Overview

For a converged and virtualized environment to exist, there is pressure on the IT organization to manage fewer devices, utilize less energy and resources, and transfer data faster, all while handling similar or higher volumes of work than a traditional environment. When large amounts of data need to be transferred between data centers, arrays, or sites, a faster link can allow the same tasks to be completed in less time.

With virtualization taking a strong hold in the datacenter, and the resulting increase in the storage networking traffic, customers want high performance, high capacity, and a reliable storage area network (SAN) enabling them to deploy enterprise class applications. This high density virtualization combined with new storage technologies is driving even higher I/O and bandwidth requirements in the SAN and this problem is solved with 16Gb Fibre channel switching products and solutions from HP Storage.

The HP StoreFabric C-series, SN8500C Director delivers many unique innovations for constructing powerful, large scale storage networks. With these innovations, users can build highly scalable, always available, high performance storage network solutions with comprehensive security and unified management. The HP StoreFabric SN8500C 8-slot 16Gb FC Director delivers industry-leading scalability and performance (up to 24-Tbps front panel FC switching bandwidth), high port density (up to 384-ports in an SN8500C 8-Slot Director) and high availability to lower TCO and enable integrated SAN infrastructures. HP delivers the HP StoreFabric SN8500C 8-slot 16Gb FC Director with high availability features inherent in the design. The base units include an 8 slot modular chassis with 2 hot swappable redundant Supervisor 1 Modules, and 6 hot swappable redundant 3000W Power Supplies , to help ensure smooth, continuous operation and non-disruptive upgrade capability. The HP StoreFabric SN8500C 8-slot 16Gb FC Director also includes 3 hot swappable redundant Fabric 1 Modules making even the backplane fabric both redundant and hot-swappable, thereby taking fabric availability to a higher plane. The open expansion slots of the SN8500C Director ccan be filled by HP StoreFabric C-series Family Modules, which include a 48-port 16Gb FC Module.

Layered, intelligent features also include integration with fabric-based applications to fabric-wide services for a wide range of solutions for business continuance, storage virtualization, network assisted backup and information life cycle management

Key Features and Benefits

- **Reduced Total Cost of Ownership (TCO) for SAN Infrastructure**
  - Enables storage consolidation, simplified management of SAN environment
- **High Port Density**
  - 384 Fibre Channel ports (auto-sensing 16/8/4 or 8/4, or 10Gbps/) in single chassis
    - Up to 1152 2/4/8-GbpsFibre Channe lin a standard rack
- **Scalable**
  - Supports throughput up to 256Gb in a single PortChannel 'ISL Trunk'
    - Offers 48 to 384 Fibre Channel ports in a single chassis
- **Highly Available**
  - Grid Redundancy on Power Supply and 1+1 redundant Supervisors
  - Users can add additional fabric card to enable N+1 Fabric Redundancy
  - Combines non-disruptive software upgrades, stateful process restart and failover, and full redundancy of all major components
  - Supplies 1.5-Tbps in each directions, per slot for full 16Gb line rate performance in all slots
- **Interoperable**
  - Broad range of HP servers and operating systems
  - Disk and tape storage devices
  - Common architectural platform across all SN8500C and MDS9700 family products
- **Integrated Management**
  - Unified SAN management: includes built-in storage network management with all features available through a command-line interface (CLI)

Overview

- ○ Provides intelligent diagnostics, protocol decoding, and network analysis tools as well as integrated Call Home capability for added reliability, faster problem resolution, and reduced service costs.
- ○ Embedded Device Manager
- ○ Integration with HP OpenView and HP Storage Essentials
- ○ Integration with Cisco Works Resource Manager Essentials (RME)
- ● **Hardware Assisted Encryption Security**
- ● **Comprehensive network security framework**
  - ○ Comprehensive security framework consisting of RADIUS and TACACS+, Fibre Channel Security Protocol (FC-SP), Secure File Transfer Protocol (SFTP), Secure Shell (SSH) Protocol, and Simple Network Management Protocol Version 3 (SNMPv3)

Product Highlights

SN8500C Director	Supports up to 384 ports capable of 16/8/4 Gbps (with the use of the SN8500C FC 48 port Modules).

Network-based Intelligent Storage Applications	- Integrated hardware-based VSANs and Inter-VSAN Routing (IVR) - Data replication and backup - Smart Zoning

Security	Supports role-based access control, VSANs, hardware-enforced Zoning, FC-SP, ACLs, RADIUS authentication and TACACS+, SNMPv3, SSH, SFTP, and IPsec.

High Performance	- Up to 24 Terbits/sec total internal system throughput 16Gbps Fibre Channel for ISL connectivity to 8Gbps platforms supporting 10Gb - Port Channels up to 16Gb - Supports data compression

Intelligent network services	- Integrated hardware-based VSANs and Inter-VSAN Routing (IVR): - Virtualization - Data replication - Network-Assisted Back-up IP and FC network acceleration Virtual SANs (VSANs and Inter-VSAN routing) - Quality of Service (QoS) - Management Security - Embedded Diagnostics

High Availability	- Online non-disruptive software upgrades - Stateful process restart/failover - Redundancy of all major components - Hot swappable components including switch fabric modules

Embedded Diagnostics	Provides intelligent diagnostics, protocol decoding and network analysis tools including Fibre Channel ping and trace route, SPAN, Zone and VSAN merge analysis, and integrated Call Home capability.

Port Channels	Allows users to aggregate up to 16 physical links into one logical bundle. The bundle can consist of any port in the chassis, ensuring that the bundle remains active in the event of a port, ASIC, or module failure. The bundle can sustain the failure of any physical link without causing a reset. Additionally, Fabric Shortest Path First (FSPF) multipath provides the intelligence to load balance across up to 16 FC equal cost paths and, in the event of a switch failure, to dynamically reroute traffic.

QuickSpecs

Product Highlights

Access Control	• Hardware-based intelligent frame processing • VSAN-based access control • Role based access control within VSANs • Hardware-enforced zoning

Traffic management	• Virtual Output Queue (VOQ) • Up to 4095 buffer-to-buffer credits • Port Channels (up to 16 ISLs) • Fabric Shortest Path (FSPF) based multipathing

Management modes	• Cisco MDS 9000 Family Command Line Interface (CLI) • Cisco Device Manager • Integration with third-party management tools. • Cisco Data Center Network Manager

Interoperability	Offers compatibility with a broad range of HP servers and operating systems, as well as disk and tape storage devices.

Product Family Models

- HP StoreFabric SN8500C 8-slot 16Gb FC Director
  - Intelligent, multi-protocol 8-slot Director with up to 384 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 384 ports of full 16Gbps line-rate performance across all ports.
- 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.
- SN8000C 9-Slot Supervisor 2A Director
  - Intelligent, multi-protocol 9-slot Director with up to 336 Auto-Sensing 8/4/2 Gb Fibre Channel ports
- 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
- Cisco MDS 9222i Multilayer Fabric Switch
  - Intelligent, multi-protocol modular Fabric Switch with eighteen fixed 4Gb Fibre Channel ports, four fixed 1Gb Ethernet ports, a four port FCIP software license and an open modular expansion slot for up to forty-eight 48 additional Fibre Channel ports or 10Gb Fibre Channel ports for Inter-Switch Links
- SN6000C 8Gb Fabric Switch
  - With up to 48 Auto-Sensing 8/4/2 Gb Fibre Channel ports
  - "Pay as you grow" scalability starting at 16 ports
- Cisco MDS 9124 Fabric Switch
  - With up to 24 Auto-Sensing 4/2/1 Gb Fibre Channel Ports
  - "Pay as you grow" scalability starting at 8 ports
- Cisco MDS 8Gb Fabric Switch for HP BladeSystem c-Class
  - With up to 24 Auto-Sensing 8/4/2 Gb Fibre Channel ports

Product Highlights

○ "Pay as you grow" scalability starting at 12 ports

Software Components, Standard

NX-OS

New MDS 9000 provides deterministic hardware performance and a comprehensive feature set that allows virtual machines to have the same SAN attributes as a physical server. The SN8500C Director with 2 Supervisor 1 modules supports NX-OS 6.2(1) or later

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 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 SN8500C Enterprise Package

Cisco 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 StoreFabric SN8500C Enterprise Package (for the SN8500C Director).

Service and Support and Warranty Information

Service and Support	**Services to accelerate time to results**

HP Storage Services bring you a rich portfolio of consulting and support services designed to add value to our core storage products and solutions. We have the know-how and experience to put storage technology to work for you. We work closely with you as your strategic partner, leveraging our full services portfolio to make sure that everything works to optimize your enterprise.

Choose from services aligned to our storage product offerings and lifecycle. From mission-critical onsite services to innovative web-based remote support, you choose the precise level of attention and support your business demands.

Discover, plan, and design Choose from a rich portfolio of services to make the most of HP StoreFabric Storage, so you can efficiently and affordably consolidate, manage, and extract value from unstructured data.

HP Services can help you discover needs and create a plan for simplifying the environment, reducing risk, and maximizing your storage investments

HP Backup Recovery Efficiency Analysis - Assessment of how efficiently backup components are being used as the amount of data to be backed up continues to grow exponentially via analysis intelligence and a snapshot of your current backup environment. http://h20195.www2.hp.com/v2/GetPDF.aspx/4AA3-8490ENW.pdf

HP Backup Recovery Impact Analysis - Focus placed on service requirements and design as the key to success for gaining a clear understanding of the role of increasingly diverse data protection strategies. http://h20195.www2.hp.com/V2/GetPDF.aspx/4AA4-1175ENW.pdf

HP Backup Recovery Modernization - Initial discovery, interviews, reference architecture design, proposal content development, vendor grading, and final recommendations carried out so as to require minimal resources and locations on your part. http://h20195.www2.hp.com/V2/GetPDF.aspx/4AA4-1199ENW.pdf

HP Storage Cloud Design Service - Build a scalable, low-cost enterprise storage environment with inherent cloud benefits to meet big data needs.

Deploy and integrate **We can help you configure, set up, and efficiently use your HP StoreFabric Storage, as well as help migrate data, improve capacity utilization, and establish information management standards used across backup, replication, and archiving needs.**

HP Enhanced Implementation Service for SANs - Select this service for complete design and implementation support for Fibre Channel, FCoE, FCIP, SAS, and iSCSI SAN connectivity components

HP Storage Data Migration Services - End-to-end data migration service providing seamless discovery, assessment, planning, and design, completely customizable to your organization's storage area network or network attached storage environment and using innovative software to help you migrate to HP storage quickly and efficiently. http://h20195.www2.hp.com/V2/GetPDF.aspx/4AA3-0774ENW.pdf

HP Storage and Data Consultant Residency Service - Strategic augmentation of your current environment with HP resources who become your trusted advisor to provide answers that are right for

Service and Support and Warranty Information

your storage and backup environment. http://h20195.www2.hp.com/V2/GetPDF.aspx/4AA3-9481ENW.pdf

HP Proactive Select - A flexible way to purchase services to fit your environment with an extensive menu of HP Proactive Select event and technical services, such as onsite firmware upgrades, health checks, assessments, and education. http://h20195.www2.hp.com/V2/GetPDF.aspx/4AA2-3842ENW.pdf

Operate and support	**Choose the right support to maximize uptime, free up your resources, and achieve improved value-as you get the most out of the existing IT assets while accelerating time-to-revenue.** **HP Proactive Care 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 **HP Proactive Care Personalized Support** - An option-if you have HP Proactive Care- to bring increased personalization of the Proactive Care support experience through the assignment of an Account Service Manager (ASM) who provides IT best practice advice to help address IT issues and projects. http://h20195.www2.hp.com/V2/GetPDF.aspx/4AA4-3446ENW.pdf **HP Support Plus 24** - Support for environments where proactive help from HP is not required, with 24x7 hardware and software support onsite that includes third-party support with a maximum four-hour onsite response. http://h20195.www2.hp.com/V2/GetPDF.aspx/5981-6638EN.pdf **HP Education Services** - Comprehensive training for new, as well as experienced, storage administrators designed to expand your skills and keep you up to speed with the latest storage and virtualization technology from HP Storage. http://education.hp.com/curr-storsan.htm
Optimized Care - Delivers the highest levels of performance and stability through deployment and proactive management practices	**Choose from three levels of operate and support care** **HP Proactive Care 24x7-Plus, 20 credits per year** Additional options - HP Proactive Care Personalized Support (once per Proactive Care support new environment), an additional day of HP Personalized Support, and 10 additional HP Proactive Select credits per year
Standard Care - maintains high level of uptime, along with expert help to cut the cost and complexity of implementation and support	**HP Proactive Care 24x7-Plus, 10 credits per year** **Additional options** - HP Proactive Care Personalized Support (once per Proactive Care support new environment), an additional day of HP Personalized Support, and 10 additional HP Proactive Select credits per year
Basic Care - Minimum recommended support	**Support Plus 24- Plus, 10 credits per year** **Additional options** - 10 HP Proactive Select credits per year

Service and Support and Warranty Information

**Remote
Support Automation**

HP Insight Remote Support - Available at no additional cost to all warranty, HP Care Pack Service and service agreement customers, uses proven technology to deliver secure, reliable 24x7 remote monitoring, diagnosis and problem resolution. http://h20195.www2.hp.com/V2/GetPDF.aspx/4AA2-4676ENW.pdf

http://h18004.www1.hp.com/products/servers/management/insight-remote-support/overview.html

For more information

www.hp.com/services/storage
To learn more on HP Storage Services, please contact your HP sales representative or HP Authorized Channel Partner

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 www.hp.com/go/lookuptool

Family Information

	HP StoreFabric SN8500C 8-slot 16Gb FC Director	HP SN8000C 13-Slot Supervisor 2A Fabric3 Director	SN8000C 9-Slot Director w/ Dual Supervisor 2A	SN8000C 6-Slot Director w/Dual Supervisor 2A	Cisco MDS 9222i	SN6000C 8Gb Fabric Switch	Cisco MDS 9124	Cisco MDS 8Gb Fabric Switch for HP BladeSystem c-Class
Introduction Date	August 2013	May 2012	May 2011	May 2011	November 2007	June 2010	March 2007	November 2010
Switch Type	Multilayer Director	Multilayer Director	Multilayer Director	Multilayer Director	Multilayer Fabric Switch	Multilayer Fabric Switch	Fabric Switch	Embedded Fabric Switch
Maximum ports	384 Fibre Channel	528 Fibre Channel, 44 IP ports	336 Fibre Channel, 28 IP ports	192 Fibre Channel, 16 IP ports	18 fixed auto-sensing 4/2/1 Gbps Fibre Channel ports, 4 1Gb Ethernet ports	Up to 48 Fibre Channel ports	Up to 24 Fibre Channel ports	16 Internal, 8 auto-sensing 8/4/2 Gb Fibre Channel ports
Number of slots per chassis	Eight	Thirteen	Nine	Six	Two, One fixed	N/A, Fixed FRU	N/A, Fixed FRU	N/A, Fixed FRU

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

Configuration Information

Step 1 - Base Configurations

Select one:

Model	Part Number
HP StoreFabric SN8500C 8-slot 16Gb FC Director	C8S71A

NOTE: Base unit includes a 14U, (8) slot chassis with 2 hot swappable redundant Supervisor 1 Modules and three hot swappable redundant Fabric 1 Modules and 6 hot swappable redundant 3000W Power Supplies, fans, six wall power cords and six PDU power cords, firmware accessory kit and documentation. Supports up to eight optional expansion port modules

Step 2 - Options

Select each type of required options with quantities specified:
NOTE: For a complete list of supported switching modules in the SN8500C Director, please 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

Model Description	Part Number
HP StoreFabric SN8500C 48-port 16Gb FC Module	C8S70A
NOTE: SFPs required; supports 8 and 16Gb SFPs	
HP StoreFabric C-series 16Gb FC SW SFP+ Transceiver	C8S72A
HP StoreFabric C-series 16Gb FC LW SFP+ Transceiver	C8S73A
MDS 9000 8Gb FC SFP+ Short Range Transceiver	AJ906A
MDS 9000 8Gb FC SFP+ Long Range Transceiver	AJ907A
HP C-series 10Gb Fibre Channel Short Wave SFP+ Transceiver	QW928A
HP C-series 10Gb Fibre Channel Long Wave SFP+ Transceiver	QW929A
HP StoreFabric SN8500C Fabric-1 Module	C8S74A

Optional Software Licenses

HP StoreFabric SN8500C Enterprise Package License	TC459AA
NOTE: Set of advanced traffic-engineering and advanced security features	
Cisco MDS 9700 Enterprise Package RTU	

Installation Services

Cisco MDS 9500 installation Service	HA113A1#5GC
NOTE: 1 per switch	

** Appropriate country power cords and PDU cords will be included for each AC power supply for the SN8500C Director based on ship to destination information.

Configuration Information

Step 3 - Additional Options

Recommended Cables

PremierFlex OM4+ type cables

HP Premier Flex LC/LC Multi-mode OM4 2 fiber 1m Cable	QK732A
HP Premier Flex LC/LC Multi-mode OM4 2 fiber 2m Cable	QK733A
HP Premier Flex LC/LC Multi-mode OM4 2 fiber 5m Cable	QK734A
HP Premier Flex LC/LC Multi-mode OM4 2 fiber 15m Cable	QK735A
HP Premier Flex LC/LC Multi-mode OM4 2 fiber 30m Cable	QK736A
HP Premier Flex LC/LC Multi-mode OM4 2 fiber 50m Cable	QK737A

Technical Specifications

Fibre Channel standards and revisions

- FC-PH, Revision 4.3 (ANSI/INCITS 230-1994)
- FC-PH, Amendment 1 (ANSI/INCITS 230-1994/AM1 1996)
- FC-PH, Amendment 2 (ANSI/INCITS 230-1994/AM2-1999)
- " FC-PH-2, Revision 7.4 (ANSI/INCITS 297-1997)
- FCP, Revision 12
- (ANSI/INCITS 269-1996)
- FCP-2, Revision 8 (ANSI/INCITS 350-2003)
- FC-SB-2, Revision 2.1 (ANSI/INCITS 349-2001)
- FC-SB-3, Revision 1.6 (ANSI/INCITS 374-2003)
- FC-SB-3, Amendment 1 (ANSI INCITS 374-2003/AM1-2007)
- FC-SB-4, Revision 3.0 (ANSI INCITS 466-2011)
- FC-BB-3, Revision 6.8 (ANSI INCITS 414-2006)
- FC-BB-4, Revision 2.7 (ANSI INCITS419-2008)
- FC-BB-5, Revision 2.0 (ANSI INCITS 462-2010)FC-PH-3, Revision 9.4 (ANSI/INCITS 303-1998)
- FC-PI, Revision 13 (ANSI/INCITS 352-2002)
- FC-FS, Revision 1.9 (ANSI/INCITS 373-2003)
- FC-AL-2, Amendment 1 (ANSI/INCITS 332-1999/AM1-2003)
- FC-SW-2, Revision 5.3 (ANSI/INCITS 355-2001)
- FC-SW-3, Rev. 6.6 (ANSI/INCITS 384-2004)
- FC-GS-3, Revision 7.01 (ANSI/INCITS 348-2001)
- FC-GS-4, Rev. 7.91 (ANSI/INCITS 387-2004)
- FC-GS-5, Revision 8.51 (ANSI INCITS 427-2007)
- FC-GS-6, Revision 9.4 (ANSI INCITS 463-2010)
- FCP-3, Revision 4 (ANSI INCITS416-2006)
- FCP-4, Revision 2b (ANSI INCITS 481-2011)

- FC-BB, Revision 4.7 (ANSI/INCITS 342-2001)
- FC-BB-2, Rev. 6.0 (ANSI/INCITS 372-2003)
- FCP, Revision 12FC-VI, Revision 1.84 (ANSI/INCITS 357-2002)
- FC-FLA, Revision 2.7 (INCITS TR-20-1998)
- FC-PLDA, Revision 2.1 (INCITS TR-19-1998)
- FC-Tape, Revision 1.17 (INCITS TR-24-1999)
- FC-MI, Revision 1.92 (INCITS TR-30-2002)
- FC-SP, Revision 1.8
- FC-SP-2, Revision 2.71 (ANSI INCITS 496-2012)
- FAIS, Revision 1.03 (ANSI INCITS 432-2007)
- FAIS-2, Revision 2.23 (ANSI INCITS 449-2008)
- FC-IFR, Revision 1.06 (ANSI INCITS 475-2011)FC-DA, Revision 3.1(INCITS TR-36-2004)
- FC-DA-2, Revision 1.06 (INCITS TR-49-2012)
- FC-MSQS, Revision 3.2 (INCITS TR-46-2011
- IP over Fibre Channel (RFC 2625)
- Extensive IETF-standards based TCP/IP, SNMPv3, and Remote Monitoring (RMON) MIBs
- FC-PI-2, Revision 10 (ANSI INCITS 404-2006)
- FC-PI-3, Revision 4 (ANSI INCITS 460-2011)
- FC-PI-4, Revision 8 (ANSI INCITS 450-2008)
- FC-PI-5, Revision 6 (ANSI INCITS 479-2011)
- FC-FS-2, Revision 1.01 (ANSI INCITS 424-2007)
- FC-FS-2, Amendment 1 (ANSI INCITS 424-2007/AM1-2007)
- FC-FS-3, Revision 1.11 (ANSI INCITS 470-2011)
- FC-LS, Revision 1.62 (ANSI INCITS433-2007)
- FC-LS-2, Revision 2.21 (ANSI INCITS 477-2011)
- FC-MI-2, Revision 2.6 (INCITS TR-39-2005)
- FC-MI-3, Revision 1.03 (INCITS TR-48-2012)

HP StoreFabric SN8500C 8-slot 16Gb FC Director Weights, Dimensions, Environmental, Power and Packaging

Diagnostics	Cisco GOLD (Generic Online Diagnostics) is a suite of diagnostic facilities to verify that hardware and internal data paths are operating as designed. Boot-time diagnostics, continuous monitoring, standby fabric loopback tests, and on-demand and scheduled tests are part of the Cisco GOLD feature set. This industry-leading diagnostics subsystem enables the rapid fault isolation and continuous system monitoring critical in today's continuously operating environments.	

Compatibility	**Fibre Channel protocols**	See table above
	Classes of service	Class 2, Class 3, Class F
	Port types	E, F, FL
	Internet standards	RFC 791 IPv4, RFC 793, 1323 TCP, RFC 894 IP/Ethernet, RFC 1041 IP/802, RFC 792, 950, 1256 ICMP, RFC 1323 TCP performance enhancements, RFC 2338 VRRP
	O/S Support	MDS NX-OS Release 6.2(1)- Min. Revision
Performance	**Transfer Rate**	• 4/8/16 Gb/FC port • 10 Gb/FC port
	Devices/Ports	• 384 FC ports
	Interface	• 4/8/10/16 Gb FC ports • 10/100/1000 Mb Ethernet port (management) • RS-232 RJ-45 console port
Connectors/Cables	**Connectors**	• RJ-45 Interface Cable Connector • LC-type-fiber optic SFP
	Cables	• RJ-45 to RJ-45 rollover cable • RJ-45 to DB-25 female DTE adapter (labeled "Terminal ") • RJ-45 to DB-25 male DCE adapter (labeled "Modem") • LC-type cable
	Cable Lengths	2 meters, 5 meters, 15 meters, 30 meters, 50 meters

		Out-of-box	**Shipping**
Dimensions	**Description**		
	Base unit w/o ports	24.35 x 17.3 x 34.0 in. (61.9 x 43.9 x 86.4 cm)	32 x 32 x 23 in (81.28 x 81.28 x 58.42 cm)
	3000W AC	22.04 x 3.95 x 1.6 in. (55.98 x 10.03 x 4.06 cm)	n/a

Environment	**Non-operating temp**	40° to 158° F (-40° to 70° C), ambient non-operating and storage
	Non-operating Humidity	5 to 95%, ambient (non-condensing) non-operating and storage
	Operating temp	32° to 104° F (-40° to 70° C), ambient operating
	Operating Humidity	10 to 90%, ambient (non-condensing) operating
Electrical	**Line Voltage**	3000W AC: 100 to 240 VAC ±10%
	Line Frequency	3000W AC: 50 to 60 Hz (nominal) (±3% for full range)
	Typical Input Current	3000W AC: • 16A max at 200 to 240 VAC at 3000W output, • 16A max at 100 to 120 VAC at 1451W output
	Power	3000W AC power supply plug types,250VAC:

Technical Specifications

- Argentina IR 2073-C19 (16A),
- North America NEMA 6-20 or L6-20 (20A),
- Australia, New Zealand AU20S3 (16A),
- Europe CEE 7/7 (16A),
- China GB16C, international IEC 309,
- Israel SI16S3,
- South Africa EL 208, SABS 164-1,
- Switzerland SEV 5934-2 Type 23,
- Argentina IR2073-C19,
- Brazil EL224-C19

LED Indicators (On front panel)	Switch System	• Power Supply Status • Fan Status • Supervisor Module Status • Fabric Module Status • I/O Modules Status
	Supervisor	• Supervisor ID • Supervisor Status • System Status • Active/Standby • Power Management • Ethernet Activity (management) • USB Flash Activity • Slot 0 Activity
LED Indicators (On back)	Power Supply	• Input Power • Output Power • PSU Fault Indicator • PSU ID
	Fan	• Fan Tray ID • Fan status • Left Fabric Module Status • Right Fabric Module Status

NOTES:

1. Dimension convention is as follows:

- H (Height) is the vertical dimension when looking at the front of the component, as it would be seen in the chassis. Exception is the compact flash where H is when looking at the identification label on the part.
- W (Width) is the horizontal (left to right) dimension when looking at the front of the component, as it would be seen in the chassis. Exception is the compact flash where W is when looking at the identification label on the part.
- D (Depth) is the front to back dimension when looking at the front of the component, as it would be seen in the chassis. Exception is the compact flash where D is when looking at the identification label on the part.

2. Packaging dimensions are reference as if you were looking at the front of the chassis in the packaging, if you could see through the packaging.

Technical Specifications