BROCADE 6520, 6510, AND 6505 SWITCHES FREQUENTLY ASKED QUESTIONS

Introduction

Brocade provides the industry's leading family of Storage Area Network (SAN) switches, including the Gen 5 Fibre Channel Brocade® 6520, 6510, and 6505 Switches. These high-performance, highly reliable Fibre Channel switches address a wide range of business requirements, for small shared storage environments all the way up to the most demanding enterprise data centers.

For product information, visit:
www.brocade.com/products/all/switches/index.page?network=FIBRE_CHANNEL.

General Questions and Answers

Q What is Gen 5 Fibre Channel?

A Gen 5 Fibre Channel is the purpose-built, data center-proven network infrastructure for storage, delivering unmatched reliability, simplicity, and 16 Gbps performance. Brocade switches with Gen 5 Fibre Channel unleash the full potential of high-density server virtualization, cloud architectures, and next-generation storage.

Q What is the Brocade 6520 Switch?

A The Brocade 6520 Switch is a high-density, purpose-built building block for large enterprise data centers to support consolidation, growing workloads, and highly virtualized, private cloud storage environments. Delivering market-leading Gen 5 Fibre Channel technology and unmatched port density, the Brocade 6520 provides industry-leading scalability, reliability, and performance in a flexible, easy-to-deploy enterprise-class switch, enabling greater operational efficiency and business continuity.

Designed for maximum flexibility, this high-density, enterprise-class switch offers "pay-as-you-grow" scalability with Ports on Demand (PoD). Organizations can quickly, easily, and cost-effectively scale from 48 to 96 ports in 24-port increments, each supporting 2, 4, 8, 10, or 16 Gbps. In addition, flexible, high-speed 16 Gbps and 8 Gbps optics allow organizations to deploy bandwidth on demand to meet growing data center needs. The Brocade 6520 also comes standard with dual redundant power supplies and integrated fans that support optional airflow configurations.

Q What is the Brocade 6510 Switch?

A The Brocade 6510 is a high-performance, enterprise-class switch that meets the demands of hyper-scale, private cloud storage environments by delivering market-leading Gen 5 Fibre Channel technology and capabilities that support highly virtualized environments. Designed to enable maximum flexibility and reliability, the Brocade 6510 Switch offers "pay-as-you-grow" scalability with Ports on Demand (PoD). Organizations can quickly, easily, and cost-effectively scale from 24 to 48 ports in 12-port increments, each supporting 2, 4, 8, 10, or 16 Gbps in an efficiently designed 1U package. In addition, flexible, high-speed 16 Gbps and 8 Gbps optics allow organizations to deploy bandwidth on demand to meet growing data center needs. The Brocade 6510 comes standard with dual redundant power supplies and integrated fans that support optional airflow configurations.

Q What is the Brocade 6505 Switch?

A The Brocade 6505 Switch with Gen 5 Fibre Channel provides exceptional price/performance value, combining flexibility, simplicity, and enterprise-class functionality in an entry-level switch. Designed to enable maximum flexibility and reliability, the Brocade 6505 enables fast, easy, and cost-effective scaling from 12 to 24 ports using Ports on Demand (PoD) capabilities, and supports 2, 4, 8, or 16 Gbps speeds in an efficiently designed 1U package. The Brocade 6505 comes standard with a single power supply and integrated fans. A second, optional power supply provides additional redundancy for increased resiliency.

Q What distinguishes Brocade 6520, 6510, and 6505 Switches from other Brocade switches?

A Brocade 6520, 6510, and 6505 Switches with Gen 5 Fibre Channel are designed to unleash the full potential of private cloud storage and virtualization. With unmatched scalability, reliability, functionality, and 16 Gbps performance, Brocade 6520, 6510, and 6505 Switches are the strategic platforms for transforming current SAN fabrics into cloud-optimized SANs. These switches are designed to increase business agility while providing non-stop access to information and reducing infrastructure and administrative costs. The capabilities of these switches yield 40 percent higher performance compared to 10 Gigabit Ethernet (GbE) alternatives at a similar cost.

See the table below for a detailed comparison of these switches.

A Comparison of Brocade Fibre Channel Switches

	Brocade 6520 with Gen 5 Fibre Channel	Brocade 5300	Brocade 6510 with Gen 5 Fibre Channel	Brocade 5100	Brocade 6505 with Gen 5 Fibre Channel	Brocade 300
Port Configurations	48, 72, 96 ports	48, 64, 80 ports	24, 36, 48 ports	24, 32, 40 ports	12, 24 ports	8, 16, 24 ports
Supported Port Speeds	2, 4, 8, 10, 16 Gbps	1, 2, 4, 8 Gbps	2, 4, 8, 10, 16 Gbps	1, 2, 4, 8 Gbps	2, 4, 8, 16 Gbps	1, 2, 4, 8 Gbps
Total Bandwidth	1536 Gbps	640 Gbps	768 Gbps	320 Gbps	384 Gbps	192 Gbps
ISL Trunking Bandwidth	128 Gbps	64 Gbps	128 Gbps	64 Gbps	128 Gbps	64 Gbps
Power Supply	Dual, hot-swappable	Dual, hot-swappable	Dual, hot-swappable	Dual, hot-swappable	Single, hot-swappable, optional second power supply	Single, fixed
Airflow	Front-to-back and back-to-front options	Back-to-front	Front-to-back and back-to-front options	Back-to-front	Back-to-front	Back-to-front
Energy Efficiency	0.30 watts/Gbps	0.43 watts/Gbps	0.14 watts/Gbps	0.28 watts/Gbps	0.14 watts/Gbps	0.30 watts/Gbps
Brocade ClearLink Diagnostic Ports (D_Ports)	Yes	No	Yes	No	Yes	No
In-flight Encryption and Compression	Yes	No	Yes	No	No	No
10 Gbps Native Fibre Channel	Yes	No	Yes	No	No	No
Forward Error Correction (FEC)	Yes	No	Yes	No	Yes	No
ASIC-Enabled Buffer Credit Loss Detection and Automatic Recovery at Virtual Channel Level	Yes	No	Yes	No	Yes	No
Concurrent Support for Top Talkers and Fibre Channel Routing	Yes	No	Yes	No	No support for Fibre Channel routing	No support for Fibre Channel routing
E_Port Top Talkers	Yes	No	Yes	No	Yes	No

Benefits of Gen 5 Fibre Channel Technology

Feature	Condor3	Condor2	Benefits
More Buffers per ASIC	8192	2048	Congestion avoidance, better performance
Monitoring/Diagnostic Enhancements	Yes	Partial	Avoid fabric problems
Forward Error Correction	Yes	No	Automatic recovery of transmission errors enhances reliability of transmission, which results in higher availability and performance

In-flight Encryption/Compression*	Yes	No	Secure ISL connectivity and compression of ISL traffic for bandwidth optimization
10 Gbps Native Fibre Channel*	Yes	No	Ability to configure any Condor3 port as 10 Gbps Fibre Channel eliminates the need for specialized ports for optical MAN (10 Gbps DWDM) connectivity
ASIC-Enabled Buffer Credit Loss Detection and Automatic Recovery at Virtual Channel Level	Yes	No	Ensures application availability and performance by automatically recovering lost buffer credits without requiring any upfront configuration or user intervention
Auto Link Tuning for Backend Ports	Yes	No	Optimizes the link automatically
E_Port Top Talkers and Concurrency with Fibre Channel Routing	Yes	No	Monitors top bandwidth-consuming flows in real time on each individual ISL and EX_Ports

**Not supported on the Brocade 6505.*

The Future of Fibre Channel Technology

Q Is Fibre Channel still the best infrastructure for data center storage?

A Networks need to evolve in order to support the growing demands of highly virtualized environments and cloud architectures. Today, Fibre Channel is the de facto standard for storage networking in the data center. The introduction of Gen 5 Fibre Channel extends the life of this robust, reliable, and high-performance technology. Gen 5 Fibre Channel is the purpose-built, data center-proven network infrastructure for storage, delivering unmatched reliability, simplicity, and 16 Gbps performance. Brocade switches with Gen 5 Fibre Channel unleash the full potential of high-density server virtualization, cloud architectures, and next-generation storage. This enables organizations to continue leveraging their existing IT investments as they solve their most difficult business challenges.

Q What is the future of Fibre Channel technology in the data center?

A Fibre Channel will continue to play a vital role in the data center of the future. Its robust capabilities make it the technology of choice today and the de facto storage networking standard for mission-critical workloads and highly virtualized environments. Fibre Channel continues to exhibit unprecedented growth, driven by server virtualization and SSD storage adoption. These trends are making the transition to Gen 5 Fibre Channel impossible to ignore for data center IT management. Dell'Oro Group forecasts 16 Gbps Fibre Channel port shipments will exceed 8 Gbps Fibre Channel by mid-2013, a much faster pace than what was seen during the 4 Gbps to 8 Gbps transition.

Approximately 80 percent of Brocade customers expect to maintain or increase Fibre Channel spending over the next three years. These organizations must be able to leverage those investments for the long term as they face new business demands. As the leader in Fibre Channel solutions, Brocade continues to invest heavily in R&D, along with its broad ecosystem of industry partners.

Q Is Fibre Channel better than Fibre Channel over Ethernet (FCoE), iSCSI, or NAS for storage networks and clouds?

A All of these technologies have value for specific use cases. But when it comes to the elevated demands of virtualization and cloud-based architectures, only Fibre Channel is the proven and trusted networking technology that meets the stringent requirements for zero-data loss and flow control with enterprise-class, mission-critical storage applications. Robust Fibre Channel infrastructures are specifically built for the reliability and performance that data centers demand.

Q What value does 16 Gbps port speed provide when I currently have sufficient bandwidth at 4/8 Gbps?

A High-performance, highly reliable Gen 5 Fibre Channel solutions provide the ideal networking infrastructure to accommodate the growing workloads and transformational changes in storage environments. No other technology is currently capable of supporting the highly demanding requirements associated with growing virtualized and private cloud infrastructures.

Emerging and evolving critical workloads and higher-density virtualization are continuing to push the limits of SAN infrastructure. In addition, with new technologies such as Solid State Drives (SSD), the focus is shifting from storage to interconnect. This trend is driving ever-higher I/O and bandwidth requirements, shortening the time horizon when speeds beyond 8 Gbps are needed. Brocade 6520, 6510, and 6505 Switches feature industry-leading Gen 5 Fibre Channel performance; 420 million frames-per-second switching; and 1536 Gbps, 768 Gbps, or 384 Gbps switch bandwidth to address these next-generation I/O- and bandwidth-intensive applications.

In addition, Gen 5 Fibre Channel platforms and Brocade Fabric OS® (FOS) 7.0 or higher introduce functionality—such as Brocade Fabric Vision technology, which includes Brocade ClearLink Diagnostics and Forward Error Correction (FEC), as well as Dynamic Fabric Provisioning (DFP), Buffer Credit Recovery, and in-flight compression and encryption*—to reduce operational costs and complexity, and improve the reliability and availability of a fabric.

**In-flight compression and encryption are not supported on the Brocade 6505.*

Q What Brocade Global Services offerings are available for Brocade 6520, 6510, and 6505 Switches?

A Brocade offers assessment, design, implementation, and Brocade Resident Consultant services as well as Brocade Technical Support for Brocade 6520, 6510, and 6505 Switches.

New Features

Q What is Brocade Fabric Vision technology?

A Brocade Fabric Vision technology is an advanced hardware and software architecture that combines capabilities from the Brocade Condor3 ASIC, Brocade FOS, and Brocade Network Advisor to help administrators address problems before they impact operations, accelerate new application deployments, and dramatically reduce operational costs.

Fabric Vision technology provides unprecedented visibility and insight across the storage network through innovative diagnostic, monitoring, and management technology.

Q What are the advantages of Brocade Fabric Vision technology?

A Brocade Fabric Vision technology maximizes uptime, simplifies SAN management, and provides unprecedented visibility and insight across the storage network. Offering innovative diagnostic, monitoring, and management capabilities, Fabric Vision technology helps administrators avoid problems, maximize application performance, and dramatically reduce operational costs. For more information about Fabric Vision technology, visit www.brocade.com/FabricVision.

Q What is Brocade ClearLink Diagnostics?

A The Brocade ClearLink Diagnostics tool, a patent-pending technology, leverages Brocade ClearLink Diagnostic Port (D_Port) mode to ensure optical and signal integrity for Gen 5 Fibre Channel optics and cables, simplifying deployment and support of high-performance fabrics. By proactively monitoring critical transceivers, organizations can quickly address any physical layer issues without the need for special optical testers.

ClearLink Diagnostics allows users to automate a battery of tests to measure and validate latency and distance across the switch links, as well as verify the integrity of all 16 Gbps transceivers in the fabric—either prior to deployment or when there are suspected physical layer issues. With ClearLink Diagnostics, only the ports attached to the link being tested need to go offline, leaving the rest of the ports to operate online.

In addition to switch-to-switch link validation, Brocade FOS 7.1 provides several enhancements, including:

- Dynamic ClearLink Diagnostics support between Gen 5 Fibre Channel switches and Brocade 1860 Fabric Adapters when running at 16 Gbps speed
- Support for Gen 5 Fibre Channel switches running in Brocade Access Gateway mode

Through collaboration with industry partners, Brocade will extend ClearLink Diagnostics to end devices, providing end-to-end physical layer diagnostics and validation.

Q What is integrated metro connectivity?

A Brocade 6520 and 6510 Switches support integrated SAN extension over native Fibre Channel (metro connections up to 100 km) for replication and backup over distance. Native Fibre Channel connections now include in-flight compression and encryption as well as optional support for 10 Gbps Fibre Channel over Dense Wavelength Division Multiplexing (DWDM) and dark fiber. To take advantage of the 10 Gbps Fibre Channel support, organizations need a software license and 10 Gbps optics.

Q How many ports can be configured on the Brocade 6520 and 6510 for 10 Gbps Fibre Channel support?

A On both the Brocade 6520 and 6510, the first eight ports can be configured to operate at 10 Gbps Fibre Channel for data center connectivity over DWDM.

Q What are the benefits of in-flight compression over Inter-Switch Links (ISLs)?

A In-flight compression optimizes network performance within the data center and over long-distance links. Data is compressed at the source and uncompressed at the destination. Performance varies by data type, but Brocade uses an efficient algorithm to generally achieve 2:1 compression with minimal impact on performance. Compression can be used in conjunction with in-flight encryption. In-flight compression is available only on Brocade 6520 and 6510 Switches and Brocade DCX® 8510 Backbone 16 Gbps port blades.

Q What are the benefits of in-flight encryption over ISLs?

A In-flight encryption minimizes the risk of unauthorized access for traffic within the data center and over long-distance links. It is switch-to-switch encryption, not device or data-at-rest encryption. Data is encrypted at the source and decrypted at the destination. Encryption and decryption are performed in hardware using the AES-GCM-256 algorithm, minimizing any impact on performance. Encryption can be used in conjunction with in-flight compression. In-flight encryption is available only on Brocade 6520 and 6510 Switches and Brocade DCX 8510 Backbone 16 Gbps port blades, and is complementary to data-at-rest encryption provided by the Brocade Encryption Switch and the Brocade FS8-18 Encryption Blade.

Q How many ports can be configured on Brocade 6520 and 6510 Switches for in-flight compression and encryption?

A For in-flight compression and encryption, the following can be configured:

- Up to sixteen ports at 8 Gbps and up to eight ports at 16 Gbps per Brocade 6520 Switch
- Up to four ports at 8 Gbps and up to two ports at 16 Gbps per Brocade 6510 Switch

No license is required for this feature.

Q How can Dynamic Fabric Provisioning simplify server deployment?

A Dynamic Fabric Provisioning (DFP) allows organizations to eliminate fabric reconfiguration when adding or replacing servers through the virtualization of host World Wide Names (WWNs). It combines Brocade switch and adapter technology to reduce or eliminate the need to modify zoning or Logical Unit Number (LUN) masking. In addition, DFP enables pre-provisioning of virtual WWNs, helping organizations eliminate time-consuming steps when deploying new equipment or moving devices within a switch. DFP currently requires Brocade adapters in the host.

Q How does the Condor3 switching ASIC compare to previous generations?

A The Condor3 ASIC powering the Gen 5 Fibre Channel platforms is the industry's most powerful and efficient switching technology. In addition to 16 Gbps speed, it includes more bandwidth (768 Gbps), faster I/O performance (420 million frames switched per second), more buffers, more functionality (including ClearLink Diagnostics [D_Port]), in-flight encryption and compression, Forward Error Correction (FEC), and higher energy efficiency (less than 1 watt/Gbps).

Q What other enhancements and features are included in Brocade FOS 7.1?

A Brocade FOS 7.1 includes:

- ClearLink Diagnostic Port (D_Port) enhancements
  - D_Port support (including auto-configuration support) from Brocade Gen 5 Fibre Channel Host Bus Adapters (HBAs), such as the Brocade 1860 Fabric Adapter, to Brocade Gen 5 Fibre Channel switches
  - D_Port support on Brocade Access Gateway
  - Other D_Port extensions: Users can specify the number of frames, frame size, test duration, and more
- Other Gen 5 Fibre Channel platform RAS enhancements
  - FEC, credit recovery from Brocade 16 Gbps HBAs to 16 Gbps switches (requires Brocade HBA driver 3.2)
- In-flight encryption and compression enhancements
  - Supports more ports for encryption/compression at reduced speeds
- Fabric services enhancements
  - FDMI (Fabric Device Management Interface) enhancements
  - Performance optimization on long-distance ISLs
- FCR enhancements
  - Removes support for Interop mode 2 and Interop mode 3
  - In-flight encryption/compression on EX_Ports
  - Pathinfo over FCR
  - Credit recovery on EX_Ports
- Additional RAS enhancements
  - Bottleneck detection, backend link monitoring, edge hold time, credit recovery RASlog enhancements
  - RASlog management, audit log for CLI, CLI history enhancements
  - SFP monitoring, pathinfo enhancements
- Access Gateway enhancements (Brocade 6510 and 6505 only)
  - D_Port support (16 Gbps only)
  - Credit recovery enhancements (both 8 Gbps and 16 Gbps)
  - FEC support on F_Ports and N_Ports (16 Gbps only)
- Brocade FOS security and user management enhancements
  - TACACS+ support in Brocade FOS
  - LDAP support enhancements, including OpenLDAP support
- FICON® enhancements
  - FICON support for the Brocade 6510

Q What other enhancements and diagnostic features are included in Brocade FOS 7.0?

A Brocade FOS 7.0 includes additional RASlog messages for optics failures; Frame Viewer for Class 3 discards; Forward Error Correction (FEC) on ISLs; additional Audit Log support for Brocade Fabric Watch events; user-defined Role-Based Access Control (RBAC) and other security enhancements; the addition of E_Ports to Top Talkers; and port fencing due to CRC errors, transmission errors, and invalid Traffic Isolation Zones.

Q What power management features are included?

A Brocade 6520, 6510, and 6505 Switches support real-time power measurement, providing insight into power consumption in the fabric.

Brocade 6520, 6510, and 6505 Hardware

Q Can an existing 8 Gbps Brocade switch be upgraded to 16 Gbps functionality?

A No. An 8 Gbps switch will not support 16 Gbps capabilities.

Q What types of encryption are available?

A There are generally two approaches to encryption: data-at-rest and data-in-flight. Data-at-rest encryption encrypts the data so that it is stored on the destination disk or tape in an encrypted form. Data-in-flight encryption (Brocade 6520 and 6510 only) encrypts data as it travels between two points in a network. Data is encrypted as it leaves a source port and decrypted as it arrives at the destination port. Technologies that provide encryption for data-in-flight include IPSec and MACsec (802.1AE) for Ethernet, and FC-SP for Fibre Channel. Data-at-rest and data-in-flight encryption are complementary technologies that serve different purposes, and each may be required in order to achieve regulatory compliance.

Q Are Brocade Small Form-Factor Pluggables (SFPs) required for the Gen 5 Fibre Channel switches?

A Yes. Brocade 6520, 6510, and 6505 Switches require Brocade-branded SFPs.

Q Why do Brocade 6520, 6510, and 6505 Switches require Brocade SFP optics?

A This provides quality control that in turn avoids application downtime. The greater the port speed—especially 16 Gbps—the less tolerance that switches have for out-of-spec wavelengths, which can lead to port failure and application interruption.

Q Are supported cable distances affected by 16 Gbps?

A Yes. Supported distances are reduced as Fibre Channel speed increases. See the table below.

Link Distance with Speed and Fiber Type

<table>
<tr><th rowspan="2">Transceiver Type</th><th rowspan="2">Form Factor</th><th rowspan="2">Speed</th><th colspan="4">Multi-Mode Maximum Distance</th><th>Single Mode Maximum Distance</th></tr>
<tr><td>OM1</td><td>OM2</td><td>OM3</td><td>OM4</td><td>9 µm</td></tr>
<tr><td rowspan="3">SWL</td><td>SFP+</td><td>16 Gbps</td><td>15 m</td><td>35 m</td><td>100 m</td><td>125 m</td><td rowspan="3">Not applicable</td></tr>
<tr><td>SFP+</td><td>10 Gbps</td><td>33 m</td><td>82 m</td><td>300 m</td><td>550 m</td></tr>
<tr><td>SFP+</td><td>8 Gbps</td><td>21 m</td><td>50 m</td><td>150 m</td><td>190 m</td></tr>
<tr><td rowspan="3">LWL</td><td>SFP+</td><td>16 Gbps</td><td colspan="4" rowspan="3">Not applicable</td><td>10 km</td></tr>
<tr><td>SFP+</td><td>10 Gbps</td><td>10 km</td></tr>
<tr><td>SFP+</td><td>8 Gbps</td><td>10 km, 25 km</td></tr>
<tr><td>ELWL</td><td>SFP+</td><td>16 Gbps</td><td colspan="4">Not applicable</td><td>10 km, 25 km</td></tr>
</table>

Q Will Brocade 6520, 6510, and 6505 Switches work with existing firmware versions in current fabrics?

A Brocade 6520 Switches require Brocade FOS 7.1 or higher. Brocade 6510 Switches require Brocade FOS 7.0 or higher. Brocade 6505 Switches require Brocade FOS 7.0.1 or higher. Brocade 6520, 6510, and 6505 Switches are compatible with all 8 Gbps platforms and 4 Gbps platforms operating with the appropriate firmware. All other legacy devices running prior versions of Brocade FOS are supported only through Fibre Channel routing. For complete support information, please refer to the respective Brocade FOS release notes.

Q Can Brocade 6520, 6510, or 6505 Switches be connected to legacy McDATA devices?

A Connecting Brocade 6520, 6510, or 6505 Switches to legacy McDATA devices is supported only through Fibre Channel routing.

Brocade 6520, 6510, and 6505 Software

Q What optional software licenses are available for the Brocade 6520 Switch?

A Optional value-add licenses for the Brocade 6520 include: Integrated Routing, 10 Gbps Fibre Channel extension, Ports on Demand (PoD), Brocade Advanced Performance Monitoring, Brocade Extended Fabrics, Brocade Fabric Watch, and Brocade ISL Trunking. Brocade Server Application Optimization (SAO) and Brocade Adaptive Networking are now included as part of Brocade FOS 7.1, so no software license is required for these features on the Brocade 6520.

Q What optional software licenses are available for the Brocade 6510 Switch?

A Optional value-add licenses for the Brocade 6510 include Integrated Routing, FICON CUP, 10 Gbps Fibre Channel extension, Ports on Demand (PoD), Brocade Adaptive Networking, Brocade Advanced Performance Monitoring, Brocade Extended Fabrics, Brocade Fabric Watch, Brocade Server Application Optimization (SAO), and Brocade ISL Trunking.

Q What optional software licenses are available for the Brocade 6505 Switch?

A Optional value-add licenses for the Brocade 6505 include Ports on Demand (PoD), Brocade Adaptive Networking, Brocade Advanced Performance Monitoring, Brocade Extended Fabrics, Brocade Fabric Watch, Brocade Server Application Optimization (SAO), and Brocade ISL Trunking.

Q What key SAN management capabilities are provided by Brocade Network Advisor?

A Brocade Network Advisor provides comprehensive management of data center SAN fabrics, including configuration, monitoring, diagnostics, best-practices validation, and management of Brocade DCX 8510 Backbones, Brocade DCX Backbones, Brocade SAN directors and SAN switches (including Brocade Gen 5 Fibre Channel platforms), Host Bus Adapters (HBAs), and Converged Network Adapters (CNAs).

Brocade Network Advisor also provides out-of-the-box support for leading data center management solutions from IBM, HP, and EMC, as well as seamless support for leading hypervisors from VMware and Microsoft.

Q What other simplified management tools are available for Brocade 6520, 6510, and 6505 Switches?

A Brocade 6520, 6510, and 6505 Switches support EZSwitchSetup for intuitive “plug-and-play” deployment.

Q What is Brocade Access Gateway mode?

A Brocade Access Gateway mode can make a switch appear transparent to hosts or the network fabric. With a switch configured in Access Gateway mode, F_Ports connect to the fabric as N_Ports rather than E_Ports. This allows more hosts (and VMs) to access the fabric without increasing the number of switches—thereby simplifying configuration and reducing the number of Domain IDs to manage. Access Gateway enhancements include Brocade Frame-based Trunking, QoS, ClearLink Diagnostic Ports (D_Ports), FEC, and interoperability with multivendor fabrics. Refer to Brocade FOS release notes for additional Access Gateway enhancements.

Q What switches support Access Gateway mode?

A Brocade 6510, 6505, 5100, and 300 Switches, as well as Brocade 50xx and 40xx Blade Server Switches support Access Gateway mode. Brocade Access Gateway mode is not supported on the Brocade 6520.

Q Do I need a license to utilize Brocade Virtual Fabrics features?

A No. Brocade Virtual Fabrics capabilities for the Brocade 6520 and 6510 Switches are included as part of the base Brocade FOS software (not supported on the Brocade 6505).

Brocade 6510 Mainframe Support

Q What do mainframe environments gain by using Brocade 6510 Switches?

A Brocade 6510 Switches provide significant value for System z environments, including:

- Users can immediately capitalize on 16 Gbps connectivity for System z. The Brocade 6510 Switch delivers 48 ports at full 16 Gbps speed without oversubscription.
- At 0.14 watt/Gbps, the Brocade 6510 Switch frees up limited power and cooling resources to support more mainframe and storage equipment.
- Brocade Virtual Fabrics capabilities allow data centers supporting both open systems and System z to logically partition a switch and SAN fabric into Fibre Channel and FICON environments. This enables the data center to reduce network infrastructure costs and improve return on investments, while keeping Fibre Channel and FICON management and traffic flows separate.
- For data replication and backup over distance, the combination of Brocade 6510 and Brocade 7800 Extension Switches provides powerful extension capabilities that include disk-write acceleration over extended Fibre Channel and FCIP links (called Fast Write), FICON Tape Pipelining to accelerate tape reads and writes, and FICON Global Mirror Disk Emulation to accelerate disk reads when using IBM Global Mirror.
- Brocade Top Talkers and Adaptive Networking capabilities help optimize FICON environments and application service levels.

Q Can a single Brocade 6510 Switch with mixed FICON and Fibre Channel traffic use CUP to manage the system?

A If CUP is used to manage the FICON environment, all FICON and Fibre Channel ports are visible and can be managed using CUP. If an organization is using Brocade Virtual Fabrics and "Logical Switch," CUP can be used to manage only those ports in the partition to which it is defined.

Q Can I manage a FICON fabric with Brocade DCFM and Brocade Network Advisor?

A Brocade Data Center Fabric Manager (DCFM®) 10.4.1 supports only 8 Gbps Brocade DCX platforms and switches. Brocade Network Advisor 11.1.2 supports the entire Brocade DCX 8510, Brocade DCX, and Brocade switch product families, and is required for managing the Gen 5 Fibre Channel platforms in FICON environments.

BROCADE