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StorCLI

Reference Manual

January 2013

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Revision History

Version and Date	Description of Changes
Rev. F, January 2013	■ Added the pi and preventpiimport options to Table 4. ■ Added a note and a caution message at the start of Chapter 4, Working with the Storage Command Line Tool. ■ Added a note in Section 4.3.9, Drive Secure Erase Commands. ■ Updated Section 4.4.2, Delete Virtual Drives Commands, for using the `force` option. ■ Added Section 4.4.7, Virtual Drive Erase Commands. ■ Updated Section 4.4.6, Virtual Drive Initialization Commands, for using the `force` option. ■ Added the `storcli /cx/bbu show modes` command in Section 4.9, BBU Commands. ■ Added Section 4.2.7, Controller Cache Command.

NOTE This Revision History lists only the changes made to the current version of the document. For a complete list of all revisions made to the previous versions of this document since its original publication, see Appendix D, Revision Information.

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Chapter 1: Introduction

1.1 Overview

The Storage Command Line Tool (StorCLI) is the command line management software designed for the MegaRAID® product line. The StorCLI is a command line interface that is designed to be easy to use, consistent, and easy to script. This document is the reference manual for installing and using the Storage Command Line Tool, and it explains the various features of the Storage Command Line Tool.

NOTE The legacy commands are deprecated from this guide.

1.2 Support for MegaCLI Commands

The MegaCLI commands can be executed on the Storage Command Line (StorCLI) tool. A single binary is output for the StorCLI commands and its equivalent MegaCLI commands. See Appendix B, MegaCLI Commands to StorCLI Command Conversion, for the information for conversion from MegaCLI commands to StorCLI commands.

1.3 Devices Supported by the StorCLI Tool

The StorCLI tool is designed to work with the MegaRAID product line. The StorCLI tool supports the following MegaRAID products.

- The 926*x* product line.
- The 928*x* product line.
- The 924*x* product line.
- LSI® MegaRAID SAS iMR
- LSI MegaRAID SAS 9280-8e
- LSI MegaRAID SAS 9260CV-8i
- LSI MegaRAID SAS 9266CV-8i
- LSI MegaRAID SAS 9285-8e

Chapter 2: Installation

The MegaRAID controllers can be used with the following operating systems for Intel and AMD 32-bit and 64-bit x86-based motherboards:

- Microsoft® Windows® Server 2008 R2
- Microsoft Windows 7 (32/64 bit)
- Red Hat® Enterprise Linux® 5.8 (32/64 bit)
- Red Hat Enterprise Linux 6.1
- Red Hat Enterprise Linux 6.2 (32/64 bit)
- SUSE® Linux Enterprise Server 11 SP2 (32/64 bit)
- SUSE Linux Enterprise Server 10 SP4 (32/64 bit)
- Fedora Core Linux 15
- VMware® ESX 4.0
- VMware ESX 4.1 U2
- VMware ESXi 4.1 U2
- VMware ESXi 5.0 U1
- Solaris
- FreeBSD
- EFI

NOTE The LSISAS2208 and LSISAS2108 controllers provide support for Microsoft Windows 8 and Microsoft Windows Server 2012 operating systems.

2.1 Installing StorCLI on Microsoft Windows Operating Systems

The Windows StorCLI binary is provided in a binary format, and no separate installation is required.

1. Copy the binary file from the CD or from the LSI website.
2. Place the binary file in the directory from which you want to run the Storage Command Line Tool, and run the tool.

NOTE StorCLI must be run with the administrator privileges.

2.2 Installing StorCLI on Linux Operating Systems

To install StorCLI on Linux operating systems, perform the following steps:

1. Unzip the StorCLI package.
2. To install the StorCLI RPM, run the `rpm -ivh <StorCLI-x.xx-x.noarch.rpm>` command.
3. To upgrade the StorCLI RPM, run the `rpm -Uvh <StorCLI-x.xx-x.noarch.rpm>` command.

2.3 Installing StorCLI on VMware Operating Systems

To install StorCLI on VMware operating systems, run the following syntax from the command line:

```
esxcli software vib install –v=<path-to-vib-package>
```

Example:

```
esxcli software vib install
-v=/vmfs/volumes/datastore1/StorCliMN/vmware-esx-StorCli-1.01.04.vib
```

2.4 Installing StorCLI on FreeBSD Operating Systems

The FreeBSD StorCLI binary is provided in a binary format, and no separate installation is required.

1. Copy the binary file from the CD or from the LSI website.
2. Place the binary file in the directory from which you want to run the Storage Command Line Tool, and run the tool.

2.5 Installing StorCLI on the Microsoft EFI

The EFI StorCLI binary is provided in a binary format, and no separate installation is required.

1. Copy the binary file from the CD or from the LSI website.
2. Place the binary file in the directory from which you want to run the Storage Command Line Tool, and run the tool.

2.6 Installing StorCLI on Solaris Operating Systems

To install StorCLI on Solaris operating systems, run the following command:

```
pkgadd –d Storcli.pkg
```

Chapter 3: StorCLI Command Syntax

This chapter describes the StorCLI command syntax and the valid values for each parameter in the general command syntax.

NOTE To get the output in JSON format, add `J` at the end of the command syntax.
Example: `storcli /cx show <property1>|<property2> J`.

NOTE JSON format output is not supported in the EFI operating system. The EFI platform ignores the `J` when it is added at the end of the command syntax.

NOTE Background operations are blocked in the EFI and HII environments and these operations are resumed in the operating system environments.

The StorCLI syntax uses the following general format:

```
<[object identifier]> <verb> <[adverb | attributes | properties] > <[key=value]>
```

The StorCLI tool supports the object identifiers listed in the following table.

Table 1 Object Identifiers in the StorCli Command Syntax

Object Identifier	Description
No object identifier specified	If there is no object identifier, the command is a system command.
`/cx`	This object identifier is for controller *x* .
`/cx/vx`	This object identifier is for a virtual drive *x* on controller *x*.
`/cx/vall`	This object identifier is for all virtual drives on controller *x*.
`/cx/ex`	This object identifier is for an enclosure *x* on controller *x*.
`/cx/eall`	This object identifier is for all enclosures on controller *x*.
`/cx/fx`	This object identifier is for a foreign configuration *x* on controller *x*.
`/cx/fall`	This object identifier is for all foreign configurations on controller *x*.
`/cx/ex/sx`	This object identifier is for the drive is slot *x* on enclosure *x* on controller *x*.
`/cx/sx`	This object identifier represents the drives that are directly attached to controller *x*.
`/cx/ex/sall`	This object identifier is for all the drives on enclosure *x* on controller *x*.
`/cx/dx`	This object identifier is for the drive group *x* on enclosure *x* on controller *x*.
`/cx/dall`	This object identifier is for the all drive groups on enclosure *x* on controller *x*.

NOTE If enclosures are not used to connect physical drives to the controller, you do not specify the enclosure ID in the command.

The StorCLI tool supports the following verbs.

Table 2 Verbs in the StorCli Command Syntax

Verbs	Description
`add`	This verb adds virtual drives, JBODs, and so on to the object identifier.
`del`	This verb deletes a drive, value, or property of the object identifier.
`set`	This verb sets a value of the object identifier.
`show`	This verb shows the value and properties of the object identifier.
`pause`	This verb pauses an ongoing operation.
`resume`	This verb resumes paused operation.
`suspend`	This verb suspends an ongoing operation. A suspended operation cannot be resumed.
`compare`	This verb compares an input value with a system value.
`download`	This verb downloads and flashes a file to the target.
`start`	This verb starts an operation.
`flush`	This verb flushes a controller cache or a drive cache.
`stop`	This verb stops an operation that is in progress. A stopped process cannot be resumed.
`import`	This verb imports the foreign configuration into the drive.
`expand`	This verb expands the size of the virtual drive.

- `<[adverb | attributes | properties] >` – Specifies what the verb modifies or displays.
- `<[key=value]>` – Specifies a value, if a value is required by the command.

Chapter 4: Working with the Storage Command Line Tool

This chapter describes the commands supported by the Storage Command Line Tool.

NOTE The Storage Command Line Tool is not case sensitive.

CAUTION The order in which you specify the command options should be the same as in the User Guide; otherwise, the command will fail.

NOTE The Storage Command Line Tool does not support the Snapshot feature.

4.1 System Commands

4.1.1 System Show Commands

The Storage Command Line Tool supports the following system show commands:

```
storcli show
storcli show all
storcli show ctrlcount
storcli show help
storcli -v
```

The detailed description for each command follows.

storcli show

This command shows a summary of controller and controller-associated information for the system. The summary includes the number of controllers, the host name, the operating system information, and the overview of existing configuration.

storcli show all

This command shows the list of controllers and controller-associated information, information about the drives that need attention, and advanced software options.

storcli show ctrlcount

This command shows the number of controllers detected in the server.

storcli show help

This command shows help for all commands at the server level.

storcli -v

This command shows the version of the Storage Command Line Tool.

4.2 Controller Commands

Controller commands provide information and perform actions related to the specified controller, such as the `/c0` controller. The Storage Command Line Tool supports the controller commands described in this section.

4.2.1 Show and Set Controller Properties Commands

Table 3 Controller Commands Quick Reference Table

Commands	Value Range	Description
`show <properties>`	See Table 4	Shows specific controller properties.
`set <properties>`	See Table 4	Sets controller properties.
`show`	`all`: Shows all properties of the virtual drive. `freespace`: Shows the freespace in the controller. See Section 4.2.2, Controller Show Commands.	Shows physical drive information.

This section provides command information to show and set controller properties.

NOTE You cannot set multiple properties with a single command.

The generalized syntax for show controller properties command is as follows.

storcli /cx show <*property*>

This command shows the current value of the specified property on the specified controller.

General example output:

```
Status Code = 0
Status = Success
Description = None
Controller: 0
Property_name = Property_value
```

You can show the following properties using the `storcli /cx show <property1>|<property2>` command.

```
storcli /cx show abortcconerror
storcli /cx show activityforlocate
storcli /cx show alarm
storcli /cx show backplane
storcli /cx show batterywarning
storcli /cx show bgirate
storcli /cx show bootwithpinnedcache
storcli /cx show cachebypass
storcli /cx show cacheflushint
storcli /cx show ccrate
storcli /cx show clusterenable
storcli /cx show coercion
storcli /cx show consistencycheck|cc
storcli /cx show copyback
storcli /cx show directpdmapping
storcli /cx show dimmerswitch|ds
```

```
storcli /cx show eccbucketleakrate
storcli /cx show eccbucketsize
storcli /cx show enableeghsp
storcli /cx show enableesmarter
storcli /cx show enableeug
storcli /cx show exposeencldevice
storcli /cx show jbod
storcli /cx show loadbalancemode
storcli /cx show maintainpdfailhistory
storcli /cx show migraterate
storcli /cx show ncq
storcli /cx show patrolread|pr
storcli /cx show perfmode
storcli /cx show pi
storcli /cx show preventpiimport
storcli /cx show prcorrectunconfiguredareas
storcli /cx show prrate
storcli /cx show rebuildrate
storcli /cx show rehostinfo
storcli /cx show restorehotspare
storcli /cx show safeid
storcli /cx show smartpollinterval
storcli /cx show spinupdelay
storcli /cx show spinupdrivecount
storcli /cx show time
storcli /cx show usefdeonlyencrypt
storcli /cx show memscrubpatterns
storcli /cx show badblocks
storcli /cx(x|all) show PI
storcli /cx(x|all) show preventpiimport
```

storcli /*cx* set <*property*>=<*value*>

General example output:

```
Status Code = 0
Status = Success
Description = None

Controller 0, new Property_name = Property_value
```

The following commands are examples of the properties that can be set using the `storcli /cx set <property>=<value>` command:

```
storcli /cx set  abortcconerror=<on|off>
storcli /cx set  termlog[=on|off|offthisboot]
storcli /cx set  activityforlocate=<on|off>
storcli /cx set  alarm=<on|off|silence>
storcli /cx set  backplane=<value>
storcli /cx set  batterywarning=<on|off>
storcli /cx set  bgirate=<value>
storcli /cx set  bootwithpinnedcache=<on|off>
storcli /cx set  cachebypass=<on|off>
storcli /cx set  cacheflushinterval=<value>
storcli /cx set  ccrate=<value>
storcli /cx set  coercion=<value>
```

```
storcli /cx set  consistencycheck|cc=[off|seq|conc][delay=value]
[starttime=yyyy/mm/dd hh] [excludevd=x-y,z]
storcli /cx set  clusterenable=<value>
storcli /cx set  copyback=<on|off> type=<smartssd|smarthdd|all>
storcli /cx set  directpdmapping=<on|off>
storcli /cx set  eccbucketleakrate=<value>
storcli /cx set  eccbucketsize=<value>
storcli /cx set  enableeghsp=<on|off>
storcli /cx set  enableesmarter=<value>
storcli /cx set  enableeug=<on|off>
storcli /cx set  exposeencldevice=<on|off>
storcli /cx set  dimmerswitch|ds=<on|off type=1|2|3|4>
storcli /cx set  foreignautoimport=<on|off>
storcli /cx set  jbod=<on|off>
storcli /cx set  loadbalancemode=<value>
storcli /cx set  maintainpdfailhistory=<on|off>
storcli /cx set  migraterate=<value>
storcli /cx set  ncq=<on|off>
storcli /cx set  patrolread|pr {=on mode=<auto|manual>}|{off}
storcli /cx set  perfmode=<value>
storcli /cx set  pi=<on|off>
storcli /cx set  preventpiimport=<on|off>
storcli /cx set  prcorrectunconfiguredareas=<on|off>
storcli /cx set  prrate=<value>
storcli /cx set  rebuildrate=<value>
storcli /cx set  restorehotspare=<on|off>
storcli /cx set  smartpollinterval=<value>
storcli /cx set  spinupdelay=<value>
storcli /cx set  spinupdrivecount=<value>
storcli /cx set  stoponerror=<on|off>
storcli /cx set  usefdeonlyencrypt=<on|off>
storcli /cx set  time=yyyymmdd hh:mm:ss|systemtime
storcli /cx set  usefdeonlyencrypt=<on|off>
```

The following table lists and describes the properties for the `show` and `set` commands.

Table 4 Properties for Show and Set Commands

Property Name	Set Command Range	Description
`abortcconerror`	`on|off`	Aborts consistency check when it detects an inconsistency.
`activityforlocate`	`on|off`	Enables/disables drive activity, drive activity locates function for systems without SGPIO/SES capabilities.
`alarm`	`on|off|silence` `silence`: Silences the alarm.	Enables/disables alarm on critical errors.
`backplane`	`0`: Use autodetect logic of backplanes, such as SGPIO and I2C SEP using GPIO pins. `1`: Disable autodetect SGPIO. `2`: Disable I2C SEP autodetect. `3`: Disable both the autodetects.	Configures enclosure detection on a non-SES/expander backplane.
`batterywarning`	`on|off`	Enables/disables battery warnings.
`bgirate`	0 to 100	Sets background initialization rate in percentage.

Table 4 Properties for Show and Set Commands (Continued)

Property Name	Set Command Range	Description
cacheflushint	0 to 255, default value 4	Sets cache flush interval in seconds.
ccrate	0 to 100	Sets consistency check rate in percentage.
coercion	0: No coercion 1: 128 MB 2: 1 GB	Sets drive capacity in coercion mode.
consistencycheck	See Section 4.2.3.3, Consistency Check.	See Section 4.2.3.3, Consistency Check.
copyback	on|off type = smartssd|smarthdd|all smartssd: Copy back enabled for SSD drives. smarthdd: Copy back enabled for HDD drives. all: Copy back enabled for both ssd drives and HDD drives. Example: storcli /cx set copyback=on type=all	Enables/disables copy back for drive types.
directpdmapping	on|off	Enables/disables direct physical drive mapping. When enclosures are used, this feature is disabled; otherwise it should be enabled.
eccbucketleakrate	0 to 65535	Sets leak rate of the single-bit bucket in minutes (one entry removed per leak-rate).
eccbucketsize	0 to 255	Sets size of ECC single-bit-error bucket (logs event when full).
enableeghsp	on|off	Enables/disables the commissioning of otherwise incompatible global hot spare drives as Emergency Hot Spare (EHSP) drives.
enableesmarter	on|off	Enables/disables the commissioning of Emergency Hot Spare (EHSP) drives for Predictive Failure (PFA) events.
enableeug	on|off	Enables/disables the commissioning of Unconfigured Good drives as Emergency Hot Spare (EHSP) drives.
exposeencldevice	on|off	Enables/disables device drivers to expose enclosure devices; for example, expanders, SEPs.
dimmerswitch|ds	See Section 4.8, Dimmer Switch Commands.	See Section 4.8, Dimmer Switch Commands.
foreignautoimport	on|off	Imports foreign configuration automatically, at boot.
jbod	on|off	Enables/disables JBOD mode; by default, drives become system drives. **NOTE** Not supported by all controllers.
loadbalancemode	on|off	Enables/disables automatic load balancing between SAS phys or ports in a wide port configuration.
maintainpdfailhistory	on|off	Maintains the physical drive fail history.
migraterate	0 to 100	Sets data migration rate in percentage.
patrolread|pr	See Section 4.2.3.2, Patrol Read.	See Section 4.2.3.2, Patrol Read.

Table 4 Properties for Show and Set Commands (Continued)

Property Name	Set Command Range	Description
perfmode	0: Tuned to provide best IOPS, currently applicable to non-FastPath 1: Tuned to provide least latency, currently applicable to non-FastPath	Performance tuning setting for the controller.
pi	on|off	Enables/disables data protection on the controller.
preventpiimport	on|off	Enables/disables import data protection drives on the controller.
prcorrectunconfiguredareas	on|off	Correct media errors during PR by writing 0s to unconfigured areas of the disk.
prrate	0 to 100	Sets patrol read rate of the virtual drives in percentage.
rebuildrate	0 to 100	Sets rebuild rate of the drive in percentage.
reconrate	0 to 100	Sets reconstruction rate for a drive in percentage.
restorehotspare	on|off	Becomes a hot spare on insertion of a failed drive.
smartpollinterval	0 to 65535	Set time for polling of SMART errors in seconds.
spinupdrivecount	0 to 255	Sets number of drives that are spun up at a time.
spinupdelay	0 to 255	Sets spin-up delay between a group of drives or a set of drives, in seconds.
stoponerror	on|off	Stops the MegaRAID BIOS during POST, if any errors are encountered.
time	Valid time in *yymmdd hh:mm:ss* format or systemtime	Sets the controller time to your input value or the system time (local time in 24-hour format).
usefdeonlyencrypt	on|off	Enables/disables FDE drive-based encryption.

4.2.2 Controller Show Commands

The Storage Command Line Tool supports the following show commands:

```
storcli /cx show
storcli /cx show all
storcli /cx show freespace
```

The detailed description for each command follows.

storcli /*cx* show

This command shows the summary of the controller information. The summary includes basic controller information, foreign configurations, drive groups, virtual drives, physical drives, enclosures, and BBU information.

Input example:

```
storcli /c1 show
```

storcli /*cx* show all

This command shows all controller information, which includes basic controller information, bus information, controller status, advanced software options, controller policies, controller defaults, controller capabilities, scheduled tasks, miscellaneous properties, foreign configurations, drive groups, virtual drives, physical drives, enclosures, and BBU information.

Input example:

```
storcli /c0 show all
```

NOTE The PCI information displayed as a part of `storcli /cx show` and `storcli /cx show all` commands is not applicable for the FreeBSD operating system. Hence, the PCI information fields are displayed as N/A.

storcli /*cx* show freespace

This command shows the usable free space in the controller.

Input example:

```
storcli /c0 show freespace
```

4.2.3 Controller Background Tasks Operation Commands

4.2.3.1 Rebuild Rate

```
storcli /cx set rebuildrate=<value>
storcli /cx show rebuildrate
```

The detailed description for each command follows.

storcli /*cx* set rebuildrate=<*value*>

This command sets the rebuild task rate of the specified controller. The input value is in percentage.

Input example:

```
storcli /c0 set rebuildrate=30
```

NOTE A high rebuild rate slows down I/O processing.

storcli /*cx* show rebuildrate

This command shows the current rebuild task rate of the specified controller in percentage.

Input example:

```
storcli /c0 show rebuildrate
```

4.2.3.2 Patrol Read

The Storage Command Line Tool supports the following patrol read commands:

```
storcli /cx resume patrolread
storcli /cx set patrolread ={{on mode=<auto|manual>}|{off}}
storcli /cx set patrolread [starttime=<yyyy/mm/dd hh>] [maxconcurrentpd=<value>]
[includessds=<on|off>] [uncfgareas=<on|off>]
storcli /cx set patrolread  delay=<value>
storcli /cx show patrolread
storcli /cx start patrolread
storcli /cx stop patrolread
storcli /cx suspend patrolread
```

NOTE A patrol read operation is scheduled for all the physical drives of the controller.

The detailed description for each command follows.

storcli /*cx* resume patrolread

This command resumes a suspended patrol read operation.

Input example:

```
storcli /c0 resume patrolread
```

storcli /*cx* set patrolread {=on mode=<auto|manual>}|{off}

This command turns the patrol read scheduling on and sets the mode of the patrol read to automatic or manual.

Input example:

```
storcli /co set patrolread=on mode=manual
```

storcli /*cx* set patrolread [starttime=<*yyyy/mm/dd hh*>] [maxconcurrentpd=<*value*>] [includessds=<on|off>] [uncfgareas=on|off]

This command schedules a patrol read operation. You can use the following options for patrol read command.

Table 5 Set Patrolread Input Options

Option	Value Range	Description
starttime	A valid date and hour in 24 hours format	Sets the start time in *yyyy/mm/dd hh* format.
maxconcurrentpd	Valid number of physical drives present	Sets the number of physical drives that can be patrol read at a single time.
includessds	—	Include SSDs in the patrol read.
uncfgareas	—	Include the areas not configured in the patrol read.

NOTE Controller time is taken as a reference for scheduling a patrol read operation.

Input example:

```
storcli /c0 set patrolread=on starttime=2012/02/21 00
```

storcli /c*x* set patrolread [delay=<*value*>]

This command delays the scheduled patrol read in hours.

Input example:

```
storcli /c0 set patrolread delay=30
```

storcli /c*x* show patrolRead

This command shows the progress on the current patrol read in percentage.

Input example:

```
storcli /c0 show patrolread
```

storcli /c*x* start patrolread

This command starts the patrol read operation. This command starts a patrol read immediately.

Input example:

```
storcli /c0 start patrolread
```

storcli /c*x* stop patrolread

This command stops a running patrol read operation.

Input example:

```
storcli /c0 stop patrolread
```

NOTE You cannot resume a stopped patrol read.

storcli /c*x* suspend patrolread

This command pauses a running patrol read operation.

Input example:

```
storcli /c0 suspend patrolread
```

NOTE You can run this command only when a patrol read operation is running on the controller.

4.2.3.3 Consistency Check

The Storage Command Line Tool supports the following commands to schedule, perform, and view the status of a consistency check (CC) operation:

```
storcli /cx set consistencycheck|cc=[off|seq|conc][delay=value]
starttime=yyyy/mm/dd hh [excludevd=x-y,z]
storcli /cx show cc
storcli /cx show ccrate
```

The detailed description for each command follows.

storcli /*cx* set consistencycheck|cc=[off|seq|conc][delay=*value*] starttime=*yyyy/mm/dd hh* [excludevd=*x-y,z*]

This command schedules a consistency check (CC) operation. You can use the following options with the consistency check command.

Table 6 Set CC Input Options

Option	Value Range	Description
`cc`	`seq`: Sequential mode. `conc`: Concurrent mode. `off`: Turns off the consistency check	Sets CC to either sequential mode, or concurrent mode, or turns off the CC. **NOTE** The concurrent mode slows I/O processing.
`delay`	`-1` and any integer value.	Delay a scheduled consistency check. The value is in hours. A value of `0` makes the CC runs continuously with no delay (in a loop). **NOTE** Only scheduled consistency checks can be delayed.
`starttime`	A valid date and hour in 24-hours format.	Start time of a consistency check is *yyyy/mm/dd hh* format.
`excludevd`	The range should be less than the number of virtual drives.	Excludes virtual drives from the consistency checks. To exclude particular virtual drives, you can provide list of virtual drive names (V*x*,V*y* … format) or the range of virtual drives that you want to exclude from a consistency check (V*x*-V*y* format). If this option is not specified in the command, no virtual drives are excluded.

Input example:

```
storcli /c0 set CC=on starttime=2012/02/21 00 excludevd v0-v3
```

storcli /*cx* show cc

This command shows the consistency check schedule properties for a controller.

Input example:

```
storcli /c0 show cc
```

storcli /*cx* show ccrate

This command checks the status of a consistency check operation. The CC rate appears in percentage.

Input example:

```
storcli /c0 show ccrate
```

NOTE A high CC rate slows I/O processing.

4.2.4 Premium Feature Key Commands

The Storage Command Line Tool supports the following commands for premium feature keys:

```
storcli /cx set advancedsoftwareoptions(aso) key=<value> [preview] |
[deactivatetrialkey] [rehostcomplete]
storcli /cx show safeid
```

The detailed description for the command follows.

storcli /*cx* set advancedsoftwareoptions(aso) key=<*value*> [preview] | [deactivatetrialkey] [rehostcomplete][transfertovault]

This command activates advanced software options (ASO) for a controller. You can use the following options with the advanced software options command.

Table 7 Set Advanced Software Options Input Options

Option	Value Range	Description
`key`	40 alpha numeric characters.	Key to activate ASO on the controller. **NOTE** After they are activated, ASOs cannot be removed from the controller.
`deactivatetrialkey`	—	Deactivates the trial key applied on the specified controller.
`rehostcomplete`	—	Enables rehosting on the specified controller.
`transfertovault`	—	Transfers the ASO key to the vault and disables the ASO.

Input example:

```
storcli /c0 set Aso key=LSI0000
```

storcli /*cx* show safeid

This command shows the Safe ID of the specified controller.

Input example:

```
storcli /c0 show safeid
```

4.2.5 Controller Security Commands

The Storage Command Line Tool supports the following controller security commands:

```
storcli /cx compare securitykey=ssssss
storcli /cx delete securitykey
storcli /cx set securitykey keyid=kkkk
storcli /cx set securitykey=sssss [passphrase=sssss][keyid=sssss]
storcli /cx set securitykey=sssss  oldsecuritykey=ssss [passphrase=sssss]
[keyid=sssss]
```

The detailed description for each command follows.

storcli /*cx* compare securitykey=*ssssss*

This command compares and verifies the security key of the controller.

storcli /*cx* delete securitykey

This command deletes the security key of the controller.

Input example:

```
storcli /c0 delete securitykey
```

storcli /*cx* set securitykey keyId=*kkkk*

This command sets the key ID for the controller. The key ID is unique for every controller.

storcli /*cx* set securitykey=sssss [passphrase=sssss][keyid=*sssss*]

This command sets the security key for the controller. You can use the following options with the set security key command.

Table 8 Set Security Key Input Options

Option	Value Range	Description
passphrase	Should have a combination of numbers, upper case letters, lower case letters and special characters. Minimum of 8 characters and maximum of 32 characters.	String that is linked to the controller and is used in the next bootup to encrypt the lock key. If the passphrase is not set, the controller generates it by default.
keyid	—	Unique ID set for different controllers to help you specify a passphrase to a specific controller.

Input example:

```
storcli /c0 set securitykey=Lsi@12345 passphrase=Lsi@123456 keyid=1
```

storcli /*cx* set securitykey=*sssss* oldsecuritykey=*ssss* [passphrase=*sssss*][keyid=*sssss*]

This command changes the security key for the controller.

Input example:

```
storcli /c0 set securitykey=Lsi@12345 oldsecuritykey=pass123
passphrase=Lsi@123456 keyid=1
```

4.2.6 Flashing Controller Firmware Command

NOTE The Flashing Controller Firmware command is not supported in Embedded MegaRAID.

The following command flash the controller firmware.

storcli /*cx* download file=*filepath* [fwtype=<*value*>] [nosigchk] [noverchk] [resetnow]

This command flashes the firmware to the specified adapter from the given file location (*filepath* is the absolute file path). You can use the following options when you flash the firmware:

Table 9 Flashing Controller Firmware Input Options

Option	Value Range	Description
nosigchk	—	The application flashes the firmware even if the check word on the file does not match the required check word for the controller. **NOTE** You can damage the controller if a corrupted image is flashed using this option.
noverchk	—	The application flashes the controller firmware without checking the version of the firmware image.
fwtype	0: Application 1: TMMC	The firmware type to be downloaded. The application downloads the firmware for the controller. The TMMC downloads the firmware for the TMMC battery only. Default is 0 (application).
resetnow		Invokes online firmware update on the controller; you do not need to reboot the controller to make the update effective.

4.2.7 Controller Cache Command

The following command flushes the controller cache:

storcli /cx flush|flushcache

This command flushes the controller cache.

Input example:

```
storcli /c0 flushcache
```

4.3 Drive Commands

This section describes the drive commands, which provide information and perform actions related to physical drives. The following table describes frequently used virtual drive commands.

Table 10 Physical Drives Commands Quick Reference Table

Commands	Value Range	Description
`set`	`missing`: Sets the drive status as missing. `good`: Sets the drive status to unconfigured good. `offline`: Sets the drive status to offline. `online`: Sets the drive status to online.	Sets physical drive properties.
`show`	`all`: shows all properties of the physical drive. See Section 4.3.1, Drive Show Commands.	Shows virtual drive information.

4.3.1 Drive Show Commands

The Storage Command Line Tool supports the following drive show commands:

```
storcli /cx[/ex]/sx show
storcli /cx[/eall]/sall show
storcli /cx[/ex]/sx|sall show all
```

NOTE If enclosures are used to connect physical drives to the controller, specify the enclosure ID in the command. If no enclosures are used, you must specify the controller ID and slot ID.

The detailed description for each command follows.

storcli /*cx*[/*ex*]/*sx* show

This command shows the summary of the physical drive for a specified slot in the controller.

Input example:

```
storcli /c0/e0/s4,5 show
```

storcli /*cx*[/eall]/sall show

This command shows the summary information for all the enclosures and physical drives connected to the controller.

Input example:

```
storcli /c0/eall/sall show
```

storcli /*cx*[/*ex*]/*sx*|sall show all

This command shows all information of a physical drive for the specified slot in the controller. If you use the `all` option, the command shows information for all slots on the controller. *x* stands for a number, a list of numbers, a range of numbers, or all numbers.

Input examples:

```
storcli /c0/e3/s0-3 show all
storcli /c0/e35/sall show all
```

NOTE The `storcli /cx/sx show all` command shows tape drives information.

4.3.2 Missing Drives Commands

The Storage Command Line Tool supports the following commands to mark and replace missing physical drives:

```
storcli /cx[/ex]/sx insert array=a row=b
storcli /cx[/ex]/sx set missing
storcli /cx[/ex]/sx set offline
storcli /cx/dall
```

The detailed description for each command follows.

storcli /*cx*[/*ex*]/*sx* insert array=*a* row=*b*

This command replaces the configured drive that is identified as missing, and then starts an automatic rebuild.

Input example:

```
storcli /c0/e25/s3 insert array=2 row=1
```

storcli /*cx*[/*ex*]/*sx* set missing

This command marks a drive as missing.

Input example:

```
storcli /c0/s4 set missing
```

storcli /cx/dall

This command is used to find the missing drives.

storcli /cx[/ex]/sx set offline

This command marks the drive in an array as offline.

NOTE To set a drive that is part of an array as *missing*, first set it as *offline*. After the drive is set to *offline*, you can then set the drive to *missing*.

4.3.3 Set Drive State Commands

The Storage Command Line Tool supports the following commands to set the status of physical drives:

```
storcli /cx[/ex]/sx set jbod
storcli /cx[/ex]/sx set good [force]
storcli /cx[/ex]/sx set offline
storcli /cx[/ex]/sx set online
```

The detailed description for each command follows.

storcli /*cx*[/*ex*]/*sx* set jbod

This command sets the drive state to JBOD.

Input example:

```
storcli /c1/e56/s3 set jbod
```

storcli /*cx*[/*ex*]/*sx* set good [force]

This drive changes the drive state to unconfigured good. If the drive has the operating system in it, use the `force` option.

Input example:

```
storcli /c1/e56/s3 set good
```

storcli /*cx*[/*ex*]/*sx* set offline

This command changes the drive state to offline.

Input example:

```
storcli /c1/e56/s3 set offline
```

storcli /*cx*[/*ex*]/*sx* set online

This command changes the drive state to online.

Input example:

```
storcli /c1/e56/s3 set online
```

4.3.4 Drive Initialization Commands

When you initialize drives, all the data from the drives is cleared. The Storage Command Line Tool supports the following commands to initialize drives:

```
storcli /cx[/ex]/sx show initialization
storcli /cx[/ex]/sx start initialization
storcli /cx[/ex]/sx stop  initialization
```

The detailed description for each command follows.

storcli /*cx*[/*ex*]/*sx* show initialization

This command shows the current progress of the initialization progress in percentage.

Input example:

```
storcli /c0/e31/s4 show initialization
```

storcli /*cx*[/*ex*]/*sx* start initialization

This command starts the initialization process on a drive.

Input example:

```
storcli /c0/e31/s4 start initialization
```

storcli /*cx*[/*ex*]/*sx* stop initialization

This command stops an initialization process running on the specified drive. A stopped initialization process cannot be resumed.

Input example:

```
storcli /c0/e56/s1 stop initialization
```

4.3.5 Drive Firmware Download Commands

The Storage Command Line Tool supports the following command to download drive firmware:

storcli /*cx*[/*ex*]/*sx* download src=filepath [satabridge]

This command flashes the firmware with the specified file. The `satabridge` option lets you download the SATA bridge firmware in online mode.

Input example:

```
storcli /c0/e56/s1 download src=c:\file1.bin
```

4.3.6 Locate Drives Commands

The Storage Command Line Tool supports the following commands to locate a drive and activate the physical disk activity LED:

```
storcli /cx[/ex]/sx start locate
storcli /cx[/ex]/sx stop locate
```

The detailed description for each command follows.

storcli /*cx*[/*ex*]/*sx* start locate

This command locates a drive and activates the drive's LED.

Input example:

```
storcli /c0/e56/s1 start locate
```

storcli /*cx*[/*ex*]/*sx* stop locate

This command stops a locate operation and deactivates the drive's LED.

Input example:

```
storcli /c0/e56/s1 stop locate
```

4.3.7 Prepare to Remove Drives Commands

The Storage CLI supports the following commands to prepare the physical drive for removal:

```
storcli /cx[/ex]/sx spindown
storcli /cx[/ex]/sx spinup
```

The detailed description for each command follows.

storcli /*cx*[/*ex*]/*sx* spindown

This command spins down an unconfigured drive and prepares it for removal. The drive state is unaffiliated and it is marked offline.

Input example:

```
storcli /cx/e34/s4 spindown
```

storcli /*cx*[/*ex*]/*sx* spinup

This command spins up a spun-down drive and the drive state is unconfigured good.

Input example:

```
storcli /cx/e34/s4 spinup
```

4.3.8 Drive Security Commands

The Storage Command Line supports the following drive security command:

storcli /*cx*[/*ex*]/*sx* show securitykey keyid

This command shows the security key and key ID of the controller.

Input example:

```
storcli /c0/s4 show securityKey keyid
```

4.3.9 Drive Secure Erase Commands

The Storage Command Line supports the following drive erase commands:

```
storcli /cx[/ex]/sx secureerase [force]
storcli /cx[/ex]/sx start erase [simple|normal|thorough] [erasepatternA=<value1>]
[erasepatternB=<value2>]
storcli /cx[/ex]/sx stop erase
```

The detailed description for each command follows.

storcli /*cx*[/*ex*]/*sx* secureerase [force]

This command erases the drive's security configuration and securely erases data on a drive. You can use the `force` option as a confirmation to erase the data on the drive and the security information.

Input example:

```
storcli /c0/e25/s1 secureerase
```

NOTE This command deletes data on the drive and the security configuration and this data is no longer accessible. This command is used for SED drives only.

storcli /*cx*[/*ex*]/*sx* start erase [simple|normal|thorough] [erasepatternA=<*val1*>] [erasepatternB=<*val2*>]

This command securely erases non-SED drives. The drive is written with erase patterns to ensure that the data is securely erased. You can use the following options with the start erase command:

Table 11 Drive Erase Command Options

Options	Value Range	Description
`erase`	simple: Single pass, single pattern write normal: Three pass, three pattern write thorough: Nine pass, repeats the normal write 3 times	Secure erase type.
`erasepatternA`	8-bit value	Erase pattern A to overwrite the data.
`erasepatternB`	8-bit value	Erase pattern B to overwrite the data.

Input example:

```
storcli /c0/e25/s1 start erase thorough erasepatternA=10010011
erasepatternB=11110000
```

4.3.10 Rebuild Drives Commands

The following commands rebuild drives in the Storage Command Line Tool:

```
storcli /cx[/ex]/sx pause rebuild
storcli /cx[/ex]/sx resume rebuild
storcli /cx[/ex]/sx show rebuild
storcli /cx[/ex]/sx start rebuild
storcli /cx[/ex]/sx stop rebuild
```

NOTE If enclosures are used to connect physical drives to the controller, specify the enclosure ID in the command.

The detailed description for each command follows.

storcli /*cx*[/*ex*]/*sx* pause rebuild

This command pauses an ongoing rebuild process. You can run this command only for a drive that is currently rebuilt.

Input example:

```
storcli /c0/s4 pause rebuild
```

storcli /*cx*[/*ex*]/*sx* resume rebuild

This command resumes a paused rebuild process. You can run this command only when a paused rebuild process for the drive exists.

Input example:

```
storcli /c0/s4 resume rebuild
```

storcli /*cx*[/*ex*]/*sx* show rebuild

This command shows the progress of the rebuild process in percentage.

Input example:

```
storcli /c0/s5 show rebuild
```

storcli /*cx*[/*ex*]/*sx* start rebuild

This command starts a rebuild operation for a drive.

Input example:

```
storcli /c0/s4 start rebuild
```

storcli /*cx*[/*ex*]/*sx* stop rebuild

This command stops a rebuild operation. You can run this command only for a drive that is currently rebuilt.

Input example:

```
storcli /c0/s4 stop rebuild
```

4.3.11 Drive Copyback Commands

The Storage Command Line Tool supports the following commands for drive copyback:

```
storcli /cx[/ex]/sx pause copyback
storcli /cx[/ex]/sx resume copyback
storcli /cx[/ex]/sx show copyback
storcli /cx[/ex]/sx start copyback target=eid:sid
storcli /cx[/ex]/sx stop copyback
```

The detailed description for each command follows.

NOTE In the copyback commands, `cx[/ex]/sx` indicates the source drive and `eid:sid` indicates the target drive.

storcli /*cx*[/*ex*]/*sx* pause copyback

This command pauses a copyback operation. You can run this command only when there is a copyback operation running.

Input example:

```
storcli /c0/e25/s4 pause copyback
```

storcli /*cx*[/*ex*]/*sx* resume copyback

This command resumes a paused copyback operation. You can run this command only when there is a paused copyback process for the drive.

Input example:

```
storcli /c0/e25/s4 resume copyback
```

storcli /*cx*[/*ex*]/*sx* show copyback

This command shows the progress of the copyback operation in percentage.

Input example:

```
storcli /c0/e25/s4 show copyback
```

storcli /*cx*[/*ex*]/*sx* start copyback target=eid:sid

This command starts a copyback operation for a drive.

Input example:

```
storcli /c0/e25/s4 start copyback target=25:8
```

storcli /*cx*[/*ex*]/*sx* stop copyback

This command stops a copyback operation. You can run this command only on drives that have the copyback operation running.

Input example:

```
storcli /c0/e25/s4 stop copyback
```

NOTE A stopped rebuild process cannot be resumed.

4.3.12 Hot Spare Drive Commands

The following commands create and delete hot spare drives:

```
storcli /cx[/ex]/sx add hotsparedrive
{dgs=<n|0,1,2...>}[enclaffinity][nonrevertible]
storcli /cx/[ex]/sx delete hotsparedrive
```

NOTE If enclosures are used to connect the physical drives to the controller, specify the enclosure ID in the command.

The detailed description for each command follows.

storcli /*cx*[/*ex*]/*sx* add hotsparedrive [{dgs=<*n*|0,1,2...>}] [enclaffinity][nonrevertible]

This command creates a hot spare drive. You can use the following options to create a hot spare drive::

Table 12 Add Hotsparedrive Input Options

Option	Value Range	Description
dgs	Valid drive group number	Specifies the drive group to which the hot spare drive is dedicated.
enclaffinity	Valid enclosure number	Specifies the enclosure with which the hot spare is associated. If this option is specified, affinity is set; if it is not specified, there is no affinity. **NOTE** Affinity cannot be removed after it is set for a hot spare drive.
nonrevertible	—	Sets the drive as a nonrevertible hot spare.

Input example:

```
storcli /c0/e3/s4,5 add hotsparedrive
```

This command sets the drives /c0/e3/s4,5 as Global Hot spare.

Input example:

```
storcli /c0/e3/s6,8 add hotsparedrive dgs=0,1
```

This command sets /c0/e3/s6,8 as Dedicated Hot spare for disk groups 0,1.

storcli /*cx*/[*ex*]/*sx* delete hotsparedrive

This command deletes a hot spare drive.

Input example:

```
storcli /c0/e3/s4,5 delete hotsparedrive
```

4.3.13 Drive Security Commands

The Storage Command Line Tool supports the following drive security command:

```
storcli /cx[/ex]/sx show securitykey keyid
```

storcli /*cx*[/*ex*]/*sx* show securitykey keyid

This command shows the security key for secured physical drives.

Input example:

```
storcli /c0/e252/s1 show SecurityKey keyid
```

4.4 Virtual Drives Commands

The Storage Command Line Tool supports the following virtual drive commands. The following table describes frequently used virtual drive commands.

Table 13 Virtual Drives Commands Quick Reference Table

Commands	Value Range	Description
`add`	See Table 14 and Table 15	Creates virtual drives.
`delete`	`cc` or `cachecade`: Deletes CacheCade® virtual drives. `force`: Deletes the virtual drive where operating system is present.	Deletes a virtual drive.
`set`	See Table 14, Table 15, and Section 4.4.5, Change Virtual Drive Properties Commands	Sets virtual drive properties.
`show`	`all`: Shows all properties of the virtual drive. `cc`: Shows properties of CacheCade virtual drives. See Section 4.4.3, Virtual Drive Show Commands.	Shows virtual drive information.

4.4.1 Add Virtual Drives Commands

The Storage Command Line Tool supports the following commands to add virtual drives:

```
storcli /cx add vd type=raid[0|1|5|6|10|50|60][Size=<VD1_Sz>,<VD2_Sz>,..|*all]
[name=<VDNAME1>,..] drives=e:s|e:s-x|e:s-x,y;e:s-x,y,z [PDperArray=x][SED]
[pdcache=on|off|*default][pi] [DimmerSwitch(ds)=default|automatic(auto)|
*none|maximum(max)|MaximumWithoutCaching(maxnocache)][cachevd]
 [wt|*wb] [nora|*ra] [*direct|cached] [CachedBadBBU|*NoCachedBadBBU]
[Strip=<8|16|32|64|128|256|1024>] [AfterVd=X] [Spares = [e:]s|[e:]s-x|[e:]s-x,y]
[force]
```

```
storcli /cx add vd each type=raid0 [name=<VDNAME1>,..] [drives=e:s|e:s-x|e:s-x,y]
[SED] [pdcache=on|off|*default][pi] [DimmerSwitch(ds)=default|automatic(auto)|
*none|maximum(max)|MaximumWithoutCaching(maxnocache)] [wt|*wb] [nora|*ra]
[*direct|cached] [CachedBadBBU|*NoCachedBadBBU][Strip=<8|16|32|64|128|256|1024]

storcli /cx add VD cachecade|cc Type = raid[0,1,10] drives =
[e:]s|[e:]s-x|[e:]s-x,y [WT| WB] [assignvds = 0,1,2
```

This command creates a RAID configuration. You can use the following options to create the RAID volume:

NOTE * indicates default values.

The detailed description for each command follows.

storcli /cx add vd type=raid[0|1|5|6|10|50|60][Size=<VD1_Sz>,<VD2_Sz>,..|*all] [name=<VDNAME1>,..] drives=e:s|e:s-x|e:s-x,y;e:s-x,y,z [PDperArray=x][SED] [pdcache=on|off|*default][pi] [DimmerSwitch(ds)=default|automatic(auto)| *none|maximum(max)|MaximumWithoutCaching(maxnocache)][cachevd] [wt|*wb] [nora|*ra] [*direct|cached] [CachedBadBBU|*NoCachedBadBBU] [Strip=<8|16|32|64|128|256|1024>] [AfterVd=X] [Spares = [e:]s|[e:]s-x|[e:]s-x,y] [force]

Table 14 Add RAID Configuration Input Options

Option	Value Range	Description
type	RAID [0|1|5|6|10|50|60].	Sets the RAID type of the configuration.
size	Maximum size based on the physical drives and RAID level.	Sets the size of each virtual drive. The default value is for the capacity of all referenced disks.
name	15 characters of length.	Specifies the drive name for each virtual drive.
drives	Valid enclosure number and valid slot numbers for the enclosure.	In *e*:*s*|*e*:*s*-*x*|*e*:*s*-*x*,*y*: ■ *e* specifies the enclosure ID. ■ *s* represents the slot in the enclosure. ■ *e*:*s*-*x* is the range convention used to represent slots *s* to *x* in the enclosure e.
pdperarray	0 to 15.	Specifies the number of physical drives per array. The default value is automatically chosen.
sed	—	Creates security-enabled drives.
pdcache	on|off|default.	Enables or disables PD cache.
pi	—	Enables protection information.
dimmerswitch	default: Logical device uses controller default power-saving policy. automatic (auto): Logical device power savings are managed by firmware. none: No power-saving policy. maximum (max): Logical device uses maximum power savings. MaximumWithoutCaching (maxnocache): Logical device does not cache write to maximize power savings.	Specifies the power-saving policy. Sets to default automatically.
direct|cached	cached: Cached I/O. direct: Direct I/O.	Sets the logical drive cache policy. Direct I/O is the default.

Table 14 Add RAID Configuration Input Options (Continued)

Option	Value Range	Description
wt|wb	wt: Write through. wb: Write back.	Enables write through. Write back is the default.
nora|ra	ra: Read ahead. nora: No read ahead.	Disables read ahead. Enabled is the default.
cachedbadbbu|nocachedbadbbu	cachedbadbbu: Enable bad BBU caching. nocachedbadbbu: Disable bad BBU caching.	Enables caching when BBU is not functioning. Disabled is the default.
cachevd	—	Enables SSD caching on the created virtual drive.
strip	8, 16, 32, 64, 128, 256, 512, *1024*.	Sets the strip size for the RAID configuration.
aftervd	Valid virtual drive number.	Creates the VD in the adjacent free slot next to the specified VD.
spares	Number of spare physical drives present.	Specifies the physical drives that are to be assigned to a disk group for spares.
force	—	Forces a security-capable physical drive to be added to a drive group without security.

Input example:

```
storcli /c0 add vd type=raid10 size=2gb,3gb,4gb names=tmp1,tmp2,tmp3
drives=252:2-3,5,7 pdperarray=2
```

storcli /cx add vd cc|cachecade type=[0,1,10] drives=[e:]s|[e:]s-x|[e:]s-x,y [[wt|*wb]] [assignvds=0,1,2]

This command creates CacheCade virtual drives and associates existing virtual drives to CacheCade virtual drives. You can use the following options to create the CacheCade virtual drive.

Table 15 Add RAID Configuration Input Options

Option	Value Range	Description
cachecade	—	Creates a CacheCade virtual drive.
type	0, 1, 10	Sets the RAID type of the CacheCade virtual drive.
drives	Valid enclosure number and valid slot number	See the drives row in the previous table for format.
wt|*wb	wt: Enables write through. wb: Enables write back.	Enables or disables write cache.
assignvds	Valid virtual drive number (0 to 63)	Specifies the list of virtual drives associated with the new CacheCade virtual drives.

Input example:

```
storcli /c0 add vd type=raid10 size=2gb,3gb,4gb names=tmp1,tmp2,tmp3
drives=252:2-3, 7
```

4.4.2 Delete Virtual Drives Commands

The Storage Command Line Tool supports the following virtual drive delete commands:

```
storcli /cx/vx|vall del
storcli /cx/vx|vall del cachecade
storcli /cx/vx|vall del force
```

NOTE If the virtual drive has user data, you must use the `force` option to delete the virtual drive.
A virtual drive with a valid master boot record (MBR) and a partition table is considered to contain user data.

If you delete a virtual drive with a valid MBR without erasing the data and then create a new virtual drive using the same set of physical drives and the same RAID level as the deleted virtual drive, the old unerased MBR still exists at block0 of the new virtual drive, which makes it a virtual drive with valid user data. Therefore, you must provide the `force` option to delete this newly created virtual drive.

The detailed description for each command follows.

storcli /*cx*/*vx*|vall del

This command deletes a particular virtual drive or, when the `vall` option is used, all the virtual drives on the controller are deleted.

Input example:

```
storcli /c0/v2 del
```

NOTE This command deletes virtual drives. Data located on these drives will no longer be accessible.

storcli /*cx*/*vx*|vall del cachecade

This command deletes a specific CacheCade virtual drive on a controller, or all the CacheCade configuration for a controller.

Input example:

```
storcli /c0/vall del cachecade
```

NOTE This command deletes virtual drives. Data located on these drives will no longer be accessible.

storcli /*cx*/*vx*|vall del force

This command deletes a virtual drive only after the cache flush is completed. With the `force` option, the command deletes a virtual drive without waiting for the cache flush to complete.

Input example:

```
storcli /c0/v2 del force
```

NOTE This command deletes the virtual drive where the operating system is present. Data located on these drives and the operating system of the drive will no longer be accessible

4.4.3 Virtual Drive Show Commands

The Storage Command Line Tool supports the following virtual drive show commands:

```
storcli /cx/vx show
storcli /cx/vx show all
```

The detailed description for each command follows.

storcli /*cx*/*vx* show

This command shows the summary of the virtual drive information.

Input example:

```
storcli /c0/v0 show
```

storcli /*cx*/*vx* show all

This command shows all virtual drive information, which includes virtual drive information, physical drives used for the virtual drives, and virtual drive properties.

Input example:

```
storcli /c0/v0 show all
```

4.4.4 Preserved Cache Commands

If a virtual drive becomes offline or is deleted because of missing physical disks, the controller preserves the dirty cache from the virtual disk. The Storage Command Line Tool supports the following commands for preserved cache:

```
storcli /cx/vx delete preservedCache [force]
storcli /cx show preservedCache
```

The detailed description for each command follows.

storcli /*cx*/*vx* delete preservedcache

This command deletes the preserved cache for a particular virtual drive on the controller in missing state. Use the `force` option to delete the preserved cache of a virtual drive in offline state.

Input example:

```
storcli /c0/v1 delete preservedcache
```

storcli /*cx* show preservedCache

This command shows the virtual drive that has preserved cache and whether the virtual drive is offline or missing.

Input example:

```
storcli /c0 show preservedCache
```

4.4.5 Change Virtual Drive Properties Commands

The Storage Command Line Tool supports the following commands to change virtual drive properties:

```
storcli /cx/vx set accesspolicy=<rw|ro|blocked|rmvblkd>
storcli /cx/vx set cachedbadbbu=<on|off>
storcli /cx/vx set iopolicy=<cached|direct>
storcli /cx/vx set name=<namestring>
storcli /cx/vx set pdcache=<on|off|default>
storcli /cx/vx set rdcache=<ra|nora>
storcli /cx/vx set security
storcli /cx/vx|vall set ssdcaching=<on|off>
storcli /cx/vx set wrcache=<wt|wb|awb>
```

The detailed description for each command follows.

storcli /*cx*/*vx* set accesspolicy=<rw|ro|blocked|rmvblkd>

This command sets the access policy on a virtual drive to read write, read only, or blocked or rmvblkd (remove blocked).

Input example:

```
storcli /c0/v0 set accesspolicy=rw
```

storcli /*cx*/*vx* set cachedbadbbu=<on|off>

This command enables the use write cache for the virtual drive when the BBU is bad.

Input example:

```
storcli /c0/v0 set cachedbadbbu=on
```

storcli /*cx*/*vx* set iopolicy=<cached|direct>

This command sets the I/O policy on a virtual drive to cached I/O or direct I/O.

Input example:

```
storcli /c0/v0 set iopolicy=cached
```

storcli /*cx*/*vx* set name=<*namestring*>

This command names a virtual drive. The name is restricted to 15 characters

Input example:

```
storcli /c1/v0 set name=testdrive123
```

storcli /*cx*/*vx* set pdcache=<on|off|default>

This command sets the current disk cache policy on a virtual drive to on, off, or default setting.

Input example:

```
storcli /c0/v0 set pdcache=on
```

storcli /*cx*/*vx* set rdcache=<ra|nora>

This command sets the read cache policy on a virtual drive to read ahead, no read ahead, or adaptive read ahead.

Input example:

```
storcli /c0/v0 set rdcache=nora
```

storcli /*cx*/*vx* set security

This command secures the virtual drive.

Input example:

```
storcli /c0/v0 set security
```

NOTE The `off` option is not supported in the current release. If you run the command, a message saying that the command is not supported appears.

storcli /*cx*/*vx*|vall set ssdcaching=<on|off>

This command assigns CacheCade virtual drives. If `ssdcaching=off`, the CacheCade virtual drive is removed.

Input example:

```
storcli /c0/v0 set ssdcaching=on
```

storcli /*cx*/*vx* set wrcache=<wt|wb|awb>

This command sets the write cache policy on a virtual drive to write back, write through, or always write back.

Input example:

```
storcli /c0/v0 set wrcache=wt
```

4.4.6 Virtual Drive Initialization Commands

The Storage Command Line Tool supports the following commands to initialize virtual drives:

```
storcli /cx/vx show init
storcli /cx/vx start init [full][Force]
storcli /cx/vx stop init
```

NOTE If the virtual drive has user data, you must use the `force` option to initialize the virtual drive. A virtual drive with a valid MBR and partition table is considered to contain user data.

The detailed description for each command follows.

storcli /*cx*/*vx* show init

This command shows the initialization progress of a virtual drive in percentage.

Input example:

```
storcli /c0/v2 show init
```

storcli /*cx*/*vx* start init [full]

This command starts the initialization of a virtual drive. The default initialization type is fast initialization. If the `full` option is specified, full initialization of the virtual drive starts.

Input example:

```
storcli /cx/vx start init [full]
```

storcli /*cx*/*vx* stop init

This command stops the initialization of a virtual drive. A stopped initialization cannot be resumed.

Input example:

```
storcli /c0/v0 stop init
```

4.4.7 Virtual Drive Erase Commands

The Storage Command Line Tool supports the following command to erase virtual drives:

storcli /*cx*/*vx* erase [force]

This command erases the data on the virtual drive. You can use the `force` option as a confirmation to erase the data on the drive and the security information.

Input example:

```
storcli /c0/v0 erase[force]
```

NOTE If the virtual drive has user data, you must use the `force` option to erase the virtual drive. A virtual drive with a valid MBR and partition table is considered to contain user data.

4.4.8 Virtual Drive Migration Commands

NOTE The virtual drive migration commands are not supported in Embedded MegaRAID.

The Storage Command Line Tool supports the following commands for virtual drive migration (reconstruction):

```
storcli /cx/vx show migrate
storcli /cx/vx start migrate <type=raidlevel>
[option=<add|remove> disk=<e1/s1,e2/s2 ...> ]
```

The detailed description for each command follows.

storcli /*cx*/*vx* show migrate

This command shows the progress of the virtual drive migrate operation in percentage.

Input example:

```
storcli /c0/v0 show migrate
```

storcli /*cx*/*vx* start migrate <type=*raidlevel*> [option=<add | remove> disk=<e1:s1,e2:s2 ...>]

This command starts the reconstruction on a virtual drive to the specified RAID level by adding or removing disks from the existing virtual drive. You can use the following options with the start migrate command:

Table 16 Virtual Drive Migration Command Options

Options	Value Range	Description
`type = RAID level`	`RAID [0|1|5|6]`	The RAID level to which the virtual drive must be migrated.
`[option=<add | remove> disk=<e1:s1,e2:s2, …>]`	`add`: Adds disks to the virtual drive and starts reconstruction. `remove`: Removes disks from the virtual drive and starts reconstruction. `disk`: The enclosure number and the slot number of the disks to be added to the virtual drive.	Adds or removes disks from the virtual drive.

Virtual drive migration can be done between the following RAID levels.

Table 17 Virtual Drive Migration Table

Initial RAID level	Migrated RAID level
RAID 0	RAID 1
RAID 0	RAID 5
RAID 0	RAID 6
RAID 1	RAID 0
RAID 1	RAID 5
RAID 1	RAID 6
RAID 5	RAID 0
RAID 5	RAID 6
RAID 6	RAID 0
RAID 6	RAID 5

Input example:

```
storcli /c0/v3 start migrate type=r5 option=add disk=e5:s2,e5:s3
```

4.4.9 Virtual Drive Consistency Check Commands

The Storage Command Line Tool supports the following commands for virtual drive consistency checks:

```
storcli /cx/vx pause cc
storcli /cx/vx resume cc
storcli /cx/vx show cc
storcli /cx/vx start cc [force]
storcli /cx/vx stop cc
```

NOTE If enclosures are used to connect the physical drives to the controller, specify the IDs in the command.

The detailed description for each command follows.

storcli /*cx*/*vx* pause cc

This command pauses an ongoing consistency check process. You can resume the consistency check at a later time. You can run this command only on a virtual drive that has a consistency check operation running.

Input example:

```
storcli /c0/v4 pause cc
```

storcli /*cx*/*vx* resume cc

This command resumes a suspended consistency check operation. You can run this command on a virtual drive that has a paused consistency check operation.

Input example:

```
storcli /c0/v4 resume cc
```

storcli /*cx*/*vx* show cc

This command shows the progress of the consistency check operation in percentage.

Input example:

```
storcli /c0/v5 show cc
```

storcli /*cx*/*vx* start cc force

This command starts a consistency check operation for a virtual drive. Typically, a consistency check operation is run on an initialized virtual drive. Use the `force` option to run a consistency check on an uninitialized drive.

Input example:

```
storcli /c0/v4 start cc
```

storcli /*cx*/*vx* stop cc

This command stops a consistency check operation. You can run this command only for a virtual drive that has a consistency check operation running.

Input example:

```
storcli /c0/v4 stop cc
```

NOTE You cannot resume a stopped consistency check process.

4.4.10 Background Initialization Commands

The Storage Command Line Tool supports the following commands for background initialization:

```
storcli /cx/vx resume bgi
storcli /cx/vx set autobgi=<on|off>
storcli /cx/vx show autobgi
storcli /cx/vx show bgi
storcli /cx/vx stop bgi
storcli /cx/vx suspend bgi
```

The detailed description for each command follows.

storcli /*cx*/*vx* resume bgi

This command resumes a suspended background initialization operation.

Input example:

```
storcli /c0/v0 resume bgi
```

storcli /*cx*/*vx* set autobgi=<on|off>

This command sets the auto background initialization setting for a virtual drive to on or off.

Input example:

```
storcli /c0/v0 set autobgi=on
```

storcli /*cx*/*vx* show autobgi

This command shows the background initialization setting for a virtual drive.

Input example:

```
storcli /c0/v0 show autobgi
```

storcli /*cx*/*vx* show bgi

This command shows the background initialization progress on the specified virtual drive in percentage.

Input example:

```
storcli /c0/v0 show bgi
```

storcli /*cx*/*vx* stop bgi

This command stops a background initialization operation. You can run this command only for a virtual drive that is currently initialized.

Input example:

```
storcli /c0/v4 stop bgi
```

storcli /*cx*/*vx* pause bgi

This command suspends a background initialization operation. You can run this command only for a virtual drive that is currently initialized.

Input example:

```
storcli /c0/v4 pause bgi
```

4.4.11 Virtual Drive Expansion Commands

The Storage Command Line Tool supports the following commands for virtual drive expansion:

```
storcli /cx/vx expand size=<value> [expandarray]
storcli /cx/vx|vall show expansion
```

The detailed description for each command follows.

storcli /*cx*/*vx* expand size=<*value*> [expandarray]

This command expands the virtual drive within the existing array or if you replace the drives with drives larger than the size of the existing array. The value of the expand size is in GB. If the `expandarray` option is specified, the existing array is expanded. If this option is not specified, the virtual drive is expanded.

storcli /*cx*/*vx* show expansion

This command shows the expansion information on the virtual drive with and without array expansion.

Input example:

```
storcli /c0/v0 show expansion
```

4.5 Foreign Configurations Commands

The Storage Command Line Tool supports the following commands to view, import, and delete foreign configurations:

```
storcli /cx/fx|fall del|delete [ securitykey=sssssssssss ]
storcli /cx/fx|fall import [preview][ securitykey=sssssssssss ]
storcli /cx/fx|fall show [all] [ securitykey=sssssssssss ]
```

NOTE Provide the security key when importing a locked foreign configuration created in a different machine that is encrypted with a security key.

The detailed description for each command follows.

storcli /*cx*/*fx*|fall del| delete [securitykey=*sssssssssss*]

This command deletes the foreign configuration of a controller. Input the security key if the controller is secured.

Input example:

```
storcli /c0/fall delete
```

storcli /*cx*/*fx*|fall import [preview] [securitykey=*sssssssssss*]

This command imports the foreign configurations of a controller. The `preview` option shows a summary of the foreign configuration before importing it.

Input example:

```
storcli /c0/fall import
```

storcli /*cx*/*fx*|fall show [all][securitykey=*sssssssssss*]

This command shows the summary of the entire foreign configuration for a particular controller. The `all` option shows all the information of the entire foreign configuration.

NOTE The EID:Slot column is populated for the foreign PDs that are locked.

Input example:

```
storcli /c0/fall show preview foreign
storcli /c0/fall import preview
storcli /c0/fall show all
```

4.6 BIOS-Related Commands

The Storage Command Line Tool supports the following BIOS commands:

```
storcli /cx autobootselect(abs)=<on|off>
storcli /cx set bios=<on|off>
storcli /cx set headlessafemode|hsm=<on/off>
storcli /cx set headlesscontinueonerror|hcoe=<on/off>
storcli /cx set stoponerror|soe=<on|off>
storcli /cx show bios
```

The detailed description for each command follows.

storcli /*cx* set autobootselect|abs=<on|off>

This command enables the BIOS to select the best logical drive as the boot drive.

Input example:

```
storcli /cx set autobootselect=on
```

storcli /*cx* set bios=<on|off>
This commands enables or disables the MegaRAID controller's BIOS.

NOTE The legacy BIOS can load a limited number of the PCI device's BIOS. Disable the MegaRAID BIOS to avoid issues during POST.

Input example:

```
storcli /c0 set bios=enable
```

storcli /cx set headlessafemode|hsm=<on|off>

This command drives the MegaRAID BIOS to headless safe mode if any errors are encountered during POST. In headless safe mode, limited support exists for the StorCLI commands.

Input example:

```
storcli /c0/ set headlessafemode=on
```

storcli /cx set headlesscontinueonerror|hcoe=<on|off>

This command does not drive the MegaRAID BIOS to headless safe mode if any errors are encountered during POST, and it continues normal operation.

Input example:

```
storcli /c0/ set headlesscontinueonerror=on
```

storcli /c*x* set stoponerror|soe=<on|off>

This command stops the MegaRAID BIOS during POST if any errors are encountered.

Input example:

```
storcli /c0/ set StopOnError=on
```

storcli /c*x* show bios
This command shows if the BIOS is on or off.

Input example:

```
storcli /c0 show bios
```

4.6.1 OPROM BIOS Commands

The Storage Command Line Tool supports the following OPROM BIOS commands:

```
storcli /cx/ex/sx set bootdrive=on|off
storcli /cx/vx set bootdrive=on|off
storcli /cx show bootdrive
```

The detailed description for each command follows.

storcli /c*x*/e*x*/s*x* set bootdrive=on|off

This command sets the specified physical drive as the boot drive. During the next reboot, the BIOS looks for a boot sector in the specified physical drive.

Input example:

```
storcli /c0/e32/s4 set bootdrive=on
```

storcli /c*x*/v*x* set bootdrive=on|off

This command sets the specified virtual drive as the boot drive. During the next reboot, the BIOS looks for a boot sector in the specified virtual drive.

Input example:

```
storcli /c0/v0 set bootdrive=on
```

storcli/*cx*/*vx* show bootdrive

This command shows the boot drive for the controller. The boot drive can be a physical drive or a virtual drive.

Input example:

```
storcli /c0/v0 show bootdrive
```

4.7 Drive Group Commands

This section describes the drive group commands.

4.7.1 Drive Group Show

The Storage Command Line Tool supports the following drive group commands:

```
storcli /cx/dall show
storcli /cx/dall show all
storcli /cx/dall show cachecade
```

storcli /*cx*/dall show

This command shows the topology information of the drive group.

Input example:

```
storcli /c0/dall show
```

storcli /*cx*/dall show all

This command shows all available configurations in the controller which includes topology information, virtual drive information, physical drive information, free space, and free slot information.

Input example:

```
storcli /c0/dall show all
```

storcli /*cx*/dall show cachecade

This command shows all CacheCade virtual drive information.

Input example:

```
storcli /c0/dall show cachecade
```

4.8 Dimmer Switch Commands

4.8.1 Change Virtual Drive Power Settings Commands

The Storage Command Line Tool supports the following command to change the Dimmer Switch® setting. The Dimmer Switch is the power-saving policy for the virtual drive.

storcli /*cx*/*vx* set ds=<default | auto | none | max | maxnocache>

This command changes the power-saving properties on a virtual drive. See `dimmerswitch` in the following table for values.

Input example:

```
storcli /cx/vx set ds=default
```

NOTE Only the ds3 dimmer switch option cannot be selected in the Storage Command Line Tool.

You can use the following combinations for the dimmer switch commands:

```
storcli /cx set ds=off type=1|2|3|4
storcli /cx set ds=on type=1|2 [properties]
storcli /cx set ds=on type=3|4 defaultldtype=<value> [properties]
storcli /cx set ds=on [properties]
```

The following table describes the power-saving options.

Table 18 Dimmer Switch Input Options

Option	Value Range	Description
`dimmerswitch` or `ds`	`on|off`	Turns the dimmer switch option on.
`type`	`1`: Unconfigured `2`: Hot spare `3`: Virtual drive `4`: All	Specifies the type of drives that the dimmer switch feature is applicable. By default, it is activated for unconfigured drives, hot spare drives and virtual drives.
`defaultldtype`	`auto`: Logical device power savings are managed by the firmware. `none`: No power saving policy. `max`: Logical device uses maximum power savings. `maxnocache`: Logical device does not cache write to maximise power savings.	Specifies the default logical drive type that is created by the dimmer switch option; set to none automatically.
`properties`	`disableldps`: Interval in hours or time in *hh:mm* format `spinupdrivecount`: Valid enclosure number (0 to 255) `SpinUpEncDelay`: Valid time in seconds	Sets the interval or time in which the power-saving policy for the logical drive is turned off. Specifies the number of drives in the enclosure that are spun up. Specifies the delay of spin-up groups within an enclosure in seconds.

storcli/*cx* show DimmerSwitch(ds)

This command shows the current dimmer switch setting for the controller.

Input example:

```
storcli/c0 show ds
```

4.9 BBU Commands

The Storage Command Line Tool supports the following battery backup unit (BBU) commands:

```
storcli /cx/bbu show
storcli /cx/bbu show all
storcli /cx/bbu set bbuMode=<value>
storcli /cx/bbu set learndelayinterval=<value>
storcli /cx/bbu set powermode=sleep
storcli /cx/bbu set writeaceess=sealed
storcli /cx/bbu show modes
storcli /cx/bbu show properties
storcli /cx/bbu show status
storcli /cx/bbu start learn
```

The detailed description for each command follows.

storcli /*cx*/bbu show

This command shows the summary information for the BBU of a controller.

Input example:

```
storcli /c0/bbu show
```

storcli /*cx*/bbu show all

This command shows all the information of the BBU.

Input example:

```
storcli /c0/bbu show all
```

storcli /*cx*/bbu set bbuMode=<*value*>

This command sets the BBU mode for the BBU. The following table shows the various BBU modes:

Table 19 BBU Mode

Mode	Description
0	48 hours of retention[a] at 60 °C, 1-year Service Life.
1	12 hours of retention at 45 °C, 5-year Service Life, transparent learn.[b]
2	12 hours of retention at 55 °C, 3-year Service Life, transparent learn.
3	24 hours of retention at 45 °C, 3-year Service Life, transparent learn.
4	48 hours of retention at 45 °C, 3-year Service Life.
5	48 hours of retention at 55 °C, 1-year Service Life.
6	Same as the description for BBU mode 5. The BBU mode 6 enables you to receive events when the battery capacity reaches suboptimal and critical thresholds.

a. Indicates how long the battery can hold data in the controller's memory in case of accidental system shutdown.

b. The controller's performance is not affected during the battery's learn cycle.

Input example:

```
storcli /c0/bbu set bbuMode=2
```

NOTE BBU modes are supported on any iBBU08/09 bbu/controller combo and later-generation controllers.

storcli /*cx*/bbu set learndelayinterval=<*value*>

This command sets the learn delay interval for the BBU in hours. The value must be between 0 to 168 hours (7 days).

Input example:

```
storcli /c0/bbu set learnDelayInterval=30
```

storcli /*cx*/bbu set powermode=sleep

This command places the battery in low-power storage mode. The battery automatically exits this state after 5 seconds.

Input example:

```
storcli /c0/bbu set powermode=sleep
```

storcli /*cx*/bbu set writeaccess=sealed

This command seals the gas gauge EEPROM write access.

NOTE Use the `set writeaccess=sealed` command at manufacturing time.

Input example:

```
storcli /c0/bbu set writeaccess=sealed
```

storcli /*cx*/bbu show modes

This command shows the bbu mode information that includes the bbu mode number, retention time, service life, maximum temperature, and battery learn information.

Input example:

```
storcli /c0/bbu show modes
```

storcli /*cx*/bbu show properties

This command shows the BBU Learn properties for a controller.

Input example:

```
storcli /c0/bbu show properties
```

storcli /*cx*/bbu show status

This command shows the battery information, firmware status, and the gas gauge status.

Input example:

```
storcli /c0/bbu show status
```

storcli /*cx*/bbu start learn

This command starts the BBU learning cycle. The battery learn cycle is immediately started and no other parameters are required for this command.

Input example:

```
storcli /c0/bbu start learn
```

4.10 Enclosure Commands

The Storage Command Line Tool supports the following enclosure commands:

```
storcli /cx/ex download src=filepath[forceActivate]
storcli /cx/ex show all
storcli /cx/ex show status
```

The detailed description for each command follows.

storcli /*cx*/*ex* download src=filepath [forceactivate]

This command flashes the firmware with the file specified at the command line. The enclosure performs an error check after the operation. The following option can be used with the enclosure firmware download command.

Table 20 Enclosure Firmware Download Command Options

Option	Value Range	Description
forceactivate	—	Issues a command descriptor block (CDB) with write command with no data with command mode 0x0F (flash download already in progress). **NOTE** This option is used primarily to activate Scotch Valley Enclosures.

NOTE The firmware file that is used to flash the enclosure can be of any format. The StorCLI utility assumes that you provide a valid firmware image.

Input example:

```
storcli /c0/e0 download src=c:\file2.bin
```

storcli /*cx*/*ex* show all

This command shows all enclosure information, which includes general enclosure information, enclosure inquiry data, a count of enclosure elements, and information about the enclosure elements.

Input example:

```
storcli /c0/e0 show all
```

storcli /*cx*/*ex* show status

This command shows the enclosure status and the status of all the enclosure elements.

Input example:

```
storcli /c0/e0 show status
```

4.11 PHY Commands

The Storage Command Line Tool supports the following PHY commands:

```
storcli /cx/px|pall set linkspeed=0(auto)|1.5|3|6|12
storcli /cx/px|pall show
storcli /cx/px|pall show all
```

The detailed description for each command follows.

storcli /*cx*/*px*|pall set linkspeed=0(auto)|1.5|3|6|12

This command sets the PHY link speed. You can set the speed to 1.5 Gb/s, 3 Gb/s, 6 Gb/s, or 12 Gb/s. The linkspeed is set to `auto` when you specify `linkspeed = 0`.

Input example:

```
storcli /c0/p0 set linkspeed=1.5
```

storcli /*cx*/*px*|pall show

This command shows the basic PHY layer information.

Input example:

```
storcli /c1/p0 show
```

storcli /*cx*/*px*|pall show all

This command shows all the PHY layer information.

Input example:

```
storcli /c1/p0 show all
```

4.12 Logging Commands

The Storage Command Line Tool supports the following commands to generate and maintain log files:

```
storcli /cx clear events
storcli /cx delete termlog
storcli /cx show events file=<absolute path>
storcli /cx show eventloginfo
storcli /cx show termlog type=config|contents
```

The detailed description for each command follows.

storcli /*cx* delete events

This command deletes all records in the event log.

Input example:

```
storcli /c0 delete events
```

storcli /*cx* delete termlog

This command clears the TTY (firmware log for issue troubleshooting) logs.

Input example:

```
storcli /c0 delete termlog
```

storcli /*cx* show events file=<*absolute path*>

This command prints the system log to a text file and saves the file in the specified location.

Input example:

```
storcli /c0 show events file=C:\Users\brohan\test\eventreports
```

storcli /c*x* show eventloginfo

This command shows the history of log files generated.

Input example:

```
storcli /c0 show eventloginfo type=config
```

storcli /c*x* show termlog type=config|contents

This command shows the firmware logs. The `config` option shows the term log configuration (settings of TTY BBU buffering), the `contents` option shows the term log.The `contents` option is the default.

Input example:

```
storcli /c0 show termlog type=contents
```

Chapter 5: Frequently Used Tasks

5.1 Showing the Version of the Storage Command Line Tool

The following command shows the version of the command line tool:

```
Storcli –v
```

5.2 Showing StorCLI Help

The following command shows the command line tool help:

```
Storcli –h
```

Help appears for all the StorCLI commands

5.3 Showing System Summary Information

The following command shows the summary of all the controller information:

```
Storcli –show [all]
```

5.4 Showing Free Space in a Controller

The following command shows the free space available in the controller:

```
Storcli /cx show freespace
```

5.5 Adding Virtual Drives

The following command creates a virtual drive:

```
Storcli /cx add vd type=raid[0|1|5|6|10|50|60][Size=<VD1_Sz>,<VD2_Sz>,..|*all]
[name=<VDNAME1>,..] drives=e:s|e:s-x|e:s-x,y [PDperArray=x|auto*]
[SED] [pdcache=on|off|*default][pi] [DimmerSwitch(ds)=default|automatic(auto)|
*none|maximum(max)|MaximumWithoutCaching(maxnocache)] [wt|*wb] [nora|*ra]
[*direct|cached] [CachedBadBBU|*NoCachedBadBBU]
[strip=<8|16|32|64|128|256|512|1024] [AfterVd=x] [Spares=[e:]s|[e:]s-x|[e:]s-x,y]
[force]
```

The following inputs can be used when adding virtual drives:

- The controller in which the virtual drives are created.
- The RAID type of the virtual drives. The supported RAID types are 0, 1, 5, 6, 10, 50, 60.
- The size of each virtual drive.

- The drives that are used to create the virtual drives.

  drives = `e:s|e:s-x|e:s-x,y`

  Where:

  — *e* specifies the enclosure id.

  — *s* represents the slot in the enclosure.

  — `e:s-x` is the range conventions used to represents slots s to x in the enclosure e.
- The physical drives per array. The physical drives per array can be set to a particular value.
- The `SED` option creates security-enabled drives.
- The `PDcache` option can be set to `on` or `off`.
- The `pi` option enables protection information.
- The dimmer switch is the power save policy. It can be set to default or `automatic *, none, maximum(max),` or `MaximumWithoutCaching(maxnocache)`.
- The `wt` option disables write back.
- The `nora` option disables read ahead.
- The `cached` option enables the cached memory.
- The `CachedBadBBU` option enables caching when bbu is not functional.
- The `strip` option sets the strip size. It can take the values `8, 16, 32, 64, 128, 256, 512, 1024`.
- The `AfterVdX` option creates the virtual drives in the adjacent free slot next to the specified virtual drives.

NOTE The * indicates default values used in the creation of the virtual drives. If values are not specified, the default values are taken.

Example: `/cx add vd type=r1 drives=0:10-15 WB Direct strip=64`

This command creates a RAID volume of RAID 1 type from drives in slots 10 to slot 15 in enclosure 0. The strip size is 64kb.

5.6 Setting the Cache Policy in a Virtual Drive

The following command sets the write cache policy of the virtual drive:

`Storcli /cx/v(x|all) set wrcache=wt|wb|awb`

The command sets the write cache to write back, write through, or always write back.

5.7 Showing Virtual Drive Information

The following command shows the virtual drive information for all the virtual drives in the controller:

`storcli /cx/vall show [all]`

5.8 Deleting Virtual Drives

The following command deletes virtual drives:

```
storcli /cx/v(x|all) del [cc|cachecade]
```

The following inputs are required when deleting a virtual drive:

- The controller on which the virtual drive or virtual drives is present.
- The virtual drives that must be deleted; or you can delete all the virtual drives on the controller using the `vall` option.
- The `cc` or `cachecade` option to confirm that the deleted drive is a CacheCade drive.

5.9 Flashing Controller Firmware

The following command is used to flash the controller firmware.

```
storcli /cx download file=filepath [fwtype=<value>] [nosigchk]
[noverchk][resetnow]
```

For more information, see Section 4.2.6, Flashing Controller Firmware Command.

Appendix A: 3Ware CLI Commands to StorCLI Command Conversion

Table 1 System Commands

Description	3Ware CLI Command	StorCLI Command
Show a general summary of all detected controllers.	`tw_cli show`	`show` `show ctrlcount`

Table 2 Controller Commands

Description	3Ware CLI Command	StorCLI Command
Show all information about the adapter, such as cluster state, BIOS, alarm, firmware, version, and so on.	`tw_cli /cx show all`	`/cx show all`
Download the firmware to all compatible controllers that can be flashed with the image. By default, CLI checks for signature and version.	`/cx update fw=`*`filename_with_path`* `[force]`	`/cx download src=`*`filepath`*` [nosigchk] [noverchk]`

Table 2 Controller Commands (Continued)

Description	3Ware CLI Command	StorCLI Command
Show the status of properties related to the controllers.	`/cx show <PropertyName>` The following properties can be used with this command: a0,1,2|-aALL achip AENs [reverse] alarms [reverse] allunitstatus autocarve autorebuild bios carvesize ctlbus diag dpmstat [type=<inst|ra|ext> driver drivestatus events [reverse] exportjbod firmware memory model monitor numdrives numports numunits ondegrade pcb pchip phy rebuild rebuildmode rebuildrate selftest serial spinup stagger unitstatus verify verifymode verifyrate	`/cx show <PropertyName>` The following properties can be used with this command: abortcconerror activityforlocate alarm autorebuild backplane batterywarning bgirate bootwithpinnedcache cachebypass cacheflushint ccrate clusterenable coercion copyback directpdmapping ds eccbucketleakrate eccbucketsize enableeghsp enableesmarter enableeug exposeencldevice jbod loadbalancemode maintainpdfailhistory migraterate ncq perfmode pr prcorrectunconfiguredareas prrate rebuildrate rehostinfo restorehotspare safeid smartpollinterval spinupdelay spinupdrivecount time usefdeonlyencrypt

Table 2 Controller Commands (Continued)

Description	3Ware CLI Command	StorCLI Command
Set properties on the selected controllers.	autocarve=<on|off> autodetect=<on|off > disk=<p:-p>|all autorebuild=<on|off> carvesize=<1024..32768> dpmstat=<on|off> ondegrade=<cacheoff|follow> rebuild=<enable|disable|><1..5> rebuildmode=<adaptive|lowlatency> rebuildrate=<1..5> selftest=<enable|disable> spinup=<*value*> stagger=<*value*> verify=advanced|basic|<1..5> verify=basic [pref=*ddd*:*hh*] where *hh*={00..23} and *ddd*={mon|tue|wed|thu|fri|sat|sun} verify=enable|disable|<1..5> verifymode=<adaptive|lowlatency> verifyrate=<1..5>	abortcconerror=<on|off> activityforlocate=<on|off> alarm=<on|off> autorebuild=<on|off> backplane=<*value*> batterywarning=<on|off> bgirate=<*value*> bootwithpinnedcache=<on|off> cachebypass=<on|off> flush|flushcache cacheflushinterval=<*value*> ccrate=<*value*> coercion=<*value*> clusterenable=<*value*> copyback=<on|off> type=<smartssd|smarthdd|all> directpdmapping=<on|off> eccbucketleakrate=<*value*> eccbucketsize=<*value*> enableeghsp=<on|off> enableesmarter=<*value*> enableeug=<on|off> exposeencldevice=<on|off> foreignautoimport=<on|off> jbod=<on|off> loadbalancemode=<*value*> maintainpdfailhistory=<on|off> migraterate=<*value*> ncq=<on|off> perfmode=<*value*> prcorrectunconfiguredareas=<on|off> prrate=<*value*> rebuildrate=<*value*> restorehotspare=<on|off> smartpollinterval=<*value*> spinupdelay=<*value*> spinupdrivecount=<*value*> stoponerror=<on|off> usefdeonlyencrypt=<on|off> time=*yyyymmdd hh*:*mm*:*ss*|systemtime usefdeonlyencrypt=<on|off>

Table 3 Alarm Commands

Description	3Ware CLI Command	StorCLI Command
Set alarm properties.	`/cx/ex/almx set alarm=<mute|unmute|off>` **NOTE** The 3ware® controllers have enclosure alarms.	`/cx set alarm=<on|off|silence>` **NOTE** The StorCLI controllers have controller alarms.
Show alarm properties.	`/cx/ex show alarms` **NOTE** This command applies for only 9750 and 9690SA controllers.	`/cx show alarm`

Table 4 Patrol Read and Consistency Check Commands

Description	3Ware CLI Command	StorCLI Command
Show patrol read status and patrol read parameters, if any in progress.	`/cx/ux show`	`/cx show patrolRead`

Set the patrol read options on a single adapter, multiple adapters, or all adapters (*x* = single controller).	`/cx/ux start verify`
	`/cx/ux set autoverify=<on|off>`
	`/cx add verify=dddh:hh:duration`
		`/cx set patrolread {=on mode=<auto|manual>}|{off}`
		`/cx set patrolread [starttime=<yyyy/mm/dd hh>] [maxconcurrentpd=<value>] [includessds=<on|off>] [uncfgareas=on|off]`
		`/cx set patrolread delay=<value>`

Show consistency check status, if any in progress, and consistency check parameters.	`/cx/ux show`	`/cx/vx show cc` `/cx show ccrate`

Set consistency check options on a single adapter, multiple adapters, or all adapters (*x* = single controller).	`/cx/ux start verify`
	`/cx/ux set autoverify=<on|off>`
	`/cx add verify=ddd:hh:duration`
		`storcli /cx set consistencycheck|cc=[off|seq|conc] [delay=value]`
		`[starttime=yyyy/mm/dd hh] [excludevd=x-y,z]`

NOTE The 3Ware CLI combines both patrol read and consistency check into a single command. The StorCLI has different commands for each.

Table 5 BBU Commands

Description	3Ware CLI Command	StorCLI Command
Show complete BBU information, such as status, capacity information, design information, and properties.	/cx/bbu show all	/cx/bbu show all
Show BBU summary information.	/cx/bbu show	/cx/bbu show
Show BBU properties.	/cx/bbu show batinst /cx/bbu show bootloader /cx/bbu show fw /cx/bbu show lasttest /cx/bbu show pcb /cx/bbu show serial /cx/bbu show status /cx/bbu show temp /cx/bbu show tempstat /cx/bbu show tempval /cx/bbu show volt	/cx/bbu show properties /cx/bbu show status **NOTE** Not all the properties shown in the 3Ware CLI are shown in the StorCLI.
Show BBU capacity information.	/cx/bbu show cap	/cx/bbu show all
Start the learning cycle on the BBU.	/cx/bbu test [quiet]	/cx/bbu start learn

Table 6 Virtual Drive Commands

Description	3Ware CLI Command	StorCLI Command
Create a RAID volume of the specified RAID type.	/cx add vd type=<*RaidType*> disk=<*p*:*p*|*p*-*p*|*p*:*p*-*p*> (where *p*=port or drive number) [strip=<size>] [nocache|nowrcache] [nordcache|rdcachebasic] [name=string (9000 series)] [ignoreECC] [autoverify|noautoverify] v0=*n*|vol=*a*:*b*:*c*:*d*] (*n*, *a*, *b*, *c*, *d*=size of volume in GB) [noqpolicy] [storsave=<protect|balance|perform>] [noscan] [rapidrecovery=<all|rebuild|disable>] [group=<3|4|5|6|7|8|9|10|11|12|13|14|15|16>] RaidType={raid0, raid1, raid5, raid10, raid50, single, spare, raid6}	/cx add vd type=raid[0|1|5|6|10|50|60] [[size=<*vd1_size*>,<*vd2_size*>,..|*all][name=<vdname1>,..] drives=*e*:*s*|*e*:*s*-*x*|*e*:*s*-*x*,*y*;*e*:*s*-*x*,*y*,*z* [pdperarray=*x*|*auto] [sed] [pdcache=on|off|*default] [pi][dimmerswitch|ds=default|automatic(auto)|*none|maximum(max) |maximumwithoutcaching(maxnocache)] [wt|*wb] [nora|*ra] [*direct|cached] [cachedbadbbu|*nocachedbadbbu] [strip=<8|16|32|64|128|256|512|1024] [aftervd=*x*] [spares=[*e*:]*s*|[*e*:]*s*-*x*|[*e*:]*s*-*x*,*y*;[*e*:]*s*-*x*,*y*,*z* >] [force]
Delete virtual drives.	/*cx*/u*x* del [quiet] **NOTE** You can delete a single unit using this command.	/cx/v*x*[all] delete [force] [cachecade] **NOTE** You can delete one virtual disk, multiple virtual disks, or all the selected virtual disks on selected adapters using this command.

Table 6 Virtual Drive Commands (Continued)

Description	3Ware CLI Command	StorCLI Command
Show drive group information.	/cx/ux show [all] **NOTE** Information of each unit is shown individually.	/cx/dall show [cachecade]
Scan and show available foreign configurations, provide a preview of the imported foreign configuration, show or import foreign configuration.	/cx rescan	cx/fx[all] show [preview] [securityKey=sssssssssss] cx/fx[all] import [securityKey=sssssssssss]
Show VD information, including name, RAID level, RAID level qualifier, size in MBs, state, strip size, number of drives, span depth, cache policy, access policy, and any ongoing activity progress, which includes initialization, background initialization, consistency check, and reconstruction.	/cx/ux show [all]	/cx/vx show all
Show the virtual drive properties.	/cx/ux show autoverify /cx/ux show identify /cx/ux show ignoreECC /cx/ux show initializestatus /cx/ux show name /cx/ux show parit /cx/ux show qpolicy /cx/ux show rapidrecovery /cx/ux show rdcache /cx/ux show rebuildstatus /cx/ux show serial /cx/ux show status /cx/ux show storsave /cx/ux show verifystatus /cx/ux show volumes /cx/ux show wrcache	/cx/vx show all **NOTE** The StorCLI does not have commands to show individual virtual drive properties.
Set virtual drive properties.	/cx/ux set autoverify=on|off /cx/ux set cache=on|off [quiet] /cx/ux set identify=on|off /cx/ux set ignoreECC=on|off /cx/ux set name=string /cx/ux set qpolicy=on|off /cx/ux set rapidrecovery=all|rebuild|disable /cx/ux set rdcache=basic|intelligent|off /cx/ux set storsave=protect|balance|perform [quiet] /cx/ux set wrcache=on|off [quiet]	/cx/vx set accesspolicy=<rw|ro|blocked|rmvblkd> /cx/vx set cachedbadbbu=<on|off> /cx/vx set iopolicy=<cached|direct> /cx/vx set name=<namestring> /cx/vx set pdcache=<on|off|default> /cx/vx set rdcache=<ra|nora|adra> /cx/vx set security=<on|off> /cx/vx|vall set ssdcaching=<on|off> /cx/vx set wrcache=<wt|wb|fwb>

Table 6 Virtual Drive Commands (Continued)

Description	3Ware CLI Command	StorCLI Command
Show cache and access policies of the virtual drive.	/*cx*/*ux* show [all] /*cx*/*ux* show autoverify /*cx*/*ux* show cache /*cx*/*ux* show identify /*cx*/*ux* show ignoreECC /*cx*/*ux* show name /*cx*/*ux* show parit /*cx*/*ux* show qpolicy /*cx*/*ux* show rapidrecovery /*cx*/*ux* show rdcache /*cx*/*ux* show rebuildstatus /*cx*/*ux* show serial /*cx*/*ux* show status initializestatus /*cx*/*ux* show storsave /*cx*/*ux* show verifystatus /*cx*/*ux* show volumes /*cx*/*ux* show wrcache	/cx/vx show all **NOTE** The StorCLI does not have commands to show individual virtual drive properties.
Start initialization (writing 0s) on the virtual drive.	/*cx*/*ux* start verify **NOTE** Only the bios can do a foreground initialization. A background initialization does otherwise. A verify starts a back ground initialization.	/cx/vx start init [Full]
Stop an ongoing initialization on the virtual drive.	/*cx*/*ux* stop verify **NOTE** Only the bios can do a foreground initialization. A background initialization does otherwise. A verify starts a back ground initialization	/cx/vx stop init
Show a snapshot of the ongoing initialization, if any.	/*cx*/*ux* show [all] **NOTE** Only the bios can do a foreground initialization. A background initialization does otherwise. A verify starts a back ground initialization.	/cx/vx show init
Start a consistency check on the virtual drive.	/*cx*/*ux* start verify	/cx/vx start cc
Stop a consistency check on the virtual drive.	/*cx*/*ux* stop verify	/cx/vx stop cc
Reconstruct the selected virtual disk to a new RAID level.	/*cx*/*ux* migrate type=<*RaidType*> [disk=<*p*:-*p*..>] [strip=<*size*>] [noscan] [nocache] [autoverify] [*group*=<3|4|5|6|7|8|9|10|11|12|13|14|15|16>] *RaidType*={ raid0, raid1, raid5, raid10, raid50, single, raid6 }	/cx/vx start migrate <type=*raidlevel*> [option=<add | remove> disk=<e1:s1,e2:s2 ..>] /cx/vx show migrate
Change the power-saving setting on the virtual drive.	/*cx*/*ux* set powersavestandbytimer=<5 to 999>	/cx/vx set ds=<default | Auto | None | Max | MaxNoCache>

Table 7 Physical Drive Commands

Description	3Ware CLI Command	StorCLI Command
Show physical disk information.	/cx/px show [all]	/cx[/ex]/sx show [all]
Start, stop, suspend, or resume an ongoing rebuild operation.	/cx/ux start rebuild disk=<p:-p...> [ignoreECC] **NOTE** Rebuilds cannot be stopped or paused.	/cx[/ex]/sx start rebuild /cx[/ex]/sx stop rebuild /cx[/ex]/sx pause rebuild /cx[/ex]/sx resume rebuild
Mark the configured physical disk drive as missing for the selected adapter.	/cx/px remove [quiet]	/cx[/ex]/sx set missing
Change the physical disk drive state to offline.	/cx/px remove [quiet]	/cx[/ex]/sx set offline
Add jbod.	/cx add vd type=jbod disk=<*p*> (where *p* = port or drive number)	/cx[/ex]/sx set jbod
Change the physical disk drive hot spare state and associate the drive to an enclosure and virtual disk.	/cx add vd type=spare disk=<*p*:*p*|*p*-*p*|*p*:*p*-*p*> (where *p* = port or drive number)	/cx[/ex]/sx add hotsparedrive [{dgs=<N|0,1.2...*n*,,>] [EnclAffinity][nonRevertible]
Locate the physical disk drive and activate the physical disk activity LED.	/cx/px set identify=on|off	/cx[/ex]/sx start | stop locate
Prepare the unconfigured physical drive for removal.	/cx/px remove [quiet]	/cx[/ex]/sx spindown
Show information about all physical disk drives and other devices connected to the selected adapters; includes drive type, size, serial number, and firmware version.	/cx/px show [all]	/cx/eall/sall show [all]
Download drive or expander firmware.	/cx/px update fw=*image.name* [force]	/cx[/ex]/sx download src=filepath [satabridge]

Table 8 Enclosure Commands

Description	3Ware CLI Command	StorCLI Command
Show information about the enclosure for the selected adapter.	/cx/ex show [all]	/cx/ex show [all]
Show the status of the enclosure connected to the selected adapter.	/cx/ex show [all] /cx/ex show controllers /cx/ex show slots /cx/ex show fans /cx/ex show temp /cx/ex show pwrs /cx/ex show alms	/cx/ex show status
Download enclosure firmware.	/cx/ex update fw=*image.name* [force]	/cx/ex download src=*filepath* [offline] [forceActivate

Table 9 Events and Logs

Description	3Ware CLI Command	StorCLI Command
Show the total number of events, newest and oldest sequence number, shutdown sequence number, reboot sequence number, clear sequence number.	`/cx show alarms` **NOTE** This command shows AENs since last controller reset.	`/cx show eventloginfo`
Show the total event entries available at the firmware since last clear, and details of each entries of error log.	`/cx show alarms` **NOTE** This command shows AENs since last controller reset.	`/cx show events filter=<Info | warning| critical| fatal > file=<path of the file>`
Show the count of events starting from specified seqNum and matching category and severity	`/cx show alarms` **NOTE** This command shows AENs since last controller reset.	`/cx show events type=<sinceShutDown | sinceReboot |ccincon vd=<0,1,2…> | includeDeleted | latest=x filter=<Info | warning| critical| fatal > file=<path of the file>`
Show TTY firmware terminal log entries with details on given adapters. The information is shown as total number of entries available on the firmware side.	`/cx show diag`	`/cx show TermLog [type=contents|Config]`

Table 10 Miscellaneous Commands

Description	3Ware CLI Command	StorCLI Command
Show version information.	`tw_cli ?`	`ver`

Show help for all show commands at server level.	`tw_cli ?`
	`tw_cli /cx ?`
	`tw_cli /cx/ux ?`
	`tw_cli /cx/px ?`
	`tw_cli /cx/phyx ?`
	`tw_cli /cx/bbu ?`
	`tw_cli /cx/ex ?`
	`tw_cli /ex`
	NOTE 3 Ware CLI shows context sensitive help.
		`show help`

Show PHY connection information for physical PHY medium on the adapters.	`/cx/phyx show`	`/cx/px show`
Set PHY link speed.	`/cx/phyx set link=<0|1.5|3.0|6.0|12.0>`	`/cx/px set linkspeed=0(auto)|1.5|3|6|12`

Appendix B: MegaCLI Commands to StorCLI Command Conversion

Table 11 System Commands

Description	MegaCLI Command	StorCLI Command
Show the software version.	`MegaCLI -v`	`storcli -v`
Show help information.	`MegaCLI -help|-h|?`	`storcli -help|-h|?`
Show the number of controllers connected.	`MegaCLI -adpCount`	`storcli show ctrlcount`

Table 12 Controller Commands

Description	MegaCLI Command	StorCLI Command
Show the status of properties related to the controllers.	MegaCli -AdpGetProp <*PropertyName*>-aN|-a0,1,2|-aALL The following properties can be used with this command: abortcconerror alarmdsply autodetectbackplanedsbl autoenhancedimportdsply autosnapshotspace batwarndsbl bgirate bootwithpinnedcache cachebypass ccrate clusterenable coercionmode copybackdsbl defaultldpspolicy defaultsnapshotspace defaultviewspace disableldpsinterval disableldpstime disableocr dsbl eccbucketcount eccbucketleakrate eccbucketsize enableeghsp enableesmarter enableeug enablejbod enblspindownunconfigdrvs loadbalancemode maintainpdfailhistoryenbl ncqdsply patrolreadrate perfmode predfailpollinterval rebuildrate reconrate rstrhotspareoninsert smartcpybkenbl spindowntime spinupdelay spinupdrivecount spinupencdelay	/cx show <*propertyName*> The following properties can be used with this command: activityforlocate alarm backplane batterywarning bgirate bootwithpinnedcache cachebypass cacheflushint cc ccrate clusterenable coercion copyback directpdmapping ds eccbucketleakrate eccbucketsize enableeghsp enableesmarter enableeug exposeencldevice jbod loadbalancemode maintainpdfailhistory migraterate ncq perfmode pr prcorrectunconfiguredareas prrate rebuildrate rehostinfo restorehotspare safeid smartpollinterval spinupdelay spinupdrivecount time usefdeonlyencrypt

Table 12 Controller Commands (Continued)

Description	MegaCLI Command	StorCLI Command

Show the status of properties related to the controllers (continued).	`spinupencdrvcnt`
	`ssdsmartcpybkenbl`
	`usediskactivityforlocate`
	`usefdeonlyencrypt`	

Table 12 Controller Commands (Continued)

Description	MegaCLI Command	StorCLI Command
Set properties on the selected controllers.	`Megacli -AdpSetProp <propertyname>-an|-a0,1,2|-aall` The following properties can be set using this command: abortcconerror alarmdsply autodetectbackplanedsbl autoenhancedimportdsply autosnapshotspace batwarndsbl bgirate bootwithpinnedcache cachebypass ccrate clusterenable coercionmode copybackdsbl defaultldpspolicy defaultsnapshotspace defaultviewspace disableldpsinterval disableldpstime disableocr dsbl eccbucketcount eccbucketleakrate eccbucketsize enableeghsp enableesmarter enableeug| enablejbod enblspindownunconfigdrvs loadbalancemode maintainpdfailhistoryenbl ncqdsply patrolreadrate perfmode predfailpollinterval rebuildrate reconrate rstrhotspareoninsert smartcpybkenbl spindowntime spinupdelay spinupdrivecount spinupencdelay	`/cx set <property1>` The following properties can be set using this command: abortcconerror=<on|off> activityforlocate=<on|off> alarm=<*value*> autorebuild=<on|off> backplane=<*value*> batterywarning=<on|off> bgirate=<*value*> bootwithpinnedcache=<on|off> cachebypass=<on|off> flush|flushcache cacheflushinterval=<*value*> ccrate=<*value*> coercion=<*value*> clusterenable=<*value*> copyback=<on|off> type=<smartssd|smarthdd|all> dimmerswitch=<on|off> directpdmapping=<on|off> eccbucketleakrate=<*value*> eccbucketsize=<*value*> enableeghsp=<*value*> enableesmarter=<*value*> enableeug=<*value*> exposeencldevice=<on|off> foreignautoimport=<on|off> jbod=<on|off> loadbalancemode=<*value*> maintainpdfailhistory=<on|off> migraterate=<*value*> ncq=<on|off> perfmode=<*value*> prcorrectunconfiguredareas=<on|off> prrate=<*value*> rebuildrate=<*value*> restorehotspare=<on|off> smartpollinterval=<*value*> spinupdelay=<*value*> spinupdrivecount=<*value*> stoponerror=<on|off> usefdeonlyencrypt=<on|off> time=*yyyymmdd hh:mm:ss*|systemtime usefdeonlyencrypt=<on|off>

Table 12 Controller Commands (Continued)

Description	MegaCLI Command	StorCLI Command
Set properties on the selected controllers (continued)	spinupencdrvcnt sdsmartcpybkenbl usediskactivityforlocate usefdeonlyencrypt	
Show the number of controllers connected.	MegaCLI -adpCount	storcli show ctrlcount
Show all information about the adapter, such as cluster state, BIOS, alarm, firmware, version, and so on.	MegaCli -AdpAllInfo -aN|-a0,1,2|-aALL	storcli /*cx* show all
Show the freespace available in the controller.	MegaCLI -CfgFreeSpaceinfo -aN|-a0,1,2|-aALL	storcli /*cx* show freespace
Download the controller firmware.	MegaCli -AdpFwFlash -f *filename* [-NoSigChk] [-NoVerChk] [-ResetNow] -aN|-a0,1,2|-aALL	storcli /*cx* download file=<*filepath*> [fwtype=<*val*>] [nosigchk] [noverchk][resetnow]
Show the preserved cache status.	MegaCLI-GetPreservedCacheList -aN|-a0,1,2|-aALL	storcli /*cx* show preservedcache
Set the controller time	MegaCLI –AdpSetTime *yyyymmdd hh*:*mm*:*ss* -aN|-a0,1,2|-aALL	storcli /c(x|all) set time=<*yyyymmdd hh*:*mm*:*ss* | systemtime>
Show the controller time.	MegaCLI –AdpGetTime -aN	storcli /*cx* show time

Table 13 Patrol Read Commands

Description	MegaCLI Command	StorCLI Command
Show the patrol read status and patrol read parameters, if any in progress.	MegaCli -AdpPR -info -aN|-a0,1,2|-aALL	storcli/*cx* show patrolRead
Set the patrol read options on a single adapter, multiple adapters, or all adapters. (x = single controller).	MegaCli -AdpPR -Dsbl|EnblAuto|EnblMan|Start|Stop|Info|Suspend|Resume|Stop|SSDPatrolReadEnbl | SSDPatrolReadDsbl |{SetDelay *Val*}|{-SetStartTime *yyyymmdd hh*}|{maxConcurrentPD Val} -aN|-a0,1,2|-aALL	storcli /*cx* set patrolread {=on mode=<auto|manual>}|{off} storcli /*cx* set patrolread [starttime=< *yyyy*/*mm*/*dd hh*>] [maxconcurrentpd=<*value*>] [includessds=<on|off>] [uncfgareas=on|off] storcli /*cx* set patrolread delay=<*value*>
Disable patrol read.	MegaCli -AdpPR -Dsbl -aN|-a0,1,2|-aALL	storcli /*cx* set patrolread=off
Enable automatic patrol read.	MegaCli -AdpPR -EnblAuto -aN|-a0,1,2|-aALL	storcli /*cx* set patrolread=on mode=auto
Enable manual patrol read.	MegaCli -AdpPR -EnblMan -aN|-a0,1,2|-aALL	storcli /*cx* set patrolread=on mode=manual
Start patrol read.	MegaCli -AdpPR -Start -aN|-a0,1,2|-aALL	storcli /*cx* start patrolRead
Suspend a running patrol read.	MegaCli -AdpPR -Suspend -aN|-a0,1,2|-aALL	storcli /*cx* suspend patrolread
Resume a suspended patrol read.	MegaCli -AdpPR -Resume -aN|-a0,1,2|-aALL	storcli /*cx* resume patrolread

Table 13 Patrol Read Commands (Continued)

Description	MegaCLI Command	StorCLI Command
Stop a running patrol read.	MegaCli -AdpPR -Stop -aN|-a0,1,2|-aALL	storcli /*cx* stop patrolRead
Include SSD drives in patrol read.	MegaCli -AdpPR -SSDPatrolReadEnbl -aN|-a0,1,2|-aALL	storcli /*cx* set patrolRead includessds=on | onlymixed
Exclude SSD drives in patrol read.	MegaCli -AdpPR -SSDPatrolReadDsbl -aN|-a0,1,2|-aALL	storcli /*cx* set patrolRead includessds=off
Delay a patrol read,	MegaCli -AdpPR -SetDelay Val -aN|-a0,1,2|-aALL	storcli /*cx* set patrolread delay=<*value*>
Schedule a patrol read.	MegaCli -AdpPR -SetStartTime *yyyymmdd hh* -aN|-a0,1,2|-aALL	storcli /*cx* set patrolread=on starttime=*YYYY/MM/DD HH*
Set the value for maximum concurrent physical drives for the patrol read.	MegaCli -AdpPR -maxConcurrentPD Val -aN|-a0,1,2|-aALL	storcli /*cx* set patrolread maxconcurrentpd=*xx*

Table 14 Consistency Check Commands

Description	MegaCLI Command	StorCLI Command
Schedule a consistency check.	MegaCLI -AdpCcSched -Dsbl|-Info| {-ModeConc | -ModeSeq [-ExcludeLD -LN|-L0,1,2] [-SetStartTime *yyyymmdd hh*] [-SetDelay *val*] } -aN|-a0,1,2|-aALL	storcli /*cx* set consistencycheck|cc=[off|seq|conc] [delay=value] starttime=*yyyy/mm/dd hh* [excludevd=x-y,z]
Show consistency check status and consistency parameters, in progress, if any.	MegaCLI -AdpCcSched -Info	storcli /*cx* show cc/ConsistencyCheck

Table 15 OPROM BIOS Commands

Description	MegaCLI Command	StorCLI Command
Schedule a consistency check.	MegaCli -AdpBIOS -Dsply -aN|-a0,1,2|-aALL	storcli /*cx* show bios
Show consistency check status and consistency parameters, if any in progress.	MegaCli -AdpBootDrive -{-Set {-Lx | -physdrv[E0:S0]}} -aN|-a0,1,2|-aALL	storcli /*cx*/e*x*/s*x* set bootdrive=on|off storcli /*cx*/v*x* set bootdrive=on|off
Sets the BIOS properties for the controller.	MegaCli -AdpBIOS -Enbl | -Dsbl | -Dsply | SOE | BE EnblAutoSelectBootLd | DsblAutoSelectBootLd -aN|-a0,1,2|-aALL	storcli /*cx* set bios=<on|off> storcli /*cx* set stoponerror|soe=<on|off> storcli /*cx* set autobootselect(abs)=<on|off>

Table 16 Battery Commands

Description	MegaCLI Command	StorCLI Command
Show battery-related information.	MegaCli -AdpBbuCmd -aN|-a0,1,2|-aALL	storcli /cx/bbu show storcli /cx/bbu show all
Show the battery learn properties.	MegaCli -AdpBbuCmd -GetBbuProperties -aN|-a0,1,2|-aALL	storcli /cx/bbu show properties
Show the battery information, firmware status, and the gas gauge status.	MegaCli -AdpBbuCmd -GetBbuStatus -aN|-a0,1,2|-aALL	storcli /cx/bbu show status
Show battery capacity information.	MegaCli -AdpBbuCmd -GetBbuCapacityInfo -aN|-a0,1,2|-aALL	storcli /cx/bbu show all
Show battery design information.	MegaCli -AdpBbuCmd -GetBbuDesignInfo -aN|-a0,1,2|-aALL	storcli /cx/bbu show all
Set battery properties	MegaCli -AdpBbuCmd -SetBbuProperties -f <*fileName*> -aN|-a0,1,2|-aALL	storcli /cx/bbu set learnDelayInterval=<*value*> storcli /cx/bbu set bbuMode=<value> storcli /cx bbu set autolearnmode=<*value*>, where x= 0 – Enabled, 1 – Disabled, 2 – Warn though event.
Start battery learn cycle.	MegaCli -AdpBbuCmd -BbuLearn -aN|-a0,1,2|-aALL	storcli /cx/bbu start learn
Set the battery to low power storage mode.	MegaCli -AdpBbuCmd -BbuMfgSleep -aN|-a0,1,2|-aALL	storcli /cx/bbu set powermode=sleep
Seal the gas gauge EEPROM write access	MegaCli -AdpBbuCmd -BbuMfgSeal -aN|-a0,1,2|-aALL	storcli /cx/bbu set writeaccess=sealed

Table 17 RAID Configuration Commands

Create a RAID configuration of RAID type 0, 1, 5, and 6.	MegaCli -CfgLDAdd -R0|-R1|-R5|-R6[E0:S0,E1:S1,...] [WT | WB] [NORA | RA | ADRA] [Direct | Cached] [CachedBadBBU|NoCachedBadBBU] [-sz*XXXXXXXX* [-sz*YYYYYYYY* [...]]] [-strpszM] [-Hsp[E5:S5,...]] [-afterLdX] -aN	storcli /c*x* add vd type=raid[0|1|5|6] [Size=<*VD1_Sz*>,<*VD2_Sz*>,..|*all] [name=<*VDNAME1*>,..] drives=*e*:*s*|*e*:*s*-*x*|*e*:*s*-*x*,*y*;*e*:*s*-*x*,*y*,*z* [PDperArray=*x*] [SED] [pdcache=on|off|*default][pi] [DimmerSwitch(ds)=default|automatic(auto)|*none|maximum(max)|MaximumWithoutCaching(maxnocache)] [wt|*wb] [nora|*ra] [*direct|cached] [CachedBadBBU|*NoCachedBadBBU] [strip=<8|16|32|64|128|256|512|1024] [AfterVd=X] [Spares=[*e*:]*s*|[*e*:]*s*-*x*|[*e*:]*s*-*x*,*y*] [force]
Create a CacheCade virtual drive.	MegaCLI -CfgCacheCadeAdd [-rX] -Physdrv[E0:S0,...] {-Name LdNamestring} [WT|WB|ForcedWB] [-assign -LX|L0,2,5..|LALL] -aN|-a0,1,2|-Aall	storcli /c*x* add vd cachecade|cc Type=[0,1,10] drives=[*e*:]*s*|[*e*:]*s*-*x*|[*e*:]*s*-*x*,*y* [< WT| WB>] [assignvds=0,1,2]
Create a RAID configuration of RAID type 10, 50, and 60.	MegaCli -CfgSpanAdd -aN|-a0,1,2|-aALL -R10|-R50|R60 -Array0[E0:S0,E1:S1,...] -Array1[E0:S0,E1:S1,...] [...] [WT | WB] [NORA | RA | ADRA] [Direct | Cached] [CachedBadBBU|NoCachedBadBBU] [-sz*XXXXXXXX* [-sz*YYYYYYYY* [...]]] [-strpszM] [-afterLdX] -aN	storcli /c*x* add vd type=raid[10|50|60] [Size=<*VD1_Sz*>,<*VD2_Sz*>,..|*all] [name=<*VDNAME1*>,..] drives=*e*:*s*|*e*:*s*-*x*|*e*:*s*-*x*,*y*;*e*:*s*-*x*,*y*,*z* [PDperArray=x] [SED] [pdcache=on|off|*default][pi] [DimmerSwitch(ds)=default|automatic(auto)|*none|maximum(max)|MaximumWithoutCaching(maxnocache)] [wt|*wb] [nora|*ra] [*direct|cached] [CachedBadBBU|*NoCachedBadBBU] [strip=<8|16|32|64|128|256|512|1024] [AfterVd=X] [Spares=[*e*:]*s*|[*e*:]*s*-*x*|[*e*:]*s*-*x*,*y*] [force]
Delete a virtual drive.	MegaCli -CfgClr [-Force] -aN|-a0,1,2|-aALL	storcli /c*x*/v*all* delete
Show the topology information of the drive group.	MegaCLI -CfgDsply -aN|-a0,1,2|-Aall	storcli /c*x*/d*all* show [all]
Show information for a CacheCade virtual drive.	MegaCLI -CfgCacheCadeDsply -aN|-a0,1,2|-Aall	storcli /c*x*/d*all* show CacheCade(cc)

Table 17 RAID Configuration Commands (Continued)

Delete a virtual drive hosting the operating system.	MegaCLI -CfgLdDel -LX|-L0,2,5...|-LALL [-Force] -aN|-a0,1,2|-aALL	storcli /*cx*/v*x*[all] delete -force
Delete a CacheCade virtual drive.	MegaCLI -CfgCacheCadeDel -LX|-L0,2,5...|-LALL -aN|-a0,1,2|-Aall	storcli /*cx*/v*x*[all] delete CacheCade(cc)
Show, delete, and import the foreign configuration commands.	MegaCli -CfgForeign -Scan | {-Preview | -Dsply| -Import | -Clear[FID]} -aN|-a0,1,2|-aALL"	storcli /*cx*/f(*x*|all) show [all] [securityKey=*xxx*] storcli /*cx*/f(*x*|all) del|delete [securityKey=*xxx*] storcli /*cx*/f(*x*|all) import [preview] [securityKey=*xxx*]"

Table 18 Security Commands

Set the key ID for the controller.	MegaCli -CreateSecurityKey -SecurityKey *sssssssssss* | [-Passphrase *sssssssssss*] | [-KeyID *kkkkkkkkkk*] -aN	storcli /*cx* set SecurityKey=*XXXXXX* [passphrase=*yyyyy*] [keyId=*zzzz*]
Change the security key for the controller.	MegaCli -ChangeSecurityKey -OldSecurityKey *sssssssssss* | -SecurityKey *sssssssssss*| [-Passphrase *sssssssssss*] | [-KeyID *kkkkkkkkkk*] -aN	storcli /*cx* set SecurityKey=*XXXXXX* OldSecurityKey=*yyyyy*
Compare and verify the security key for the controller.	MegaCli -VerifySecurityKey -SecurityKey *sssssssssss* -aN	storcli /*cx* compare SecurityKey=*xxxxxx*
Delete the security key.	MegaCLI -DestroySecurityKey | [-Force] -aN	storcli /*cx* delete SecurityKey
Set the security key for the controller.	MegaCli -SetKeyID -KeyID *kkkkkkkkkk* -aN	storcli /*cx* set SecurityKey KeyId=*xxxx*

Table 19 Virtual Drive Commands

Show the virtual drive information.	MegaCli -LDInfo -Lx|-L0,1,2|-Lall -aN|-a0,1,2|-aALL	storcli /*cx*/v(*x*|all) show storcli /*cx*/v(*x*|all) show all
Set virtual drive properties.	MegaCli -LDSetProp WT | WB|NORA |RA | ADRA|-Cached|Direct| CachedBadBBU|NoCachedBadBBU} | -RW|RO|Blocked | {-Name nameString} | -EnDskCache|DisDskCache -Lx| -L0,1,2|-Lall -aN|-a0,1,2|-aALL	storcli /*cx*/v(*x*|all) set wrcache=WT|WB|AWB storcli /*cx*/v(*x*|all) set rdcache=RA|NoRA storcli /*cx*/v(*x*|all) set iopolicy=Cached|Direct storcli /*cx*/v(*x*|all) set accesspolicy=RW|RO|Blocked|RmvBlkd storcli /*cx*/v(*x*|all) set pdcache=On|Off|Default storcli /*cx*/v(*x*|all) set name=<*NameString*> "
Set power-saving (dimmer switch) properties.	MegaCli -LDSetPowerPolicy -Default| -Automatic| -None| -Maximum| -MaximumWithoutCaching -Lx|-L0,1,2|-Lall -aN|-a0,1,2|-aALL	storcli /*cx*/v(*x*|all) set ds=Default|Auto|None|Max|MaxNoCache
Show virtual drive expansion information.	MegaCli -getLdExpansionInfo -Lx|-L0,1,2|-Lall -aN|-a0,1,2|-aALL	storcli /*cx*/v(*x*|all) show expansion
Expand the virtual drive within the existing array; also use if you replace the drives with larger drives, beyond the size of the existing array.	MegaCli -LdExpansion -pN -dontExpandArray -Lx|-L0,1,2|-Lall -aN|-a0,1,2|-aALL	storcli /*cx*/v(*x*|all) expand Size=<*value*> [expandarray]
Secure the virtual drive.	MegaCLI --LDMakeSecure -Lx|-L0,1,2,...|-Lall -An	storcli /*cx*/v*x* set security=on
Show specific properties of virtual drives.	MegaCli -LDGetProp -Cache | -Access | -Name | -DskCache -Lx|-L0,1,2|-Lall -aN|-a0,1,2|-aALL	storcli /*cx*/v*x* show
Start virtual drive initialization.	MegaCli -LDInit -Start [Fast|Full] -Lx|-L0,1,2|-Lall -aN|-a0,1,2|-aALL	storcli /*cx*/v(*x*|all) start init[Full]
Stop a running virtual drive initialization.	MegaCli -LDInit -Abort -Lx|-L0,1,2|-Lall -aN|-a0,1,2|-aALL	storcli /*cx*/v(*x*|all) stop init
Show the initialization progress.	MegaCli -LDInit -ShowProg -Lx|-L0,1,2|-Lall -aN|-a0,1,2|-aALL	storcli /*cx*/v(*x*|all) show init
Start a consistency check on an uninitialized virtual drive.	MegaCli -LDCC -Start -Lx|-L0,1,2|-Lall -aN|-a0,1,2|-aALL	storcli /*cx*/v(*x*|all) start cc[Force]
Start, stop, suspend, resume, and show the progress of a consistency check operation.	MegaCli -LDCC -Start|-Abort| -Suspend|-Resume|-ShowProg| -ProgDsply -Lx|-L0,1,2|-LALL -aN|-a0,1,2|-aALL	storcli /*cx*/v(*x*|all) start cc storcli /*cx*/v(*x*|all) stop cc storcli /*cx*/v(*x*|all) pause cc storcli /*cx*/v(*x*|all) resume cc storcli /*cx*/v(*x*|all) show cc

Table 19 Virtual Drive Commands (Continued)

Enable/disable automatic background initialization. Show, stop, pause, resume, and show the progress of the background initialization.	`MegaCLI -LDBI -Enbl|-Dsbl| -getSetting|-Abort|-Suspend| -Resume|-ShowProg|-ProgDsply -Lx|-L0,1,2|-LALL -aN|-a0,1,2|-Aall`	`storcli /cx/v(x|all) set autobgi=On|Off`
		`storcli /cx/v(x|all) show autobgi`
		`storcli /cx/v(x|all) stop bgi`
		`storcli /cx/v(x|all) pause bgi`
		`storcli /cx/v(x|all) resume bgi`
		`storcli /cx/v(x|all) show bgi`

Start and show progress for a migrate operation.	`MegaCli -LDRecon {-Start -Rx [Add | Rmv PhysDrv[E0:S0,E1:S1,...] ] } | -ShowProg|-ProgDsply -Lx -aN`	`storcli /cx/vx start migrate type=raidx [option=add|remove drives=[e:]s|[e:]s-x|[e:]s-x,y] [Force]` `storcli /cx/v(x|all) show migrate`
Delete preserved cache.	`MegaCLI -DiscardPreservedCache -Lx|-L0,1,2|-Lall -force -aN|-a0,1,2|-aALL`	`storcli /cx/v(x|all) delete preservedcache[force]`
Assign the CacheCade virtual drive.	`MegaCLI -Cachecade -assign|-remove -Lx|-L0,1,2|-LALL -aN|-a0,1,2|-aALL`	`storcli /cx/vx|all set ssdCaching=on|off`

Table 20 Physical Drive Commands

Description	MegaCLI Command	StorCLI Command
Show drive information.	`MegaCli -pdInfo -PhysDrv[E0:S0,E1:S1,...] -aN|-a0,1,2|-aALL`	`storcli /cx/ex/sx show` `storcli /cx/ex/sx show all`

Start, stop, pause, resume, or show the progress of a rebuild operation.	`MegaCLI PDRbld -Start|-Stop |-Suspend|-Resume|-ShowProg |-ProgDsply -PhysDrv [E0:S0,E1:S1,...] -aN|-a0,1,2|-aALL`	`storcli /cx/ex/sx start rebuild`
		`storcli /cx/ex/sx stop rebuild`
		`storcli /cx/ex/sx pause rebuild`
		`storcli /cx/ex/sx resume rebuild`
		`storcli /cx/ex/sx show rebuild`

Start, stop, pause, resume, or show the progress of a copyback operation.	`MegaCLI PDCpyBk -Start|-Stop |-Suspend|-Resume|-ShowProg |-ProgDsply -PhysDrv [E0:S0,E1:S1,...] -aN|-a0,1,2|-aALL`	`storcli /cx/ex/sx start copyback target=exx:sxx`
		`storcli /cx/ex/sx stop copyback`
		`storcli /cx/ex/sx pause copyback`
		`storcli /cx/ex/sx resume copyback`
		`storcli /cx/ex/sx show copyback`

Mark a drive as missing.	`MegaCli -PdMarkMissing -physdrv[E0:S0,E1:S1,...] -aN|-a0,1,2|-aALL`	`storcli /cx/ex/sx set missing`
Show missing drive information.	`MegaCli -PdGetMissing -aN|-a0,1,2|-aALL`	`storcli /cx/ex/sx show all` **NOTE** This information is shown as part of the show all command.
Replace the configured drive that is identified as missing, and then start an automatic rebuild.	`MegaCli -PdReplaceMissing -physdrv[E0:S0] -arrayA, -rowB -aN`	`storcli /cx/ex/sx insert array=x row=y`
Set the drive state to online	`MegaCli -PDOnline -PhysDrv[E0:S0,E1:S1....] -aN|-a0,1,2`	`storcli /cx/ex/sx set online`

Table 20 Physical Drive Commands (Continued)

Description	MegaCLI Command	StorCLI Command
Set the drive state to offline.	MegaCli -PDOffline -PhysDrv[E0:S0,E1:S1....] -aN|-a0,1,2|-aALL	storcli /cx/ex/sx set offline
Set the drive state to JBOD	MegaCli -PDMakeGood -PhysDrv[E0:S0,E1:S1....] -aN|-a0,1,2|-aALL	storcli /cx/ex/sx set good [force]
Set the drive state to JBOD	MegaCli -PDMakeJBOD -PhysDrv[E0:S0,E1:S1,...] -aN|-a0,1,2|-aALL	storcli /cx/ex/sx set jbod
Add and delete hot spare drives.	MegaCli -PDHSP {-Set [{-Dedicated -ArrayN | -Array0,1...}] [-EnclAffinity] [-nonRevertible] } | -Rmv -PhysDrv[E0:S0,E1:S1,...] -aN|-a0,1,2|-aALL	storcli /cx/ex/sx add hotsparedrive [dgs=<N|0,1,2..>] enclaffinity nonrevertible storcli /cx/ex/sx delete hotsparedrive
Start, stop, pause, resume or show the progress of an initialization process.	MegaCli -PDClear -Start |-Stop| -ShowProg |-ProgDsply - PhysDrv[E0:S0,E1:S1....] -aN|-a0,1,2|-aALL	storcli /cx/ex/sx start initialization storcli /cx/ex/sx stop initialization storcli /cx/ex/sx pause initialization storcli /cx/ex/sx resume initialization storcli /cx/ex/sx show initialization
Start a drive locate and activate the drive's LED or stop a drive locate and deactivate the drive's LED.	MegaCli -PDLocate {[-start] | -stop} -physdrv[E0:S0,E1:S1,...] -aN|-a0,1,2|-aALL	storcli /cx/ex/sx start locate storcli /cx/ex/sx stop locate
Spin down an unconfigured drive and prepare it for removal or spin up spun-down drive and mark the drive state as unconfigured good.	MegaCli -PDPrpRmv [-Undo] - PhysDrv[E0:S0,E1:S1....] -aN|-a0,1,2|-aALL	storcli /cx/ex/sx spindown storcli /cx/ex/sx spinup.
Show physical drive information of all connected drives.	MegaCli -PDList -aN|-a0,1..|-aAll	storcli /cx/eall/sall show [all] **NOTE** This command does not show drives whose enclosure device ID is not available.
Flash the physical drive firmware.	MegaCLI PdFwDownload[offline] [ForceActivate] {[-SataBridge] -PhysDrv[0:1]}|{-EncdevId[*devId1*]} -f <*filename*> -aN|-a0,1,2|-Aall	storcli /cx[/ex]/sx download src=<*filepath*> [satabridge] storcli /cx/ex download src=<*filepath*> [forceActivate]
Erase the drive's security configuration and securely erase data on a drive.	MegaCli -PDInstantSecureErase -PhysDrv[E0:S0,E1:S1,...] | [-Force] -aN|-a0,1,2|-aALL	storcli /cx/ex/sx secureerase [force]

Table 20 Physical Drive Commands (Continued)

Description	MegaCLI Command	StorCLI Command
Show the security key for secured physical drives	MegaCli -GetKeyID [-PhysDrv[E0:S0]] -aN	storcli /cx/ex/sx show securitykey keyid
Start, stop, and show the progress of a secure erase operation	MegaCli -SecureErase Start[Simple| [Normal [|ErasePattern ErasePatternA|ErasePattern ErasePatternA ErasePattern ErasePatternB]]|[Thorough [|ErasePattern ErasePatternA|ErasePattern ErasePatternA ErasePattern ErasePatternB]]] | Stop| ShowProg| ProgDsply [-PhysDrv [E0:S0,E1:S1,...] | -Lx|-L0,1,2|-LALL] -aN|-a0,1,2|-aALL	storcli /cx[/ex]/sx start erase [simple| normal| thorough] [erasepatternA=<*val*>]\n[erasepatternB=<*val*>] Examples: storcli /cx/ex/sx start erase simple storcli /cx/ex/sx start erase normal erasepatterna=10101010 storcli /cx/ex/sx start erase thorough erasepatterna=10101010 erasepatternb=10101111 storcli /cx/ex/sx stop erase
Enable/disable the direct physical drive mapping mode. Show the current state of the direct physical drive mapping.	MegaCLI DirectPdMapping -Enbl|-Dsbl|-Dsply -aN|-a0,1,2|-Aall	storcli /cx set directpdmapping=<on | off> storcli /cx show directpdmapping

Table 21 Enclosure Commands

Description	MegaCLI Command	StorCLI Command
Show enclosure information.	MegaCli -EncInfo -aN|-a0,1,2|-aALL	storcli /cx/ex show storcli /cx/ex show all
Show enclosure status.	MegaCli -EncStatus -aN|-a0,1,2|-aALL	storcli /cx/ex show status

Table 22 PHY Commands

Description	MegaCLI Command	StorCLI Command
Show PHY information.	MegaCli -PHYInfo -phyM -aN|-a0,1,2|-aALL	storcli /cx/px(x|all) show storcli /cx/px(x|all) show all
Set PHY link speed.	MegaCLI PhySetLinkSpeed -phyM -speed -aN|-a0,1,2|-aALL	storcli /cx/px(x|all) set linkspeed=0(auto)|1.5|3|6|12
Show the PHY error counters.	Megacli PhyErrorCounters -An	storcli /cx/px(x|all) show storcli /cx/px(x|all) show all

Table 23 Alarm Commands

Description	MegaCLI Command	StorCLI Command
Show alarm properties.	MegaCli -AdpGetProp AlarmDsply -aN|-a0,1,2|-aALL	storcli /cx(x|all) show alarm
Set alarm properties.	MegaCli -AdpSetProp AlarmEnbl | AlarmDsbl | AlarmSilence -aN|-a0,1,2|-aALL	storcli /cx(x|all) set alarm=<on|off|silence>

Table 24 Event Log Properties Commands

Description	MegaCLI Command	StorCLI Command
Show event logs.	MegaCli -AdpEventLog -GetEventLogInfo -aN|-a0,1,2|-aALL	storcli /cx show eventloginfo
Show the specified type of event logs.	MegaCli -AdpEventLog -GetEvents {-info -warning -critical -fatal} {-f <*fileName*>} -aN|-a0,1,2|-aALL	storcli /cx show events [[type=<sincereboot| sinceshutdown| includedeleted|latest=x| ccincon vd=<0,1,...>] filter=<info| warning| critical|fatal>] file=<filepath>
Show the specified event logs.	MegaCli -AdpEventLog -GetSinceShutdown {-info -warning -critical -fatal} {-f <*fileName*>} -aN|-a0,1,2|-aALL	storcli /cx show events [type=[latest=x|ccincon vd=|[sincereboot|sinceshutdown|included eleted|latest|ccincon]]] [filter=[info|warning|critical|fatal]] file=*xyz*.txt
Delete the event logs.	MegaCli -AdpEventLog -Clear -aN|-a0,1,2|-aALL	storcli /cx delete events

Table 25 Premium Feature Key Commands

Description	MegaCLI Command	StorCLI Command
Show the Safe ID of the controller.	MegaCli -ELF -GetSafeId -a0	storcli /cx(x|all) show safeid
Show the Advanced Software Options that are enabled on the controller, including the ones in trial mode.	MegaCli -ELF -ControllerFeatures -a0	storcli /cx(x|all) show all **NOTE** This information shows as part of the controller show all.
Apply the Activation Key in preview mode.	MegaCli -ELF -Applykey key -val -preview -a0	storcli /cx(x|all) set aso key=<*key value*> preview
Apply the Activation Key.	MegaCli -ELF -Applykey key -val -a0	storcli /cx(x|all) set aso key=<*key value*>
Deactivate the trial key.	MegaCli -ELF -DeactivateTrialKey -a0	storcli /cx(x|all) set aso deactivatetrialkey
Show the re-host information and, if re-hosting is necessary, show the controller and key vault serial numbers.	MegaCli -ELF -ReHostInfo -a0	storcli /cx(x|all) show rehostinfo
Indicate to the controller that the re-host is complete.	MegaCli -ELF -ReHostComplete -a0	storcli /cx(x|all) set aso rehostcomplete

Appendix C: Unsupported Commands in Embedded MegaRAID

The commands in the following table are not supported in Embedded MegaRAID.

Table 26 Unsupported Commands in Embedded MegaRAID

Command Group	Command
Jbod	storcli /c0 set jbod=<on|off>
	storcli /c0/s2 set jbod
	storcli /c0/s2 set bootdrive=<on|off>
DS	storcli /c*x*(*x*|all) set ds=OFF type=1|2|3|4
	storcli /c*x*(*x*|all) set ds=ON type=1|2 [properties]
	storcli /c*x*(*x*|all) set ds=ON type=3|4 DefaultLdType=<*val*> [properties]
	storcli /c*x*(*x*|all) set ds [properties]
	storcli /c*x*/v(*x*|all) set ds=Default|Auto|None|Max|MaxNoCache
Security	storcli /c*x* delete securitykey
	storcli /c*x* set securitykey=*xxxxxxxx* {passphrase=*xxxx*} {keyid=*xxx*}
	storcli /c*x* set securitykey keyid=*xxx*
	storcli /c*x* compare securitykey=*xxxxxxxxxx*
	storcli /c*x* set securitykey=*xxxxxxxx* oldsecuritykey=*xxxxxxxx*
ASO	storcli /c*x*(*x*|all) set aso key=<*key value*> preview
	storcli /c*x*(*x*|all) set aso key=<*key value*>
	storcli /c*x*(*x*|all) set aso transfertovault
	storcli /c*x*(*x*|all) set aso rehostcomplete
	storcli /c*x*(*x*|all) set aso deactivatetrialkey
	storcli /c*x*(*x*|all) show safeid
	storcli /c*x*(*x*|all) show rehostinfo
	storcli /c0 set time =<*yyyymmdd hh*:*mm*:*ss* | system>
	storcli /c0 show cc|consistencycheck
	storcli /c0/vall show expansion
	storcli /c0 set jbod
	storcli /c*x* download src=<*filepath*> [forceActivate]
Copy back	storcli /c*x*[/e*x*]/s*x* show copyback
	storcli /c*x*[/e*x*]/s*x* start copyback target=eID:sID
	storcli /c*x*[/e*x*]/s*x* stop copyback
	storcli /c*x*[/e*x*]/s*x* pause copyback
	storcli /c*x*[/e*x*]/s*x* resume copyback
Migrate	storcli /c*x*/v(*x*|all) show migrate
	storcli /c*x*/v*x* start migrate type=*raidx* [option=add|remove drives=[e:]*s*|[e:]*s-x*|[e:]*s-x,y*] [Force]
Cache	storcli /c*x*/v(x|all) set ssdcaching=on|off
	storcli /c*x*(x|all) show preservedcache
	storcli /c*x*/v(*x*|all) delete preservedcache[force]

Table 26 Unsupported Commands in Embedded MegaRAID (Continued)

Command Group	Command
BBU	storcli /cx/bbu show
	storcli /cx/bbu show all
	storcli /cx/bbu set [learnDelayInterval=<*val*> | bbuMode=<*val*>
	storcli /cx/bbu start learn
Secure ease	storcli /cx/sx secureerase [force]
	storcli /cx/sx start erase [simple| normal| thorough][erasepatternA=<*val*>]
	storcli /cx/sx stop erase
	storcli /cx/sx show erase
Consistency check	storcli /cx show cc/ConsistencyCheck
Controller	storcli /cx show cc

Appendix D: Revision Information

Version and Date	Description of Changes
Rev. E, December 2012	■ Added a new note in Section 4.2.2, storcli /cx show all. ■ Updated the commands for add virtual drive and updated the example. in Section 4.4.1, Add Virtual Drives Commands. ■ Updated command syntax in Section 4.4.5, Change Virtual Drive Properties Commands. ■ Updated command syntax in Section 4.4.10, Background Initialization Commands. ■ Updated command syntax iand added a note in Section 4.5, Foreign Configurations Commands. ■ Updated command syntax in Section 4.11, PHY Commands. ■ Removed the `stoponerror` property name and updated the syntax for `directpdmapping` in Table 2, Controller Commands. ■ Updated the syntax for `linkspeed` command in Table 10, Miscellaneous Commands ■ Removed the `stoponerror` property name from Table 12, Controller Commands. ■ Updated syntax for `storcli /cx set directmapping` command in Table 12, Controller Commands. ■ Updated the syntax for `show events` command in Table 24, Event Log Properties Commands.
Rev. D, November 2012	■ Added the following sections: Section 2.4, Installing StorCLI on FreeBSD Operating Systems. Section 2.5, Installing StorCLI on the Microsoft EFI. Section 2.6, Installing StorCLI on Solaris Operating Systems. ■ Added two notes in Chapter 3, StorCLI Command Syntax. ■ Updated Object Identifier in Table 1, Object Identifiers in the StorCli Command Syntax. ■ Added `import` and `expand` verbs in Table 2, Verbs in the StorCli Command Syntax. ■ Removed the `storcli /cx show stoponerror` command and added the `storcli /cx set termlog[=on|off|offthisboot]` command in Section 4.2.1, Show and Set Controller Properties Commands. ■ Updated descriptions for the `off` and `delay` options in Table 6, Set CC Input Options. ■ Updated a note in Section 4.3.1, Drive Show Commands. ■ Added new commands and a new note in Section 4.3.2, Missing Drives Commands. ■ Removed `cc` from Section 4.4.1, Add Virtual Drives Commands. ■ Replaced cc with cachecade in storcli /cx/vx|vall del cachecade in Section 4.4.2, Delete Virtual Drives Commands. ■ Replaced cc with cachecade in Section 4.7.1, Drive Group Show. ■ Removed cc from storcli /cx/dall show cachecade in Section 4.7.1, Drive Group Show. ■ Added new commands in Section 4.4.11, Virtual Drive Expansion Commands. ■ Updated Section 5.5, Adding Virtual Drives. ■ Removed the `stoponerror` property name from Table 2, Controller Commands in Appendix A, 3Ware CLI Commands to StorCLI Command Conversion. ■ Removed the `stoponerror` property name from Table 12, Controller Commands in Appendix B, MegaCLI Commands to StorCLI Command Conversion.
Rev. C, November 2012	Updated the '/cx add/' syntax in Section 4.4.1, Add Virtual Drives Commands. Updated the description for force option in Section 4.4.2, Delete Virtual Drives Commands. Updated the '/cx add/' syntax in the following tables: ■ Table 6, Virtual Drive Commands ■ Table 17, RAID Configuration Commands

Version and Date	Description of Changes
Rev. B, September 2012	Updated the following sections: ■ Section 1.1, Overview. ■ Section 1.3, Devices Supported by the StorCLI Tool. ■ Chapter 2, Installation. ■ Section 2.2, Installing StorCLI on Linux Operating Systems. ■ Section 2.3, Installing StorCLI on VMware Operating Systems. ■ Section 4.2.1, Show and Set Controller Properties Commands. ■ Section 4.2.3.2, Patrol Read. ■ Section 4.2.3.3, Consistency Check. ■ Section 4.2.6, Flashing Controller Firmware Command. ■ Section 4.4.1, Add Virtual Drives Commands. ■ Section 4.4.8, Virtual Drive Migration Commands. ■ Section 4.9, BBU Commands. Added a new verb in Table 2, Verbs in the StorCli Command Syntax. Added a note in Chapter 4, Working with the Storage Command Line Tool. Updated the Appendix A, 3Ware CLI Commands to StorCLI Command Conversion. Updated the Appendix B, MegaCLI Commands to StorCLI Command Conversion. Added a new Appendix C, Unsupported Commands in Embedded MegaRAID
Version 1.0 (Rev A.), May 2012	Initial release of the document.

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