

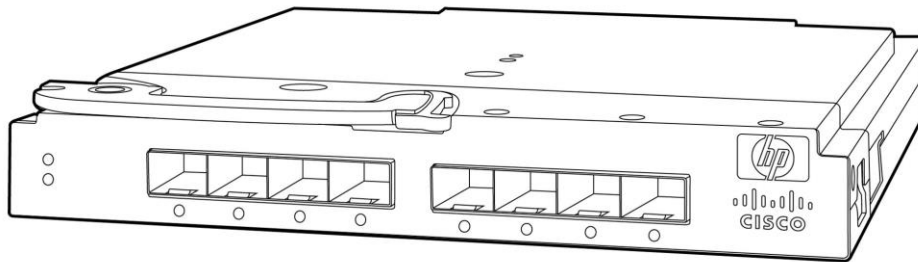
QuickSpecs

Cisco MDS 8Gb Fabric Switch for HP BladeSystem c-Class

Overview

Cisco MDS 8Gb Fabric Switch for HP BladeSystem c-Class

The Cisco MDS 8Gb Fabric Switch for HP BladeSystem c-Class delivers an embedded option for HP BladeSystem c-Class customers deploying storage area networks in their enterprise. The integrated design frees up rack space, enables a reduction of components, and utilizes shared power and cooling within the BladeSystem enclosure resulting in space and cost savings. The Cisco MDS 8Gb Fabric Switch supports VSAN, an industry standard for fabric virtualization enabling more efficient network use. The N-Port Virtualizer FlexAttach mode streamlines the infrastructure by reducing the number of domains to manage while enabling the ability to add or move servers without impacting the SAN. Advanced traffic management features optimize the fabric. Management is simplified with a broad range of integrated tools and switch management is integrated with HP BladeSystem management creating a unique and tightly integrated experience for server and storage administrators.



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Key Features and Benefits

The Cisco MDS 8Gb Fabric Switch for HP BladeSystem c-Class

- | | |
|---|--|
| Integrated design lowers TCO and enables higher levels of availability | The Cisco MDS 8Gb Fabric Switch hot-plugs into the back of the HP BladeSystem c-Class enclosure, freeing up rack space. Interconnect internal to the BladeSystem reduces cabling, SFPs and associated costs. Shared power and cooling resources further reduces cost and additional points of failure. |
| Exceptional performance, scalability and flexibility | Employs high speed 8 Gbps technology for storage networking. N-Port Virtualizer feature uses NPIV technology to eliminate domain count concerns and FlexAttach mode extends the technology to enable servers to be added or moved without impact to the SAN. |
| High availability | Designed for environments where downtime is not an option. Up to six FC switches are supported in the BladeSystem enclosure. Hot-pluggable design supports non-disruptive upgrades, VSANs for fault isolation, and PortChannels for ISL resiliency. |
| Flexible licensing | Dynamic and growing businesses require the flexibility to manage their investment wisely. Designed to scale as business needs dictate with the option of a 12-port model and a 12-port upgrade license. |
| Traffic management | Simplifies deployment while optimizing core edge fabrics with support for virtual output queuing, flexible buffer credit allocation, PortChannels, Fabric Shortest Path First (FSPF), and more. |
| VSAN support | Support for up to 32 VSANs per switch that can be zoned as its own fabric enables efficiency, lower cost through shared usage, the flexibility of independent configuration control, and increased security through isolation of devices on the same physical SAN. |
| Long distance support | Individual ports can be configured with short- or long-range SFP+ optics for connectivity of up to 10 |

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kilometers.

Broad range of management options

Simple and consistent with support by the Cisco MDS 9000 family management tools including a CLI, Cisco Fabric Manager and a standards-based API supporting SNMP and SMI-S. Also supported by HP unified server and storage management tools.

Comprehensive security

Offers an extensive security framework to protect highly sensitive data crossing today's enterprise networks.

Advanced diagnostics and troubleshooting tools

Integrates the industry's most advanced analysis and debugging tools for proactive diagnostics, verification of connectivity and route latency, and capturing and analyzing traffic.

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Configuration support	Please see the following Web site for configuration support at: http://h18000.www1.hp.com/products/storageworks/san/documentation.html
Cost Effective Intelligent Storage networking	Powered by Cisco MDS 9000 NX-OS Software, offers intelligent storage networking capabilities such as Virtual SANs (VSANs), PortChannels, quality of service (QoS), and security for cost-effective design, deployment, and management of enterprise SANs.
Highly available platform for mission-critical deployments	Designed for environments where downtime is not an option. It offers non-disruptive software upgrades, VSANs for fault isolation, and PortChannels for Inter-Switch Link (ISL) resiliency.
Flexibility	<p>Offers up to 24 8/4/2-Gbps auto-sensing Fibre Channel ports with 8 Gbps of dedicated bandwidth to each port, and an aggregate platform bandwidth of 384 Gbps. Starts with a base configuration of 12 ports (8 internal and 4 external ports) with flexibility to upgrade in the field to 24 ports using 12-port upgrade activation license. The N-Port Virtualizer (NPV) feature employs industry-standard N-Port Virtualization technology to eliminate domain count concerns and enable fabric interoperability. FlexAttach further extends NPV to enable servers to be added or moved within or between BladeSystem enclosures without any impact to the SAN.</p> <p>There can be a total of 16 internal ports for connectivity to 16 server blades and 8 front panel ports for connectivity to the SAN, server, or storage devices.</p>
Simplified storage management	Includes built-in storage network management, with all features available through a command-line interface (CLI) and the Cisco Data Center Network Manager (DCNM).
Comprehensive security framework	Supports RADIUS and TACACS+, port security, fabric binding, Fibre Channel Security Protocol (FC-SP) host-to-switch and switch-to-switch authentication, Secure FTP (SFTP), Secure Shell Version 2 (SSHv2) and Simple Network Management Protocol Version 3 (SNMPv3) implementing Advanced Encryption Standard (AES), VSANs, hardware-enforced zoning, broadcast zones, and per-VSAN role-based access control (RBAC).
Sophisticated diagnostics	Industry-leading intelligent diagnostics such as Fibre Channel Ping, Fibre Channel Traceroute, Switched Port Analyzer (SPAN), Cisco Fabric Analyzer, and integrated call-home capability enhance reliability, facilitate faster problem resolution, and reduce service costs.
Interoperability	Common platform architecture and the use of Cisco MDS 9000 NX-OS Software intelligent storage-networking services across all Cisco MDS 9000 family switches reduces ongoing operating expenses by providing a consistent set of provisioning, management, and diagnostic capabilities. Offers compatibility with a broad range of HP servers and operating systems, as well as storage devices; see current compatibility matrix.

Software Components, Included

NX-OS	Cisco MDS 9000 NX-OS delivers numerous advanced storage networking capabilities for the Cisco MDS 9000 Family of Multilayer Intelligent Directors and Fabric Switches.
Cisco Data Center Network Manager	Cisco Data Center Network Manager is a responsive, easy-to-use Java application that simplifies management across multiple switches and fabrics. Cisco Data Center Network Manager enables

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administrators to perform vital tasks such as topology discovery, fabric configuration and verification, LUN security, monitoring, and fault resolution. All functions are available through a secure interface, which enables remote management from any location. Cisco Data Center Network Manager may be used independently or in conjunction with third-party management applications. Cisco provides an extensive API for integration with third-party and user developed management tools.

Software Components, Optional

HP StoreFabric Data Center Network Manager Package The "Standard" Cisco Data Center Network Manager software that is included at no charge with the Cisco MDS 8Gb Fabric Switch for HP BladeSystem provides basic switch configuration and troubleshooting capabilities. HP's C-series StoreFabric Data Center Network Manager (DCNM) Package extends Cisco Data Center Network Manager by providing historical performance data collection for network traffic hot-spot analysis, centralized management services and advanced application integration.

HP MDS 9100 Enterprise Package License HP's C-series MDS switches have a set of advanced traffic engineering and advanced security features that are recommended for all Enterprise SANs. These features are bundled together in a management application called the HP MDS 9100 Enterprise Package.

BladeSystem compatibility

NOTE: The Cisco MDS 8Gb Fabric Switch for HP BladeSystem c-Class must be deployed with the BladeSystem c-Class infrastructure and will only work with the HP BladeSystem c-Class Enclosures.

HP ProLiant Servers ProLiant BLc server blades

HP Integrity Servers Integrity BLc server blades*

* Supported with the following HP BladeSystem c-Class Enclosures: 507019-B21, AD361C, 508668-B21, and AH257B.

HP BladeSystem c-Class Enclosures HP BladeSystem c7000 and c3000 Enclosures

Product Family Models

- HP StoreFabric SN8500C 8-slot 16Gb FC Director
 - Intelligent, multi-protocol 8-slot Director with up to 384 16/8 Gb Fibre Channel ports in a single chassis. Also, the HP StoreFabric SN8500C 48-port 16Gb FC Module and the included Fabric 1 modules provide up to 384 ports of full 16Gbps line-rate performance across all ports.
- HP StoreFabric SN8500C 4-slot 16Gb FC Director (MDS 9706)
 - Intelligent, multi-protocol 4-slot Director with up to 192 16/8/4 Gb Fibre Channel ports in a single chassis. Also, the HP StoreFabric SN8500C 48-port 16Gb FC Module and the included Fabric 1 modules provide up to 192 ports of full 16Gbps line-rate performance across all ports or 192 10GbE FCoE ports in a single chassis.
- HP SN8000C 13-Slot Supervisor 2A Fabric3 Director
 - Intelligent, multi-protocol 13-slot Director with up to 528 Auto-Sensing 8/4/2 Gb Fibre Channel ports in a single chassis. Also, the 32-port 8Gb Advanced Fibre Channel modules and the included Fabric 3 modules provide up to 352 ports of full 8Gbps line-rate performance across all ports.
- HP SN8000C 6-Slot Supervisor 2A Director
 - Intelligent, multi-protocol 6-slot Director with up to 192 Auto-Sensing 8/4/2 Gb Fibre Channel ports

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- **HP SN6500C 16Gb Multi-service Switch**
 - Intelligent multi-protocol Fabric Switch with twenty fixed 16/8 Gb Fibre Channel ports, two fixed 10 Gigabit Ethernet FCIP ports, and eight fixed 10 Gigabit Ethernet FCoE ports. Provides up to forty active 16/8 Gb Fibre Channel ports through a port upgrade license.
- **HP SN6010C 16Gb Fabric Switch (MDS 9148S)**
 - With up to 48 Auto-Sensing 16/8/4 Gb Fibre Channel ports
 - "Pay as you grow" scalability starting at 12 ports
- **Cisco MDS 8Gb Fabric Switch for HP BladeSystem c-Class**
 - With up to 24 Auto-Sensing 8/4/2 Gb Fibre Channel ports
 - "Pay as you grow" scalability starting at 12 ports

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Service and Support, HP Care Pack and Warranty Information

Warranty (1-1-1) Hardware Warranty - One-year on-site warranty, normal business hours, next business day response, installation not included.

NOTE: The hardware warranty covers firmware and embedded non-saleable software.

HP Care Pack Services: Packaged server and storage services for increased uptime, productivity and ROI

When you buy HP server and storage products and solutions, it's also a good time to think about what levels of support you may need. Our portfolio of service options reduce deployment and management worries while helping you get the most out of your server and storage investments. We take a holistic approach to your environment, bridging servers, blades, storage, software and network infrastructures with our packaged HP Care Pack Services for servers and storage.

Protect your business beyond warranty

When it comes to robustness and reliability, standard computing equipment warranties have matured along with technology. Good news that can also create problems stemming from depending on standard warranties designed to only protect against product defects and some downtime causes. Using a standard approach to warranty uplifts, such as HP Care Pack Services, helps reduce downtime risks and provides operational consistency for mission-critical and standard business computing.

HP Care Pack Services: Upgrading or extending standard server and storage warranties cost effectively

HP recommends Proactive Care for your BladeSystem servers, enclosures and components to prevent problems with proactive advice and assistance, resolve issues and rapidly recover by connecting to HP's enhanced call experience and advanced technical expertise. In addition with HP Proactive Select, you can acquire the specific proactive constancy and technical services. HP Proactive Select menu offers a broad set of service options that you can mix and match depending on your specific requirements. Proactive service options include offers for server, storage, network, SAN device, software, environment and education services.

HP server and storage lifecycle support services offers a full spectrum of customer care-from technology support to complex migrations to complete managed services. HP Factory Express provides customization, integration and deployment services for turnkey solutions. HP Education Services offer flexible, comprehensive training on to help your IT staff get the most out of your server and storage investments. HP Financial solutions extend innovative financing and cost-effective asset management programs-from purchase to equipment retirement.

Learn more: <http://www.hp.com/services/servers> and <http://www.hp.com/services/storage>

NOTE: Care Pack Services availability may vary by product and country.

HP Care Pack Services are sold by HP and HP Authorized Service Partners:

- Services for customers purchasing from HP or an enterprise reseller are quoted using HP order configuration tools
- Customers purchasing from a commercial reseller can find HP Care Pack Services at <http://www.hp.com/go/lookuptool>

Recommended HP Care Pack Services for optimal satisfaction with your HP product.

Optimized Care : to ensure optimum performance

Proactive Care Advanced 3 Year 24x7 - Builds and incorporates on Proactive Care and also gives customers personalized technical and operational advice from an Assigned, local Account Support Manager for personalized technical collaboration, flexible access to specialist skills to help optimize business critical IT, and Enhanced Critical Incident Management to help so the business is not affected if there is a system or device outage.

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Service and Support, HP Care Pack and Warranty Information

<http://h20195.www2.hp.com/v2/GetDocument.aspx?docname=4aa5-3259enw&404m=secure-erc>

Additional Option : 3 Year (or) 1 Year HP Proactive Select Credits

Standard Care : to maintain system uptime

HP Proactive Care 3 Year 24x7 - Hardware and software support services designed specifically for your technology with rapid access to Advanced Solution Center Specialists plus firmware and software management and best practice advice.

<http://h20195.www2.hp.com/v2/GetPDF.aspx/4AA3-8855ENW.pdf>

Additional Option : 3 Year (or) 1 Year HP Proactive Select Credits

Basic Care : minimum recommended support

HP Foundation Care 3 Year 24x7 - HP Foundation Care 24x7 connects you to HP around the clock for assistance on resolving issues with hardware onsite response within four hours and software call back within two hours after opening your case.

<http://h20195.www2.hp.com/V2/GetPDF.aspx/4AA4-0226ENW.pdf> **Additional Option : 3 Year (or) 1 Year HP Proactive Select Credits**

Additional Services Information

To learn more on HP ProLiant servers, HP BladeSystem servers and HP storage products, please contact your HP sales representative or HP Authorized Channel Partner. Or visit <http://www.hp.com/services/proliant> or <http://www.hp.com/services/bladeSystem> or <http://www.hp.com/services/storage>

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Family Information

	HP StoreFabric SN8500C 4-slot 16Gb FC Director	HP StoreFabric SN8500C 8-slot 16Gb FC Director	HP SN8000C 6-Slot Director w/Dual Supervisor 2A	HP SN8000C 13-Slot Supervisor 2A Fabric3 Director	SN6010C 16Gb Fabric Switch	HP SN6500C 16Gb Multi-service Switch	Cisco MDS 8Gb Fabric Switch for HP BladeSystem c-Class
Switch Type	Multilayer Director	Multilayer Director	Multilayer Director	Multilayer Director	Multilayer Fabric Switch	Multi-service Fabric Switch	Embedded Fabric Switch
Maximum ports	192 16 Gbps Fibre Channel ports, 192 FCoE ports	384 16 Gbps Fibre Channel ports, 384 FCoE ports	192 8 Gbps Fibre Channel ports, 16 IP ports	528 8 Gbps Fibre Channel ports, 44 IP ports	Up to 48 16 Gbps Fibre Channel ports	Up to 40 16 Gbps FC ports, 2 fixed 10GbE FCIP ports, 8 fixed 10GbE FCoE ports	16 Internal, 8 8 Gbps Fibre Channel ports
Number of slots per chassis	Four	Eight	Six	Thirteen	One fixed	Two fixed	One fixed

For additional switch support information, refer to the C-series FC Switch Connectivity Stream on the Single Point of Connectivity Knowledge (SPOCK) website at: <http://www.hp.com/storage/spock>. You must sign up for an HP Passport to enable access. Once logged in, click Switches under Other Hardware in the last navigation panel of the window to access the Fibre Channel Switch Streams. Click on the C-Series FC Switch Connectivity Stream to open the document.

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Configuration Information

Step 1 - Base Configuration

Select one:

Model Number	Model Description	Part Number
HP MDS 8/12c Fabric Switch	<ul style="list-style-type: none"> (1) 8Gb Fabric Switch 12 ports enabled (8 internal, 4 external) two (2) short range 8Gb SFP+ optics 	<ul style="list-style-type: none"> NX-OS eight (8) port dust covers documentation AW563A*
HP MDS 8/24c Fabric Switch	<ul style="list-style-type: none"> (1) 8Gb Fabric Switch 24 ports enabled (16 internal, 8 external) four (4) short range 8Gb SFP+ optics 	<ul style="list-style-type: none"> NX-OS eight (8) port dust covers documentation AW564A*

* #OD1 will appear after this part number on your sales order when factory integration is indicated.

Step 2 - Additional Options

Hardware:

Model Name	Model Description	Part Number																
8 Gbps Short Range Optical Transceivers (SFP+)	Cisco MDS 9000 8Gb FC SFP+ Short Range Transceiver Distance Maximum <table border="1"> <thead> <tr> <th>Connection Speed</th> <th>OM2 Cable</th> <th>OM3 Cable</th> <th>PremierFlex Cable</th> </tr> </thead> <tbody> <tr> <td>8Gb</td> <td>50m</td> <td>150m</td> <td>150m</td> </tr> <tr> <td>4Gb</td> <td>150m</td> <td>380m</td> <td>380m</td> </tr> <tr> <td>2Gb</td> <td>300m</td> <td>500m</td> <td>500m</td> </tr> </tbody> </table>	Connection Speed	OM2 Cable	OM3 Cable	PremierFlex Cable	8Gb	50m	150m	150m	4Gb	150m	380m	380m	2Gb	300m	500m	500m	AJ906A
Connection Speed	OM2 Cable	OM3 Cable	PremierFlex Cable															
8Gb	50m	150m	150m															
4Gb	150m	380m	380m															
2Gb	300m	500m	500m															
8 Gbps Long Range Optical Transceivers (SFP+)	Cisco MDS 9000 8Gb FC SFP+ Long Range Transceiver Distance Maximum <table border="1"> <thead> <tr> <th>Connection Speed</th> <th>9.0 Micron Cable</th> </tr> </thead> <tbody> <tr> <td>8Gb</td> <td>10km</td> </tr> <tr> <td>4Gb</td> <td>10km</td> </tr> <tr> <td>2Gb</td> <td>10km</td> </tr> </tbody> </table>	Connection Speed	9.0 Micron Cable	8Gb	10km	4Gb	10km	2Gb	10km	AJ907A								
Connection Speed	9.0 Micron Cable																	
8Gb	10km																	
4Gb	10km																	
2Gb	10km																	

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Configuration Information

4 Gbps Short Range Optical Transceivers (SFPs)	Cisco MDS 9000 4Gb FC SFP, Short Range Transceiver 500m, (4 Pack)	AE379A
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Distance Maximum

Connection Speed	OM2 Cable	OM3 Cable	PremierFlex Cable
4Gb	310m	500m	500m
2Gb	500m	860m	860m

NOTE: Additional SFPs are optional and must be ordered separately. Fibre Channel ports on the MDS 8Gb Fabric Switch may be configured to accept either Short Range SFP or Long Range SFP optic transceivers. However, when ordering the MDS 8Gb Fabric Switch, ports must be populated with above SFP optical transceiver options only (no substitutes allowed). Using other transceivers may void product warranty.

Optical cables	OM3 LC-LC type cables	
	.5 m LC-LC Multi-Mode OM3 Fibre Channel Cable	AJ833A
	1 m LC-LC Multi-Mode OM3 Fibre Channel Cable	AJ834A
	2 m LC-LC Multi-Mode OM3 Fibre Channel Cable	AJ835A
	5 m LC-LC Multi-Mode OM3 Fibre Channel Cable	AJ836A
	15 m LC-LC Multi-Mode OM3 Fibre Channel Cable	AJ837A
	30 m LC-LC Multi-Mode OM3 Fibre Channel Cable	AJ838A
	50 m LC-LC Multi-Mode OM3 Fibre Channel Cable	AJ839A

Software:

Optional Software	HP MDS 8/12c 12-port Upgrade LTU	TA804A
	NOTE: Licensed per switch	
	HP StoreFabric Data Center Network Manager BladeSystem LTU	TC367A
	HP MDS 9100 Enterprise Package License -1 MDS 9100 Swt LTU	A7515A
	NOTE: Licensed per switch	

Step 3 - Installation Service Option

<http://www.hp.com/hps/support>

For more information on HP SAN switches, contact any of our worldwide sales offices or visit our Web site at:

<http://www.hp.com/go/san>.

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Fibre Channel ports	Cisco MDS 8Gb 12-port Fabric Switch model	8 internal 8 Gbps internal ports and 4 external 8 Gbps auto-sensing ports (ships with two (2) 8 Gbps short range SFP+ optics)
	Cisco MDS 8Gb 24-port Fabric Switch model	16 internal 8 Gbps internal ports and 8 external 8 Gbps auto-sensing ports (ships with four (4) 8 Gbps short range SFP+ optics)
Device support and Scalability guidelines	http://h18006.www1.hp.com/products/storageworks/san/documentation.html	
Performance	8 Gb/sec line speed, full duplex	
Certified maximum	Certified maximum information available at: http://h18006.www1.hp.com/products/storageworks/san/documentation.html	
Switch core	Non-blocking	
Maximum frame size	2112-byte payload	
Classes of service	Class 2, Class 3, Class F (inter-switch frames)	
Port types	FL_Port, F_Port, and E_Port; N_Port, NP_Port, TF_Port, self-discovery based on switch type (U_Port)	
Data traffic types	Fabric switches supporting unicast and broadcast	
Media types	8 Gbps Small Form-Factor Pluggable Plus (SFP+) optical transceivers. 2/4/8 Gbps short range up to 500 m (1,640 ft.) and 2/4/8 Gbps long range up to 10 km.	
Laser	Distance using short-wave 8 Gbps optical transceivers at 2 Gbps, 4 Gbps, and 8 Gbps connection speed:	
	8 Gbps:	OM3 fiber: 150m OM2 fiber: 50m
	4 Gbps:	PremierFlex OM3+/OM3 fiber: 270 m OM2 fiber: 150 m
	2 Gbps:	OM3 fiber: 500 m OM2 fiber: 300 m
Fabric services	Name server, registered state change notification (RSCN), login services, public loop, broadcast, in-order delivery, name-server zoning	
Options	SFP+ media, upgrade licensing, management software	
Supported software	Telnet, SNMP (FE MIB, FC Management MIB), HP Systems Insight Manager, HP Storage Essentials, HP Onboard Administrator for BladeSystem, Fabric Manager, Fabric Manager Server, Enterprise Package	
Management access	In-band via HP On-Board Administrator for BladeSystem	
Diagnostics	Power-on self test (POST) diagnostics, online diagnostics, internal loopbacks, SPAN, Fibre Channel traceroute, Fibre Channel Ping, Fibre Channel Debug	
Dimensions	Depth	11.00 in. (with handle protrusion)
	Height	1.25 in.
	Width	7.75 in.
	Weight	Approx. 2.5 lb - without media
Environment	System Inlet Temperature	Operating 10° to 35°C (50° to 95°F) at sea level with an altitude derating of 1.0°C per every 305m (1.8°F per every 1000ft) above sea level to a maximum of 3050m (10,000ft), no direct

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			sustained sunlight. Maximum rate of change is 10°C/Hr (18°F/Hr). The upper limit may be limited by the type and number of options installed.
		Non-operating	System performance may be reduced if operating with a fan fault or above 30°C (86°F).
	Relative Humidity	Operating	-30° to 60°C (-22° to 140°F). Maximum rate of change is 20°C/Hr (36°F/Hr).
		Non-operating	10 to 90% relative humidity (Rh), 28°C (82.4°F) maximum wet bulb temperature, non-condensing.
	Altitude	Operating	5 to 95% relative humidity (Rh), 38.7°C (101.7°F) maximum wet bulb temperature, non-condensing.
		Non-operating	3050 m (10,000 ft). This value may be limited by the type and number of options installed. Maximum allowable altitude change rate is 457 m/min (1500 ft/min).
Vibration	Operating	1 G, 10-500 Hz, 60 minutes per axis	
	Non-operating	2 G, 10-500 Hz, 30 minutes	
Shock	Operating	Half-sine-wave shock, 40 G, 2 ms duration, in each direction of three mutually perpendicular axes.	
	Non-operating	Half-sine-wave shock, 140 G, 2 ms duration, in each direction of three mutually perpendicular axes; and square-wave shock up to 80 G, 180 inches/s velocity change, in each direction of three mutually perpendicular axes.	
EMI		CFR 47 Subpart B of Part 15 of the FCC Rules, Class A level	
		CISPR22 Class A	
		EN55022 Class A	
		VCCI Class A ITE	
		AS/NZS 3548 Class A	
		CNS 13438 Class A	
		EMC Directive (89/336/EEC) for CE Marking in European Union	
Safety		Underwriters Laboratories, UL60950	
		Canadian Standards Association, CSA60950	
		TUV Rheinland of North America, EN60950	
		Nemko, EN60950	
		Low Voltage Directive (73/23/EEC) for CE Marking in European Union	
Fibre Channel Standards And Revisions		<ul style="list-style-type: none">• FC-PH, Revision 4.3• FC-PH-2, Revision 7.4• FC-PH-3, Revision 9.4• FC-GS-2, Revision 5.3• FC-GS-3, Revision 7.01	

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Technical Specifications

- FC-FLA, Revision 2.7
 - FC-FG, Revision 3.5
 - FC-SW-2, Revision 5.3
 - FC-AL, Revision 4.5
 - FC-AL-2, Revision 7.0
 - FC-PLDA, Revision 2.1
 - FC-VI, Revision 1.61
 - FCP, Revision 12
 - FCP-2, Revision 7
 - FC-SB-2, Revision 2.1
 - FC-BB, Revision 4.7
 - FC-FS, Revision 1.9
 - FC-PI, Revision 13
 - FC-MI, Revision 1.99
 - FC-Tape, Revision 1.17
 - IP over Fibre Channel (RFC 2625)
 - Extensive IETF-standards-based TCP/IP, SNMPv3, and Remote Monitoring (RMON) MIBs
 - Class of service: Class 2, Class 3, Class F
 - Fibre Channel standard port types: E, F, FL
 - Fibre Channel enhanced port types: SD, TE, NP, TF
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Summary of Changes

Date	Version History	Action	Description of Change:
18-Sept-2015	From Version 6 to 7	Changed	Removed SN6000C switches now obsolete
20-Feb-2015	From Version 5 to 6	Changed	Updated software licenses and Family Information
18-Apr-2014	From Version 4 to 5	Changed	Service and Support were revised.
12-Apr-2013	From Version 3 to 4	Changed	Configuration Information: Removed PremierFlex OM3 + LC-LC type cables from the Optical cables section.
28-Dec-2012	From Version 2 to 3	Changed	Service & Support, HP Care Pack and Warranty Information: URL changed in HP Care Pack Services section.
09-Jun-2011	From Version 1 to 2	Removed	Removed "StorageWorks" from the document.

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