

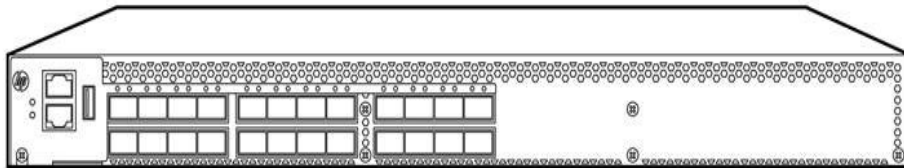
Overview

To remain competitive, IT organizations must keep pace with ever-increasing workloads without a similar increase in their budgets or resources. While virtualization has provided some relief by enabling the benefits of faster deployment and consolidation, it also tends to put additional stress on data center networks. In addition, the move toward cloud computing, which promises greater efficiency and a more service-oriented business model, means that these networks will face even greater demands.

The HP SN3000B Fibre Channel Switch meets the demands of hyper-scale, private cloud storage environments by delivering market-leading 16 Gb Fibre Channel technology and capabilities that support highly virtualized environments. Designed to enable maximum flexibility and investment protection, the SN3000B Switch is configurable in 12 or 24 ports and supports 4, 8, or 16 Gbps speeds in an efficiently designed 1U package. It also provides a simplified deployment process and a point-and-click user interface-making it both powerful and easy to use. The SN3000B Switch offers low-cost access to industry-leading Storage Area Network (SAN) technology while providing "pay-as-you-grow" scalability to meet the needs of an evolving storage environment.

The SN3000B is available in two models:

- HP SN3000B 16Gb 24-port/24-port Active Fibre Channel Switch
- HP SN3000B 16Gb 24-port/12-port Active Fibre Channel Switch



Features and Benefits

Key Features and Benefits

- Delivers 16 Gbps performance with up to 24 ports in an energy-efficient, 1U form factor, providing maximum flexibility for diverse deployment and cooling strategies
- Features Ports on Demand (PoD) capabilities for fast, easy, and cost-effective scaling from 12 to 24 ports in a 12-port increment
- Provides a flexible, simple, and easy-to-use SAN solution with industry-leading technology
- Supports highly virtualized, private cloud storage with multi-tenancy and non-stop operations
- Offers best-in-class port density and scalability for entry SAN switches, along with hot-pluggable components and non-disruptive software upgrades
- Yields exceptional price/performance value, exceeding comparable Ethernet storage-based alternatives

Models

**HP SN3000B 16Gb
FC Switch Models**

HP SN3000B 16Gb 24-port/24-port Active Fibre Channel Switch
HP SN3000B 16Gb 24-port/12-port Active Fibre Channel Switch

QW938A
QW937A

Product Highlights

SN3000B 16Gb FC Switch

- Simplifies enterprise SAN deployment by combining higher edge switch port density with exceptional scalability, performance and reliability
 - Delivers 12 or 24-ports in a 1U enclosure
 - Provides 4 Gb/s, 8 Gb/s, and 16 Gb/s* performance
 - Employs optional Inter-Switch Link (ISL) Trunking to provide a high-speed data path between switches which enables a high speed data path between 16 Gb/s switches up to 128 Gb/s
- * 16 Gb/s ISL performance can be obtained between two 16 Gb/s switches.

Configuration Support

<http://h18000.www1.hp.com/products/storageworks/san/documentation.html>

High-availability features

- Optional integrated redundant, hot swappable power supply with integrated cooling fans
- Enhanced Fault Detection Logic
- Parity protection on all data paths and system memory

Advanced Fabric Services

- Hardware Enforced Zoning
- Frame Filtering
- Built-in Web browser management tools
- Enhanced Group Management (EGM)
- HP B-series SAN Network Advisor software (optional)

Cabinet Support

- HP 22U, 36U and 42U 9000 and 10000 G1 Series, HP 25U, 33U and 41U System/e, HP 22U, 36U, and 42U 10000 G2 Series, and Intelligent Series racks.
- NOTE:** To order factory integration, add OD1 after the part number on your sales order.

Software Components, Standard, Base Models

Frame Filtering

An ASIC based capability that enables new applications and features. The switch has the ability to "view" the first 64 bytes of the Fibre Channel frame. At this time, Frame Filtering enables advanced capabilities such as Advanced Zoning and Advanced Performance Monitoring.

Advanced Zoning

WWN Zoning and Access Control are enforced by hardware that provides the same simple administration previously enforced only with software. Administrators can organize a physical fabric into logical groups and prevent unauthorized access by devices outside the Zone.

Web Tools

Web Tools is an intuitive and easy-to-use graphical interface that enables organizations to monitor and manage SAN fabrics. Tasks can be performed through a Java-capable Web browser from a standard laptop, desktop PC or workstation from any location within the enterprise.

Product Highlights

EGM

Enhanced Group Management (EGM) is a FOS license that is included with all B-Series switches and enables multi-switch operations. It helps automate operations across multiple switches to save time and streamline repetitive operations, which are typically prone to error. EGM drives consistency across fabrics, while minimizing the risk associated with potential downtime due to configuration mismatches. EGM provides streamlined troubleshooting for more effective fabric monitoring and diagnosis.

HP SAN Network Advisor Professional, Professional Plus, and Enterprise enable EGM functionality. Customers have EGM functionality enabled within the hardware product and need only to make the decision around which management application is right for them.

Software Components, Optional

SN300B 16Gb Switch Power Pack+ Software Upgrade

The Power Pack+ Software Upgrade LTU includes the following:

- Adaptive Networking
- Fabric Watch
- Advanced Performance Monitor
- Extended Fabric
- ISL Trunking
- Server Application Optimization

NOTE: Power Pack+ Software titles listed above are only available as a package with the Power Pack+ Software Upgrade.

Adaptive Networking

Adaptive Networking (AN) is an optional family of technologies which allow flexible control of traffic movement within the fabric which deliver application aware management of fabric resources. Applications may be used with multiple protocols and multiple classes of service. It includes the following features:

Ingress Rate Limiting:

Allows the ingress bandwidth of a port to be throttled to a rate lower than negotiated with the SAN node. This could be very useful for enterprises offering stepped levels of service and enforcing SLAs.

Quality of Service (QoS):

Enables zones with high, medium, and low priorities within a fabric on a zone by zone basis. This can be very useful for prioritizing array replication over MANs and WANs over less critical traffic.

Traffic Isolation Zones:

Defines paths through a fabric for some or all nodes. Failover allows a non-preferred path to be used if the preferred fails. TIZs use failover by default but it can be disabled if traffic should stop if a preferred path fails. TIZ can be used to manually map out traffic flows within a fabric based on application, priority, and topology.

Product Highlights

Fabric Watch

Fabric Watch is an optional license which enables each switch to monitor the SAN for potential faults and automatically alert network managers to problems before they become failures. Fabric Watch tracks a variety of SAN fabric elements, events, and counters. Monitoring fabric-wide events, ports, SFPs, and environmental parameters permits early fault detection and isolation as well as performance measurement. Each switch in the SAN needs its own Fabric Watch license.

Advanced Performance Monitor

This optional enabling technology helps administrators monitor and watch specific fabric metrics -- from a SID (Source ID) to a DID (Destination ID) -- so they can fine-tune and scale the fabric more efficiently. Plus, Advanced Performance Monitoring includes the ability for early warning detection of hot spots within the fabric, a powerful tool for maintaining overall balanced performance.

Top Talkers is a component of Advanced Performance Monitoring and tracks the top traffic flows for hosts and targets for a switch port or a switch. Top Talkers can help identify the ports that need certain Quality of Service (QoS) attributes or it can help determine portions of the physical topology that need reconfiguration.

Extended Fabric

Optional license which extends all of the scalability, reliability, and performance benefits of Fibre Channel Storage Area Networks (SANs) beyond the native 10 km distance specified by the Fibre Channel standard.

ISL Trunking

For high performance enhanced Trunking, this optional license logically groups up to eight E-ports to provide a high bandwidth trunk between two switches. Each 16Gb switch needs its own license. The switch operating system views the trunk as a single, high bandwidth resource (up to 128Gb) when routing connections between 16Gb switches. Connections are load-balanced across the individual links, which comprise the logical trunk group.

Server Application Optimization

Server Application Optimization (SAO) license improves overall application performance for physical servers and virtual machines. SAO, when deployed with B-Series Fibre Channel HBAs, extends B-Series Adaptive Networking from the B-series SAN fabric to the server infrastructure. This delivers application-level, fine-grain Quality of Service (QoS) management to the HBAs and related server applications.

Solution Requirements:

- SAO license must be installed on the edge (server connected) switch
 - Adaptive Networking (AN) license must be installed on the edge (server connected) switch
 - SAO requires B-series HBA installed in the server
-

Product Highlights

SAN Network Advisor Professional

HP SAN Network Advisor Professional is a server based management application available at no-charge that comes with B-series SAN Switches and includes the following features:

- Allows management of a single Fabric OS (FOS) fabric (up to a 1,000 B-Series switch ports)
- Performs group switch management beyond the scope of Web Tools
- Does not offer management for the DC SAN Backbone Director, the SN8000B Director, or FICON

It is targeted for SMB customers that use FOS based SAN fabrics and require a management solution for smaller SANs based on a single fabric.

SMB customers that initially start off with SAN Network Advisor Professional and have a small SAN environment may over time feel the need for an enterprise-class product (SAN Network Advisor Enterprise) as their environments start to grow in size and complexity, and as they start to uptake more enterprise-class functionality (such as Fibre Channel Routing, FCIP, etc.). A non-disruptive upgrade path is available from SAN Network Advisor Professional to SAN Network Advisor Enterprise.

SAN Network Advisor Enterprise and Professional+

HP SAN Network Advisor Enterprise and Professional+ are the enterprise-class products that support FOS products. SAN Network Advisor Enterprise provides complete B-series Directors Management including enterprise-class features/environments such as FICON, Fibre Channel Routing, FCIP, adaptive networking, etc while SAN Network Advisor Professional+ provides the same feature set except for support for the DC SAN Backbone Director, SN8000B 8-Slot Director, and FICON.

SAN Network Advisor Enterprise delivers unprecedented scalability, up to 24 fabrics and 9,000 switch ports, while SAN Network Advisor Professional+ scales to 4 SAN Fabrics and 2560 switch ports. There is an upgrade available from SAN Network Advisor Professional Plus to SAN Network Advisor Enterprise.

Service and Support

Warranty

(1-1-1) Hardware Warranty; 1-year parts; 1-year on-site (standard business hours, next business day response) and 1-year labor.

NOTE: The hardware warranty covers firmware and embedded non-saleable software. For extended hardware installation and maintenance information, click the link below:
<http://www.hp.com/hps/carepack/services/>.

NOTE: Certain restrictions and exclusions apply. Consult the Customer Support Center for details. Hardware or Software product installation is not included in the warranty, but is available and highly recommended.

Service and Support

Technology Services for increased uptime, productivity and ROI

TRUST HP storage technology experts for every level of service and support. Our integrated portfolio of Services for storage help customers reduce costs, optimize data, streamline storage management, and improve backup and recovery. Capitalizing on HP Storage Systems' capabilities requires a service partner who understands your increasingly complex environment. Team with the people who know HP infrastructure hardware and software best—the experienced professionals at HP Services.

Protect your business beyond warranty

Warranty protects against manufacturer defects, however warranty uplifts, such as HP Care Pack Services protect the business—by reducing downtime risks and providing operational consistency for mission-critical and standard business computing.

What HP Storage Technology Services can do for you

HP Storage Technology Services can help you design, deploy, test, integrate, support, and manage IT and infrastructure solutions. HP storage lifecycle support services offers a full spectrum of customer care—from technology support to complex migrations to complete managed services.

Choose the right level of support, deployment and integration services

HP support recommendations are designed to help you enhance technology operations and lower risk—and make it easier for you to seek the right balance between affordability and service-level commitments. Depending on your individual support needs, choose from three levels of care that cover the entire lifecycle to better address your needs—Optimized Care, Standard Care, and Basic Care. If none of our support recommendations meet your needs, we can tailor a service solution for your unique support requirements. Only HP brings together deep expertise, proactive and business critical support and a strong partner network—plus, a full set of infrastructure services designed to power a Converged Infrastructure.

Optimized Care - delivers best performance and stability through deployment and proactive management practices

HP Proactive Care 24x7- for a higher return on your storage investment, Proactive Care delivers hardware and software support services designed specifically for your technology; rapid access to Advanced Solution Center Specialists plus, Firmware/Software management and best practice advice. Customers can optimize the return on their IT investment and realize the advantage of running their business critical applications on virtualized/x86 infrastructure. **Plus, 40 credits per year**, select from an extensive menu of consultancy and technical services, such as onsite firmware upgrades, health checks, assessments, and education.

Standard Care - maintains high level of uptime, along

HP Proactive Care 24x7- for a higher return on your storage investment, Proactive Care delivers hardware and software support services designed specifically for your technology; rapid access to Advanced

Service and Support

with expert help to cut the cost and complexity of implementation and support

Solution Center Specialists plus, Firmware/Software management and best practice advice. Customers can optimize the return on their IT investment and realize the advantage of running their business critical applications on virtualized/x86 infrastructure. **Plus, 30 credits per year**, select from an extensive menu of consultancy and technical services, such as onsite firmware upgrades, health checks, assessments, and education.

Basic Care - Minimum recommended support

3-Year Support Plus 24-For a higher return on your server and storage investment, HP Support Plus 24 provides integrated hardware and software support services designed specifically for your technology. Available 24x7, this 3-year combined reactive support option delivers onsite hardware support and over-the-phone software support around-the-clock. Leverage the full strength of HP Technology Services - customers can trust the services professionals at HP to work collaboratively with them, putting our strategic and technical know-how to work across their entire infrastructure. Plus, 10 credits per year, select from an extensive menu of consultancy and technical services, such as onsite firmware upgrades, health checks, assessments, and education.

HP Proactive Select: Accelerate the ROI of your technology investment

HP Proactive Select is a flexible way to purchase services to fit your particular environment or situation. Working with an HP Account Support Manager, you select a 'package' of services, from a wide range of proactive services offered by HP spanning many technologies and processes-- such as onsite firmware upgrades, health checks, assessments, and education. You tailor the service delivery to improve time-to-production, optimize performance, or build in continuous improvements

The link to the datasheet is as follows:

<http://h20195.www2.hp.com/v2/GetPDF.aspx/4AA2-3842ENW.pdf>

Proactive Care 24x7 - with 40 HP Proactive Select credits:

Specifically designed for complex environments, this offers an end-to-end environment support solution that covers servers, operating systems, hypervisors, storage and SANs. Service provides rapid response to incidents, addressed 24x7x365, through HP's advanced solution center support and proactive reports for problem prevention

Implement right from the start **Whichever level of care you select, it includes:**

HP Enhanced Implementation Service for SANs-HP delivers complete design and implementation services for Fibre Channel, FCoE, FCIP, SAS, and iSCSI SAN connectivity components.

<http://h20195.www2.hp.com/V2/GetPDF.aspx/5981-8527EN.pdf>

Remote Support Tools

HP Insight Remote Support - Count on proven technology to deliver secure, reliable 24x7 remote monitoring, diagnosis, and problem resolution, all available at no extra charge if you have an existing warranty, service agreement, or HP Care Pack Service with HP.

<http://h20195.www2.hp.com/V2/GetPDF.aspx/4AA2-4676ENW.pdf>

Additional service to meet your needs

HP Assessment Service for SANs - We offer customized technical and operational guidance to customers employing HP storage subsystems and the interconnecting storage area network (SAN), with recommendations to help improve availability levels and ongoing environment management.

<http://h20195.www2.hp.com/V2/GetPDF.aspx/4AA1-2941ENW.pdf>

Service and Support

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

Features	8/8 SAN Switch Base and 8/8 SAN Switch	8/24 SAN Switch Base	8/40 SAN Switch and 8/40 SAN Switch Power Pack+	8/80 SAN Switch and 8/80 SAN Switch Power Pack+	SN3000B 16Gb FC Switch	SN6000B 16Gb FC Switch and SN6000B 16Gb FC Power Pack+
Targeted Environment	Workgroups, Departments	Workgroups, Departments	Workgroups, Departments	Workgroups, Departments	Workgroups, Departments	Workgroups, Departments
Fibre Channel Port Bandwidth	8Gbit/sec	8Gbit/sec	8Gbit/sec	8Gbit/sec	16Gbit/sec	16Gbit/sec
Aggregate device bandwidth	128 - 384 Gbit/sec full duplex	256 - 384 Gbit/sec full duplex	384 - 640 Gbit/sec full duplex	768 - 1280 Gbit/sec full duplex	384 - 768 Gbit/sec full duplex	768 - 1536 Gbit/sec full duplex
OS Support	NOTE: Please Refer to SAN Design Guide http://www.hp.com/go/sandesign or http://www.hp.com/go/sandesignguide					
Storage system support	3PAR StoreServ, StoreVirtual 4000, P9000/XP, P6000/EVA, P2000/MSA					
FC Ports	8 Enabled 24 Max	16 Enabled 24 Max	24 Enabled 40 Max	48 Enabled 80 Max	12 or 24 Enabled 24 Max	24 or 48 Enabled 48 Max
SFP	B-series	B-series	B-series	B-series	B-series	B-series
Advanced Trunking	Optional Upgrade	Included with Power Pack+ or Optional Upgrade	Included with Power Pack+ or Optional Upgrade	Included with Power Pack+ or Optional Upgrade	Included with Power Pack+ Upgrade	Included with Power Pack+ or Optional Upgrade
Adaptive Networking	Optional Upgrade	Included with Power Pack+ or Optional Upgrade	Included with Power Pack+ or Optional Upgrade	Included with Power Pack+ or Optional Upgrade	Included with Power Pack+ Upgrade	Included with Power Pack+ or Optional Upgrade
Form factor	1U	1U	1U	2U	1U	1U
Zoning Software	Yes (Included)	Yes (Included)	Yes (Included)	Yes (Included)	Yes (Included)	Yes (Included)
Hot plug, redundant power supplies	No	No	Yes	Yes	Optional	Yes
Hot plug fans	No	No	Yes	Yes	Yes (integrated with power supply)	Yes (integrated with power supply)

Family Information

Features	2408 FCoE CN Switch and 2408 FCoE CN Switch Power Pack+	1606 Extension SAN Switch	Encryption SAN Switch
Targeted Environment	Workgroups, Departments	Data Centers	Data Centers
Fibre Channel Port Bandwidth	8Gbit/sec	8Gbit/sec	8Gbit/sec
Ethernet	10Gbit/sec Converged Enhanced Ethernet	1Gbit/sec Ethernet	N/A
Aggregate device bandwidth			512 Gbit/sec full duplex
OS Support	NOTE: Please Refer to SAN Design Guide http://www.hp.com/go/sandesign or http://www.hp.com/go/sandesignguide		
Storage system support	3PAR StoreServ, StoreVirtual 4000, P9000/XP, P6000/EVA, P2000/MSA		
FC Ports	8 Enabled 8 Max	4 or 16 Enabled 16 Max	32 Enabled 32 Max
Ethernet Ports	24 Enabled 24 Max	2 or 6 Enabled 6 Max	N/A
SFP	B-series	B-series	B-series
Advanced Trunking	Included with Power Pack+ or Optional Upgrade	Included with Power Pack+ or Optional Upgrade	Optional Upgrade
Adaptive Networking	No	Included with Power Pack+ or Optional Upgrade	Optional Upgrade
Form factor	1U	1U	2U
Zoning Software	Yes (Included)	Yes (Included)	Yes (Included)
Hot plug, redundant power supplies	Yes	Yes	Yes
Hot plug fans	Yes	Yes	Yes

Family Information

Features	SN8000B 8-Slot SAN Director Power Pack+	SN8000B 4-Slot SAN Director and 4-Slot SAN Director Power Pack+	DC SAN Backbone Director Power Pack+	DC04 SAN Director and DC04 SAN Director Power Pack+
Targeted Environment	Cloud Optimized Data Centers	Cloud Optimized Data Centers	Traditional Data Centers	Traditional Data Centers
Port Bandwidth	Up to 16Gbit/sec	Up to 16Gbit/sec	8Gbit/sec	8Gbit/sec
Aggregate device bandwidth	16.4 Tbit/sec full duplex	8.2 Tbit/sec full duplex	4.1 Tbit/sec full duplex	2 Tbit/sec full duplex
OS Support	NOTE: Please Refer to SAN Design Guide http://www.hp.com/go/sandesign or http://www.hp.com/go/sandesignguide			
Storage system support	3PAR StoreServe, StoreVirtual 4000, P9000/XP, P6000/EVA, P2000/MSA			
Ports	Up to 512 SFP	Up to 256 SFP	Up to 512	Up to 256
SFP	B-series	B-series	B-series	B-series
Advanced Trunking	Included with Power Pack	Included with Power Pack or Optional Upgrade	Included with Power Pack+	Included with Power Pack+ or Optional
Adaptive Networking	Included with Power Pack	Included with Power Pack or Optional Upgrade	Included with Power Pack+	Included with Power Pack+ or Optional
Form factor	14U	9U	14U	9U
Zoning Software	Yes (included)	Yes (included)	Yes (Included)	Yes (Included)
Hot plug, redundant power supplies	Yes	Yes	Yes	Yes
Hot plug fans	Yes	Yes	Yes	Yes

Features	Embedded SAN Switch for EVA4400	Brocade 8Gb SAN Switch for HP c-Class BladeSystem	B-Series Multi-protocol Router Blade	B-Series Multi-protocol Extension Blade
Targeted Environment	Workgroups, Departments	Workgroups, Departments	Data Centers	Data Centers
Port Bandwidth	8Gbit/sec	8Gbit/sec	4 Gbit/sec FC Ethernet: 1 Gbit/sec	8 Gbit/sec FC Ethernet: 1 or 10 Gbit/sec
Aggregate device bandwidth	320 Gbit/sec full duplex	384 Gbit/sec full duplex	N/A	N/A
OS Support	NOTE: Please Refer to SAN Design Guide http://www.hp.com/go/sandesign or http://www.hp.com/go/sandesignguide			
Storage system Support	3PAR StoreServ, StoreVirtual 4000, P9000/XP, P6000/EVA, P2000/MSA			
Ports	20 external per EVA Controller Pair	4 or 8 external / 8 or 16 internal	18 ports: 16 FC and 2 Gigabit Ethernet	16 8Gb FC and 10 1GbE or 2 10GbE
SFP	B-series	B-series	HP	B-series
Advanced Trunking	Included with Power Pack+ or Optional Upgrade	Included with Power Pack+ or Optional Upgrade	Optional Upgrade to chassis	Optional Upgrade to chassis

Family Information

Adaptive Networking	Included with Power Pack+ or Optional Upgrade	Included with Power Pack+ or Optional Upgrade	Optional Upgrade to chassis	Optional Upgrade to chassis
Form factor	Embedded	Embedded	Blade in 4/256, DC SAN Back, or DC04 SAN Dir	Blade in SN8000B and DC SAN Directors
Zoning Software	Embedded	Yes (Included)	Yes (Included)	Yes (Included)
Hot plug, redundant power supplies	Yes, in EVA 4400 Enclosure	Yes, in BladeSystem Enclosure	Yes, in director chassis	Yes, in director chassis
Hot plug fans	Yes, in EVA 4400 Enclosure	Yes, in BladeSystem Enclosure	Yes, in director chassis	Yes, in director chassis

Configuration Information

Step 1 - Base Configuration

Select one:

Model	Model Description	Part Number
SN3000B 16Gb 24/24 FC Switch	16Gb 24/24 FC Switch with 24 active ports; rackmount kit; accessory kit (enterprise safety and regulatory information, installation guide, rack-mounting instructions), power cord, serial cable, base software of Advanced Fabric OS, Advanced Web Tools, Brocade EZ Switch, Advanced Zoning and SAN Network Advisor Professional. NOTE: Requires optical transceivers listed below.	QW938A
SN3000B 16Gb 24/12 FC Switch	16Gb 24/12 FC Switch with 12 active ports; rackmount kit; accessory kit (enterprise safety and regulatory information, installation guide, rack-mounting instructions), power cord, serial cable, base software of Advanced Fabric OS, Advanced Web Tools, Brocade EZ Switch, Advanced Zoning, and SAN Network Advisor Professional. NOTE: Requires optical transceivers listed below.	QW937A
SN3000B 16Gb 24-12 12-port FC Upgrade LTU	12 port upgrade license for SN3000B 16Gb 24/12 FC Switch (QW937A)	TC391A
SN3000B 16Gb FC Switch Optional Power Supply	Optional, hot-swappable power supply for SN3000B 16Gb 24/24 FC Switch (QW938A) and SN3000B 16Gb 24/12 FC Switch (QW937A)	QW939A

Step 2 - Options

Select each type of required options with quantities specified:

	Model Description	Part Number																				
Fibre Channel Transceivers	HP 16Gb Short Wave B-series SFP+ 1 Pack	QK724A																				
	HP 8Gb Short Wave B-series FC SFP+ 1 Pack *NOTE: AJ716A is not supported with the SN3000B 16Gb FC Switch	AJ716B*																				
	<table border="1"> <thead> <tr> <th>Distance - Maximum</th> <th>HP Standard OM2 Cable</th> <th>HP Standard OM3 Cable</th> <th>HP PremierFlex OM3+ Cable</th> <th>HP PremierFlex OM4 Cable</th> </tr> </thead> <tbody> <tr> <td>16Gb performance:</td> <td>35 meters</td> <td>100 meters</td> <td>100 meters</td> <td>125 meters</td> </tr> <tr> <td>8Gb performance:</td> <td>50 meters</td> <td>150 meters</td> <td>150 meters</td> <td>190 meters</td> </tr> <tr> <td>4Gb performance:</td> <td>150 meters</td> <td>380 meters</td> <td>380 meters</td> <td>400 meters</td> </tr> </tbody> </table>	Distance - Maximum	HP Standard OM2 Cable	HP Standard OM3 Cable	HP PremierFlex OM3+ Cable	HP PremierFlex OM4 Cable	16Gb performance:	35 meters	100 meters	100 meters	125 meters	8Gb performance:	50 meters	150 meters	150 meters	190 meters	4Gb performance:	150 meters	380 meters	380 meters	400 meters	
Distance - Maximum	HP Standard OM2 Cable	HP Standard OM3 Cable	HP PremierFlex OM3+ Cable	HP PremierFlex OM4 Cable																		
16Gb performance:	35 meters	100 meters	100 meters	125 meters																		
8Gb performance:	50 meters	150 meters	150 meters	190 meters																		
4Gb performance:	150 meters	380 meters	380 meters	400 meters																		
USB Optical Cables	HP 16Gb Long Wave B-series 10km FC SFP+ 1 Pack	QK725A																				
	HP 8Gb Long Wave B-series 10km FC SFP+ 1 Pack	AJ717A																				
	HP 8Gb Long Wave B-Series 25km FC SFP+ 1 Pack	AW538A																				
	2Gb USB Device	AK864B																				
	HP PremierFlex OM4+ Fiber Optic Cables																					
	1m HP PremierFlex OM4 LC/LC Multi-mode Optical Cable	QK732A																				
	2m HP PremierFlex OM4 LC/LC Multi-mode Optical Cable	QK733A																				
	5m HP PremierFlex OM4 LC/LC Multi-mode Optical Cable	QK734A																				
	15m HP PremierFlex OM4 LC/LC Multi-mode Optical Cable	QK735A																				

Configuration Information

30m HP PremierFlex OM4 LC/LC Multi-mode Optical Cable	QK736A
50m HP PremierFlex OM4 LC/LC Multi-mode Optical Cable	QK737A
HP OM3 LC-LC Optical Cables	
.5m HP OM3 LC/LC Multi-mode Optical Cable	AJ833A
1m HP OM3 LC/LC Multi-mode Optical Cable	AJ834A
2m HP OM3 LC-LC Multi-mode Optical Cable	AJ835A
5m HP OM3 LC-LC Multi-mode OM3 Optical Cable	AJ836A
15m HP OM3 LC-LC Multi-mode OM3 Optical Cable	AJ837A
30m HP OM3 LC-LC Multi-mode OM3 Optical Cable	AJ838A
50 m HP OM3 LC-LC Multi-mode OM3 Optical Cable	AJ839A

Step 3 - Optional Software*

* For Fabric OS (FOS) minimum requirements, please refer to: <http://spock.corp.hp.com/>

Software for SN3000B 16Gb FC Switch	SAN Network Advisor Enterprise Software	TC352A
	SAN Network Advisor Professional Plus Software	TC353A
	SAN Network Advisor Professional Plus Upgrade Software	TC354A
	Power Pack+ Upgrade Software	T5521A
	NOTE: The Power Pack+ Software Bundle kit includes Adaptive Networking, Fabric Watch, ISL Trunking, Extended Fabric, Server Application Optimization, and Advanced Performance Monitor.	
	HP B-series 8-24 Port SAN Switch Adaptive Networking LTU	T5524A
Optional Software	HP B-series 8-24 Port SAN Switch ISL Trunking LTU	T5527A
	HP SN3000B 16Gb 24/12 Fibre Channel Switch 12-port Upgrade LTU	TC391A
	HP Intelligent Infrastructure Analyzer Software LTU	TC400A
	HP Intelligent Infrastructure Analyzer Software E-LTU	TC400AAE

Technical Specifications

System Architecture	Fibre Channel ports	Switch mode (default): 12- and 24-port configurations (12-port increment through Ports on Demand [PoD] license); universal (E, F, M, EX, D) ports
	Scalability	Full fabric architecture: http://h18006.www1.hp.com/products/storageworks/san/documentation.html
	Certified maximum	Refer to SAN Design Guide for current configuration information: http://h18006.www1.hp.com/products/storageworks/san/documentation.html
	Interoperability	<ul style="list-style-type: none">● 4/256 SAN Director● 4/64 SAN Switch● 4/32 SAN Switch● 4/32B SAN Switch● 4/8 SAN Switch● 4/16 SAN Switch● 8/8 SAN Switch● 8/24 SAN Switch● 8/40 SAN Switch● 8/80 SAN Switch● Encryption SAN Switch● 2408 FCoE Converged Network Switch● 1606 Extension SAN Switch● DC04 SAN Director● DC SAN Backbone Director● SN8000B 8-Slot SAN Backbone Director● SN8000B 4-Slot SAN Director● SN6000B 16Gb FC Switch● Brocade 4Gb SAN Switch for HP c-Class BladeSystem● Brocade 8Gb SAN Switch for HP BladeSystem c-Class● HP 400 MP-Router
	Performance	Auto-sensing of 4, 8, and 16 Gbps port speeds.
	ISL Trunking	Frame-based trunking with up to eight 16 Gbps ports per ISL trunk; up to 128 Gbps per ISL trunk. Exchange-based load balancing across ISLs with DPS included in Fabric OS. There is no limit to how many trunk groups can be configured in the switch.
	Aggregate bandwidth	768 Gbit/sec full duplex
	Fabric latency	Latency for locally switched ports is 700 ns; encryption/compression is 5.5 sec per node; Forward Error Correction (FEC) adds 400 ns between E_Ports (enabled by default).
	Maximum frame size	2112-byte payload
	Classes of service	Class 2, Class 3, Class F (inter-switch frames)
	Port types	D_Port (Diagnostic Port), E_Port, EX_Port, F_Port, M_Port (Mirror Port); self-discovery based on switch type (U_Port); optional port type control Access Gateway mode: F_Port and NPIV-enabled N_Port
	Data traffic types	Fabric switches supporting unicast

Technical Specifications

	Media types	Hot-pluggable, B-Series Branded Small Form Factor Pluggable (SFP), LC connector; Short-Wave Laser (SWL), Long-Wave Laser (LWL); distance depends on fiber-optic cable and port speed. Supports SFP+ (16/8 Gbit/sec) optical transceivers.
	USB	One USB port for system log file downloads or firmware upgrades
	Fabric services	Simple Name Server (SNS); Registered State Change Notification (RSCN), NTP, RADIUS, RCS (Reliable Commit Service), Dynamic Path Selection (DPS), Brocade Advanced Zoning, WEB TOOLS™. Optional Fabric Services include: Fabric Watch™, Extended Fabrics, ISL Trunking, End-to-End Performance Monitoring (APM) and Adaptive Networking with QoS.
Management	Options	SFP media, USB Device
	Management software supported	SSH v2, HTTP/HTTPS, SNMP v1/v3, Telnet; SNMP; WEBTOOLS, B-series SAN Network Advisor, SMI-S, RADIUS, LDAP.
	Management access	10/100 Mbps Ethernet (RJ-45), in-band over Fibre Channel, serial port (RJ-45), and one USB port
	Diagnostics	POST and embedded online/offline diagnostics including FCPing, Pathinfo (FCTraceroute), Forward Error Correction (FEC), etc. Diagnostic Port (D-Port) diagnostic features for physical link trouble shooting
Mechanicals	Enclosure	Back-to-front airflow; power from back; 1U
	Size	Width: 438 mm (17.23 in.) Height: 43 mm (1.7 in.) Depth: 443 mm (17.45 in.)
Environment	System Weight	7.82 kg (17.25 lb) with one power supply, without transceivers
	Temperature	Operating: 0° to 40° C (32° to 104° F) Non-operating: -25° to 70° C (-13° to 158° F)
	Humidity	Operating: 10 to 85 percent non-condensing
	Altitude	Operating: Up to 3000 meters (9,842 feet) Storage: Up to 12 kilometers (39,370 feet)
	Shock	Operating: 20 g, 6 ms half-sine Non-operating: Half sine, 33G 11 ms. 3/eg Axis
	Vibration	Operating: 0.5 g sine, 0.4 grms random, 5 to 500 Hz Non-operating: 2.0 g sine, 1.1 grms random, 5 to 500 Hz
Power	Power Supply	Single power supply with integrated system cooling fan; Optional hot-swappable dual redundant power supply
	AC input	85 V to 264 V ~5 A to 2.5 A
	Input line frequency	47 Hz to 63 Hz
	Power Consumption	80 watts with all 24 ports populated with 16 Gbps SWL optics 60 watts for empty chassis with no optics

Technical Specifications

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