



BROCADE 8000 SWITCH FREQUENTLY ASKED QUESTIONS

Overview

Brocade® provides the industry's leading family of Storage Area Network (SAN) and IP/Ethernet switches. These high-performance, highly reliable Fibre Channel and Ethernet switches address a wide range of business requirements for the most demanding enterprises and data centers environments. Brocade now offers the top-of-rack Brocade 8000 Switch, which provides Converged Enhanced Ethernet (CEE) and Fibre Channel over Ethernet (FCoE) functionality in a 1U form factor. The switch has 32 ports, with 24 10 Gigabit Ethernet (GbE) ports and eight Fibre Channel ports supporting 1/2/4/8 Gbps performance.

General Questions and Answers

Q What is the primary value of the Brocade 8000?

A The Brocade 8000 offers the following key business benefits:

- **Industry-leading performance:** To support new access layer server deployments with Tier 3 and some Tier 2 applications, the Brocade 8000 provides best-in-class performance for Fibre Channel delivery in a top-of-rack CEE/FCoE switch. It features a non-blocking architecture on all ports with eight Fibre Channel ports concurrently active at 8 Gbps and 24 CEE ports with 10 GbE speeds.

The Brocade 8000 utilizes ASIC technology that supports port trunking for Fibre Channel and Link Aggregation for Ethernet. On the Fibre Channel side, an Inter-Switch Link (ISL) trunk can supply up to 64 Gbps of balanced data throughput. In addition to reducing congestion and increasing bandwidth, enhanced Brocade ISL Trunking utilizes ISLs more efficiently to preserve the number of usable switch ports. On the Ethernet side, the Brocade 8000 supports standards-based Link Aggregation Control Protocol (LACP).

The Brocade 8000 is a Link Layer (Layer 2) protocol switch that supports traditional Ethernet and features Layer 2 capabilities for Quality of Service (QoS) and security. As a multiprotocol switch, the Brocade 8000 supports Ethernet, CEE, Fibre Channel, and FCoE protocols.

- **Enterprise-class availability for business continuance:** The Brocade 8000 provides a reliable foundation for disaster recovery and business continuance by employing enterprise-class availability features such as hot-swappable, redundant, and integrated fan and power supply assemblies. Combined with a wide range of

diagnostic and monitoring functions, these capabilities help provide a highly available environment.

In conjunction with Brocade SAN extension products, the Brocade 8000 enables servers and storage devices to reside remotely, enabling organizations to create highly available environments that support sophisticated business continuance and disaster recovery initiatives.

- **Non-disruptive integration into existing Brocade Fibre Channel SANs:** The Brocade 8000 utilizes the same Fabric OS[®] that supports the entire Brocade Fibre Channel product family—from fixed port switches to the Brocade DCX[®] Backbone family. This helps ensure backward compatibility for the Brocade 8000 to seamlessly integrate with existing Fibre Channel SANs. It also enables forward compatibility among Brocade solutions, simplifying maintenance and field upgrades, while supporting future data center expansions. Moreover, organizations can monitor and manage the Brocade 8000 with fabric management applications such as Brocade Data Center Fabric Manager (DCFMTM).

Q Why would someone choose the Brocade 8000?

A The Brocade 8000 offers new FCoE and CEE technologies that integrate seamlessly in data centers with existing Fibre Channel SAN environments, protecting current investments and extending their value. With FCoE preserving Fibre Channel constructs and management tools, organizations will realize significant savings as they continue to utilize the Fibre Channel management tools they are already using.

Q What are the available configurations of the Brocade 8000?

A The Brocade 8000 is available in two configurations. Organizations can buy the Brocade 8000 in a fully configured SKU where all 32 ports are active, allowing them to take advantage of CEE, Fibre Channel, and FCoE services. Or, they can purchase the Brocade 8000 in a SKU with only the 24 CEE ports enabled. This enables them to deploy CEE and 10 GbE, then upgrade to FCoE and Fibre Channel services when they are ready to do so by purchasing an optional FCoE license.

Q Does the Brocade 8000 support Brocade Fibre Channel features and services that I am used to?

A Yes. The Brocade 8000 supports most of the Brocade Fibre Channel fabric features, because it includes a Brocade Fibre Channel switch that provides the advanced features found in other Brocade switches.

Q When will the Brocade 8000 support Access Gateway mode and hot code activation?

A The hot code activation and Access gateway mode features are currently planned for the Brocade 8000 in a field upgrade release before the end of 2009.

Q Can I connect the CEE ports of the Brocade 8000 to traditional Ethernet ports?

A Yes. The Brocade 8000 is a Layer 2 switch that supports traditional Ethernet along with industry-standard CEE enhancements. As a result, the Brocade 8000 CEE ports can be connected to traditional 10 GbE Ethernet ports. Upon making such a connection, the

system will negotiate the services between the two ports and will default to the traditional Ethernet services. In other words, when connecting a CEE port to a traditional Ethernet port, one loses support for CEE enhancements.

Q What is the main value for deploying CEE/FCoE top-of-rack switches?

A The greatest value proposition for CEE/FCoE deployment in top-of-rack environments is server I/O consolidation. When using Converged Network Adapters (CNAs) for server connectivity, organizations reduce the number of adapters (ports) per server. That in turn results in a lower number of cables and switch ports used within each server rack. The lower component costs and power consumption all contribute to lower cost of acquisition and lower operating costs. The lower power consumption and associated cooling costs also contribute to greener data center environments.

Q How many of the 32 ports are active on the Brocade 8000 when shipped?

A All 32 ports on the Brocade 8000 are active in the fully configured SKU (BR-8000-008). There is now need to activate the Fibre Channel or CEE ports. The eight Fibre Channel ports are shipped with optical modules, while the 24 CEE ports require either copper or fiber connectors. In contrast, only the 24 CEE ports are active in the CEE-only SKU (BR-8000-0000).

Q What type of connectors does the Brocade 8000 support?

A The Brocade 8000 supports fiber media for Fibre Channel ports, and fiber and copper media for CEE ports:

- Fibre Channel Media type: Hot-pluggable, industry-standard Small Form Factor Pluggable (SFP) and SFP+, LC connector; Short-Wave Laser (SWL) and Long-Wave Laser (LWL); distance depends on fiber-optic cable and port speed; supports SFP+ (2/4/8 Gbps) and SFP (1/2/4 Gbps) optical transceivers
- CEE Media Type: Hot-pluggable, Brocade 10 GbE SFP+ supporting any combination of Short-Reach (SR) and Long-Reach (LR) optical transceivers, or Brocade copper Twinax cables of one, three, or five meters

Q Are Brocade-branded SFPs required for the new switches?

A Yes. The Brocade 8000 requires Brocade-branded SFPs.

Q Can I connect the Brocade 8000 directly to Fibre Channel storage devices?

A Yes. The Brocade 8000 Fibre Channel ports support direct connections to Fibre Channel storage. The eight Fibre Channel ports on the switch support FL_Port, F_Port, M_Port (Mirror Port), and E_Port. Self-discovery is based on switch type (U_Port). Manual port type control is available.

Q What Field-Replaceable Units (FRUs) are available for the Brocade 8000?

A The Brocade 8000 offers hot-swappable power supplies and fan systems. The switch is shipped with two redundant power supplies and three fan units. FRUs for power and fan units are available to replace failed ones without disrupting normal operations.

Q What optional Fibre Channel licenses are available for the Brocade 8000?

A The following optional licenses are available:

- Brocade Fibre Channel ISL Trunking: provides the ability to aggregate multiple physical links into one logical link for enhanced network performance and fault tolerance.
- Brocade Advanced Performance Monitoring: enables performance monitoring of networked storage resources. This license includes the Top Talkers feature.
- Brocade Fabric Watch: monitors mission-critical switch operations.

Q Can the new switches connect to classic McDATA fabrics?

A The Brocade 8000 does not connect directly to McDATA fabrics.

Q What role does the Brocade 8000 play in the Brocade data center architecture?

A It provides a building block for the data center, incorporating advanced features for end-to-end performance and availability. The CEE/FCoE switch is managed using Brocade DCFM, which incorporates extensions for the new technologies. The switch integrates into existing environments and can also be managed using industry-standard command line interfaces for both Fibre Channel and Ethernet functionality.

Q Is FCoE routable over IP?

A No. FCoE is designed as a data center technology and is not based on IP. However, once Fibre Channel traffic is forwarded out of FCoE switches to Ethernet or Fibre Channel switches, it can be routed to remote locations just like other Fibre Channel or Ethernet data.

Q When will the new switches be available through OEMs and VARs/VADs?

A Brocade 8000 switches are available from leading Brocade OEMs today and will be available from most, if not all, Brocade OEMs and resellers before the end of 2009. Plans call for availability worldwide.

Q How much do the new switches cost?

A Pricing for new switch configurations is available from Brocade OEMs and resellers.

Q Des the Brocade 8000 support Integrated Routing?

A The Brocade 8000 does not support Integrated Routing since it is expected to be deployed in top-of-rack installations. In such usage models, Integrated Routing is not a high-priority feature and does not contribute significant value to such environments.

Q What key new features available in Fabric OS 6.1.2 are relevant to the Brocade 8000?

A Fabric OS 6.1.2, included with the Brocade 8000, supports FCoE and CEE features. As new technologies are added to the Brocade 8000 family, Fabric OS is also enhanced to take advantage of the new features.

Q How is FCoE different from iSCSI?

A FCoE and iSCSI are both encapsulation protocols, but the similarities between them end there. FCoE encapsulates Fibre Channel frames so they can be transported over

Ethernet. In contrast, iSCSI encapsulates SCSI to be transported over TCP/IP. FCoE is not routable over IP, but iSCSI is.

Q Will FCoE replace Fibre Channel in the data center?

A No. Fibre Channel is the high-performance protocol of choice and will continue to be used predominantly for Tier 1 and Tier 2 applications. FCoE deployment is likely to be used in new access layer server deployment with Windows and Linux operating systems running Tier 3 and some Tier 2 applications.

Q What does “first-hop” FCoE switch mean?

A The Brocade 8000 and all other CEE/FCoE switches in the market today are first-hop switches. That means they split the incoming converged networking and storage traffic into two separate outgoing I/O streams. The storage traffic is forwarded to its destination over Fibre Channel ports, while the networking traffic is forwarded to its destination over CEE (10 GbE) ports.

Q Does the Brocade 8000 support Layer 2 pathing?

A The Brocade 8000 will support Layer 2 pathing when IETF completes the definition of a new industry standard called TRILL. The Brocade 8000 switch is hardware-ready to support TRILL.

Learn More

Q How do I find out more about Brocade switches?

A Contact your Brocade Sales Representative or OEM Partner for details. Or visit www.brocade.com/products.

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