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FAQ

Brocade® Gen 7 Switches
Frequently Asked Questions

Overview

Brocade, a Broadcom company, provides the industry's leading Gen 7 Fibre Channel family of storage area network (SAN) switches, including the Brocade® G710, G720, and G730 Switches. These high-performance, highly reliable Fibre Channel switches address a wide range of business requirements, from small shared-storage environments up to the most demanding enterprise data centers.

This document answers frequently asked questions about the Brocade Gen 7 switches.

For product information, visit www.broadcom.com/products/fibre-channel-networking/switches.

General Questions and Answers

What is the Brocade G710 Switch?

Purpose-built for small to mid-sized businesses, the Brocade G710 provides low-cost access to Gen 7 Fibre Channel technology. The G710 is an affordable Gen 7 entry point that starts at just eight ports, providing organizations both high-performance, secure access to industry-leading storage technology, and the ability to start small and scale on demand, up to 24 ports, to support their growing environments. With this switch, organizations can achieve enterprise-level performance and capabilities without a high price tag, making it an ideal choice for businesses seeking value with high-end performance and reliability. The Brocade G710 includes all enterprise software features in the base product, without any additional costs or complex configurations. The solution also eliminates support costs with its built-in lifetime warranty, ensuring long-term reliability and peace of mind while protecting the organization's investment.

For more information about the Brocade G710, visit the product page on Broadcom.com and refer to the *Brocade G710 Product Brief*.

What is the Brocade G720 Switch?

The Brocade G720 Switch is a 64-port, ultra-dense 1U switch designed to build high-performance fabrics that maximize flash and NVMe storage to meet demanding workloads. With a 50% latency reduction compared to the previous generation, the Brocade G720 Switch enables maximum performance of NVMe storage. This enterprise-class switch offers pay-as-you-grow scalability with Ports on Demand (PoD). Organizations can quickly, easily, and cost-effectively scale from 24 to 64 ports. The Brocade G720 provides 48 64G SFP+ ports and 8 2x64G double-density SFP-DD ports, all in an efficient 1U package. Each SFP-DD transceiver provides 2 ports, making 16 ports available for device or ISL connectivity. The Brocade G720 base configuration comes with 24 port enabled and can scale to 64 ports by installing SFP and SFP-DD POD licenses in any order and any combination. Each SFP-DD port can accommodate SFP+ or SFP-DD transceivers, providing the flexibility to use either type of transceiver in those ports when needed.

For more information about the Brocade G720, visit the product page on Broadcom.com and refer to the *Brocade G720 Product Brief*.

What is the Brocade G730 Switch?

The Brocade G730 Switch is a Gen 7 high-density building block that enables dense rackmount environments to connect more devices and build larger fabrics. With 128 64G ports in a 2U design, organizations can create high-scale fabrics in less space. The Brocade G730 utilizes 96 64G SFP+ ports and 16 2x64G double-density optical transceiver (SFP-DD) ports. Each of the 16 SFP-DD transceivers provides 2 ports, making 32 ports available for device or ISL connectivity. The addition of SFP-DD ports allows the Brocade G730 to connect more servers, storage, and switches in a small footprint. Built to support maximum flexibility and dense Fibre Channel fabrics, the Brocade G730 Switch offers cost-effective pay-as-you-grow scalability, expanding from 48 ports to 128 ports with Ports on Demand (PoD). The Brocade G730 base configuration comes with 48 ports enabled. To scale from 48 ports to 128 ports, additional 24-port SFP+ PODs and a 32-port SFP-DD POD can be installed in any order and combination. In addition, with a 50% latency reduction compared to the previous generation and no oversubscription, the Brocade G730 enables maximum performance of NVMe storage and high-transaction workloads.

For more information about the Brocade G730, visit the product page on Broadcom.com and refer to the *Brocade G730 Product Brief*.

Can I add a redundant power supply to the Brocade G710?

No. The Brocade G710 has a single power supply. In order to provide protection for the failure of one power source, a couple options are available:

- For high availability, A/B fabrics provide redundancy in case of a problem with one fabric. Since the G710 is often deployed as single-switch fabrics, connect one switch to one power source, and the other switch to the secondary power source. This provides the protection of both redundant fabrics and redundant power.
- An alternate solution is to use an automated transfer switch with a fast cutover time. These are affordable and available in many different form factors, and allow the G710 to be connected to redundant power sources.

Does the Brocade G710 come with a new console cable for USB-C connectivity?

Yes. The accessory tray for the Brocade G710 now features a new console connectivity cable that provides USB-C connectivity. The console port on the Brocade G710 is still an RJ-45 port, appropriate for connectivity to terminal/console servers. We now provide an RJ-45 to USB-C cable that provides easy console connectivity from any computer with USB-C ports. We previously provided a kit with a DB9 serial port connector, but most modern computers no longer have DB9 serial ports.

Can I deploy a pair of Brocade G720 switches to get the same port count as the Brocade G730?

No. When you need large numbers of ports, the most efficient way to go, by far, is to build the fabric with the largest possible building blocks. The Brocade G730 provides 128 non-oversubscribed 64G ports in a 2U form factor. To build a fabric of G720s that would provide the same number of non-oversubscribed ports, you would need to deploy a large number of switches—six G720 switches would be required to provide a fabric with 128 available fully non-oversubscribed ports. That many switches is a much more costly route, and all of those switches would take up more space, consume more power, represent more assets to manage and monitor, and mean more possible failure points.

The same reasoning applies to the Brocade G710 and Brocade G720 switches. You would have to build out a large fabric of the smaller G710 switches to get the 64 non-oversubscribed ports that the Brocade G720 switch provides. It is better to use fewer larger switches than many smaller switches.

What is a Brocade 64G SFP-DD transceiver?

The Brocade 64G double-density optical transceiver (SFP-DD) is a next-generation optical transceiver that enables a higher port count for Brocade G720 and G730 device or ISL connectivity. It enables the Brocade Gen 7 switches to scale up to 128 ports on the G730 (2RU) and up to 64 ports on the G720 (1RU). Dual SN connectors from a single SFP-DD transceiver allow organizations to connect more servers, storage, or switches in a small footprint. Each transceiver supports two independent connections of 64G Fibre Channel via a two-lane electrical interface.

Highlights include:

- Provides two independent channels in one port interface to support high-density SAN solutions.
- Operates over duplex multimode fiber.
- Uses industry-standard SN connectors.

Can I buy the SFP-DD POD without buying all the SFP+ POD licenses?

Yes. You can purchase the POD licenses in any order or any combination, allowing you to buy the SFP-DD POD first if you want to.

Can I use SFP-DD transceivers even if I have not bought the SFP-DD POD license?

Yes. You can use SFP-DD transceivers as long as the total port count does not exceed the total number of ports licensed for the switch. For instance, let's say that you have bought just the base switch, and no PODs of any kind, but you are not using two of the ports that were licensed in the base port count. In that case, you can plug in a separately purchased SFP-DD transceiver into one of the SFP-DD-capable ports and use both of the ports. However, this is not very efficient, since it would mean that you are not using some of the regular SFP+ transceivers that were provided, and you would be buying the SFP-DD transceivers separately. In terms of enabling ports, you are ultimately limited by the maximum number of ports that are licensed for the switch; in order to achieve the full port count for the switch, you will need to buy one of the SFP-DD PODs.

Can I install regular SFP+ transceivers into the SFP-DD-capable ports?

Yes. Each SFP-DD port can accommodate SFP+ transceivers or SFP-DD transceivers, providing the flexibility to use either type of transceiver in those ports when needed. However, when you use regular SFP+ transceivers in one of the SFP-DD-capable ports, you give up one of the usable ports in each case. You will need SFP-DD transceivers in all SFP-DD-capable ports to reach the maximum port count of the switch.

Can I install an SFP-DD transceiver into regular SFP+ ports?

No. The SFP-DD transceiver is deeper and cannot be installed into the regular SFP+ ports.

Can an existing Brocade G720 Switch with 56 ports be upgraded to 64 ports using SFP-DD transceivers?

Yes. If you already installed four regular SFP+ PODs, maxing out the 56 physical ports, and you would like to now utilize the SFP-DD transceivers to enable the full 64 ports on the switch, you can install a 16-port SFP-DD POD on top of the current SFP+ POD license. Doing so would effectively replace one of the existing 8-port PODs. You will lose the previously purchased 8-port SFP+ POD, and there is no credit for the lost ports. However, it is possible to get to the 64-port maximum port count this way. For any new deployments from this point forward, we do not recommend installing more than three regular SFP+ PODs—precisely for this reason. The 16-port SFP-DD POD should be used once you want to go beyond 48 ports.

Are Brocade-branded SFP+ and SFP-DD transceivers required for Gen 7 Fibre Channel switches?

Yes. All Brocade Gen 7 switches require Brocade-branded SFP+ and SFP-DD transceivers.

What tools are available to simplify management of Brocade Gen 7 switches?

Brocade products provides easy-to-use tools to help you manage a single switch or your whole fabric at once, from deployment to configuration and ad hoc management.

- **Brocade Web Tools** is a product that is embedded into the Fabric OS® firmware. Ideal for small environments, it provides a new and improved Java-free GUI for fast, easy management of individual switches or small fabrics. It can be launched directly from a web browser or accessed via Brocade SANnav Management Portal.
- **Brocade SANnav™ Management Portal** is the preferred option for medium or larger environments, since it provides a complete view of the network, including traffic flows and health conditions across the SAN. Its intuitive, drill-down interface leverages Brocade autonomous SAN technology and presents data within clear dashboards, enabling a faster, more comprehensive SAN management experience. It also streamlines management workflows to accelerate the deployment of new applications, switches, hosts, and targets.

For more information on SANnav Management Portal, visit https://www.broadcom.com/sannav.

What advanced software is bundled with the Brocade Gen 7 switches?

All Gen 7 switches (Brocade G710, G720, and G730) come with all enterprise software licenses included:

- Brocade Fabric Vision
- ISL Trunking
- Extended Fabrics
- Integrated Routing (G720 and G730 only)
- FICON CUP (G720 only)

Customers can also take advantage of the following tools, built into Gen 7, for faster, in-depth analysis of the health and performance of their SAN. Providing comprehensive data collection and advanced analytics, these tools speed the identification of issues or patterns that require attention and they are the foundation for the self-learning, self-optimizing, and self-healing autonomous SAN.

- **Monitoring and Alerting Policy Suite (MAPS)** leverages prebuilt, prevalidated rule-based or policy-based templates. MAPS takes the guesswork out of defining appropriate rules and actions, simplifying threshold configuration, monitoring, and alerting.
- **Fabric Performance Impact (FPI) Monitoring** leverages predefined MAPS policies to automatically detect and pinpoint exactly which devices are causing or are impacted by a congested port, and quarantines the misbehaving devices.
- **IO Insight** proactively monitors I/O performance and behavior data points through integrated network sensors to baseline application performance and ensure operational stability.
- **VM Insight** is another integrated tool that enables virtual machine (VM) visibility by monitoring VM performance, identifying VM anomalies, and optimizing VM performance in a storage fabric.

How do Brocade Gen 7 switches safeguard mission-critical workloads from cybersecurity vulnerabilities?

Fibre Channel fabrics are secure by design, based on controlled access between servers and storage and isolation within the data center. Brocade Gen 7 technology further reduces the risk of vulnerabilities from malware and hijacking attacks by validating the integrity of the switch operating system, security settings, and hardware. Brocade Fabric OS (FOS) adds additional security enhancements to validate the integrity and security of Brocade hardware and software. These features include Secure Boot, Brocade Trusted FOS (TruFOS) Certificates, FOS hardening with removal of root access, and automated distribution of SSL certificates via SANnav Management Portal. Brocade TruFOS Certificates ensure that enterprises running Brocade directors and switches are currently covered with support and securely enabled to perform critical operations, without having to worry about whether the operating system has been tampered with. In addition, Brocade FOS has been hardened by removing root-level access to the operating system to protect the SAN against malware and hijacking attacks.

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