OS 8.2.1x. This change will be incorporated into the next revision of the document and man page.

Document Errata

Modified the minimum deskew value of Brocade Gen 6 platforms as stated below:

- trunkShow – The minimum deskew value for Brocade Gen 6 platforms is from 5 through 14 and is set based on the link speed.

FOS-821-Command-RM103; 13 February 2019

New Commands

- nodeWWN – Adds a WWN to the OUI database, displays the WWNs added by the user, displays usage information, and also dumps debug information into a file.
- supportLink – Configures a Brocade Support Link (BSL) to collect and upload critical device information to a BSL server module over a secured channel.

Modified Commands

- appLoginHistory – Updated to refer to the new Brocade SANnav Management Portal.
- bladeDisable – Updated the command description.
- fabricName – Documented the new options `--set`, `--clear`, and `--help`.
- ldapCfg – Updated the `ldaprole` allowed character length to 64 characters.
- portCfgFec – Updated the command output example to reflect the new warning messages.
- portDPortTest – Updated the output example to include the new warning message for D_Port long distance cable configuration.
- portShow – Updated the `--connect-count` option and its description for better clarity.
- secCertMgmt – Included `kafka` to the certification types.
- switchShow – Documented the Disabled (Port Throttled) state.

FOS-821-Command-RM102; 17 October 2018

New Command

- portCfgCleanAddress – Sets the associated port configuration either to enable or disable Clean Address Bit support.

Modified Commands

- agShow, ficonCupSet, lacp, and portCfgNPort – Removed a statement in Notes.
- ficonCupShow – Updated the `hlthchk_log` description.
- ipFilter – Updated the command description.
- lldp – Updated the format of `[slot/]port|port_range` in the synopsis.
- portCfgEncrypt – Updated the command description.
- portCfgShow – Added a Clean Address Bit description and updated the command output example.
- sddQuarantine – Updated the Notes statement to remove Access Gateway as there are no restrictions for it.
- switchShow – Updated to correct a typo.

FOS-821-Command-RM101; 28 September 2018

- Revised the publication number.
- Updated the document template.
- Added "Revision History" to the document.

FOS-821-Command-RM100; 28 August 2018

New Commands

- bladePortMap – Displays the slot or port information.

- deviceLogin – Lets an administrator rebalance links manually during a maintenance window or during low system activity.
- factoryFanShow – Retrieves the fan sensor information from an Energy Management module and displays the values for each unit.
- psUtil – Upgrades the microcontroller firmware in Brocade X6 power supplies.

Modified Commands

- aaaConfig – Updated the synopsis "`aaa1[;aaa2`" to include the missing bracket.
- chassisName – Updated the name description.
- cliHistory – Updated the description to include the saved information "IP address of the Telnet session or an Interface name."
- configDownload – Removed the `-force` option.
- configure – Added the `--query`, `--show`, `--set`, and `--default` operands. Moved Secure Socket Layer (SSL) attributes and Web Tools attributes to the `configureChassis` command. Removed Remote Procedure Call Daemon (RPCD) attributes as they are not supported. Updated the description to detail the interactive mode.
- configureChassis – Added Secure Socket Layer (SSL) attributes and Web Tools attributes and updated the command output examples.
- extnCfg – Added support for Brocade 7810 switch and corrected a typo in `--show`.
- faPwwn, fcipLedTest, fcipPathTest, licenseShow, licenseSlotCfg, lldp, lsCfg, portCfgGE, portCfgOctetSpeedCombo, portCfgShow, and usbStorage – Added support for the Brocade 7810 Switch.
- fddCfg – Updated the notes to detail the FCS policy.
- fipsCfg – Updated the notes.
- fosExec – Updated the `-cmd` "`cmd [args]`" description.
- frameLog – Updated the Type description to include missing types.
- gePortPerfShow – Included `-slot` to the synopsis.
- ipFilter – Updated the `-sip` and `-dip` descriptions.
- ipSecConfig – Updated to say that this command is not supported in FOS 8.2.1.
- ldapCfg – Updated the `-l` *LF_ID_list* description.
- lsanZoneShow – Updated the command output example.
- mapsConfig – Added `re_balance` to the *actions_list* option and output example.
- mapsDb – Updated the command output examples to show Imbalanced ports.
- mapsRule – Added `DEV_LOGIN_DIST` to the Fabric Performance Impact monitor category.
- mapsSam – Updated the command description.
- motd – Updated the maximum length of the `--set` string to 1022.
- mgmtApp – Added the `keepalive` option.
- passwd – Updated the *user_account* description.
- passwdCfg – Added the `-minDiff` option.
- portCfg – Added the `fast-deflate` option and support for the Brocade 7810 Switch.
- portCfgGE – Removed the reference to FC8-64 as it is not supported.
- portCfgFillword – Removed the `-mediatype` option.
- portCfgNPIVPort – Added the `mode` and `--setloginlimit` operands.
- portChannel – Removed the `-speed` and *ponum* options. Updated the `-priority` *value* range.
- portCmd – Added support for the Brocade 7810 Switch and corrected a typo in `--summary`.
- portEncCompShow – Updated the command output example.
- portImpair – Corrected a minor typo.
- portName – Updated the name description to include supported characters.

- portStatsShow – Removed references to the Brocade 7800 device.
- psShow – Added the `-v` option.
- rootAccess – Removed the `-force` option.
- sddQuarantine – Added AG support.
- sfpShow – Updated the command output example.
- supportShow – Added support for the Brocade 7810 Switch.
- supportShowCfgShow – Updated the command output example.
- switchShow – Updated the `Copper and Optical` options to say that it is supported only in the Brocade 7810 Switch.

Deprecated Commands

- portCfgGeMediaType