QuickSpecs

Overview

HPE SN6000B Fibre Channel Switch

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 HPE SN6000B 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 SN6000B Switch is configurable in 24, 36, or 48 ports and supports 4, 8, 10, 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 SN6000B 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 SN6000B is available in six models:

- HPE SN6000B 16Gb 48-port/48-port Active Power Pack+ Fibre Channel Switch
- HPE SN6000B 16Gb 48-port/24-port Active Power Pack+ Fibre Channel Switch
- HPE SN6000B 16Gb 48-port/48-port Active Fibre Channel Switch
- HPE SN6000B 16Gb 48-port/24-port Active Fibre Channel Switch
- HPE SN6000B 16Gb 48-port/24-port Active Port Side Air Intake Fibre Channel Switch
- HPE StoreFabric SN6000B 16Gb Bundled Fibre Channel switch

Power Pack+ includes additional software: Fabric Vision, Fabric Watch, ISL Trunking, Extended Fabric and Advanced Performance Monitor. Power Pack+ software provides the SAN administrator with the necessary tools to monitor the health and performance of the network, while also ensuring the highest levels of security, scalability and manageability.

HPE SN6000B Fibre Channel Switch

What's New

- Updated SKUs (suffix changed from B to C),
- Updated HPE B-series Network Advisor SKUs to the next suffix (A to B) and added 3 Network Advisor E-LTU SKUs (Suffix AE).

Features and Benefits

Key Features and Benefits

- Delivers 16 Gbps performance with up to 48 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 24 to 48 ports in 12-port increments
- 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 midrange enterprise SAN switches, along with redundant, hot-pluggable components and non-disruptive software upgrades
- Metro cloud connectivity features including integrated DWDM and dark fiber support (optional license)
- In-flight compression and encryption included providing efficient link utilization and security.
- Yields exceptional price/performance value, exceeding comparable Ethernet storage-based alternatives
- Unique Bundle model: The HPE StoreFabric SN6000B 16Gb Bundled Fibre Channel switch model facilitates ease of ordering by offering the HPE SN6000B 48/24 Fibre channel switch along with twenty-four 16Gb optical transceivers in one package. The HPE StoreFabric SN6000B 16Gb Bundled Fibre Channel switch model is offered at a lower price than the sum of the list prices of the HPE SN6000B 48/24 Fibre Channel switch and the 16Gb optical transceivers

Models

HPE SN6000B 16Gb FC Switch Models

HPE SN6000B 16Gb 48-port/48-port Active Power Pack+ Fibre Channel Switch	QR481C
HPE SN6000B 16Gb 48-port/24-port Active Power Pack+ Fibre Channel Switch	QK754C
HPE SN6000B 16Gb 48-port/24-port Active Fibre Channel Switch	QK753C
HPE StoreFabric SN6000B 16Gb 48/24 Bundled Fibre Channel Switch	C8R08A

Product Highlights

SN6000B 16Gb FC Switch
- Simplifies enterprise SAN deployment by combining higher edge switch port density with exceptional scalability, performance and reliability
- Delivers 24, 36, or 48-ports in a 1U enclosure
- Provides 4 Gb/s, 8 Gb/s, 10 Gb/s, 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

NOTE: * 16 Gb/s performance can be obtained between two 16 Gb/s capable devices.

Configuration Support
http://www.hpe.com/support/san-documentation

High-availability features
- Two integrated redundant, hot swappable power supplies 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
- In-flight Compression and Encryption
- Access Gateway
- Dynamic and System Monitoring Capabilities for High Reliability
- Virtual Fabrics
- HPE B-series SAN Network Advisor software (optional)

Cabinet Support
HPE (22U, 36U, and 42U) 10000 G2 Series, the Intelligent Series racks, and HPE (14U, 22U, 36U, 42U, and 47U) 11000 G2 Series racks.
NOTE: To order factory integration, add 0D1 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

In-flight Compression and Encryption
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 generally achieve 2:1 compression with minimal impact on performance. Compression can be used in conjunction with in-flight encryption.

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. This is complementary to data-at-rest encryption provided by the Encryption SAN Switch and the Encryption Blade for B-series SAN Directors.

Adaptive Networking
Adaptive Networking (AN) is a 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.

Server Application Optimization
Server Application Optimization (SAO) 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 requires B-series HBA installed in the server

Product Highlights

Software Components, Optional

SN6000B 16Gb Switch Power Pack+ Software Bundle

The Power Pack+ Software Bundle comes with the (SN6000B16Gb 48/48 Power Pack+ Switch and SN6000B 16Gb 48/24 Power Pack+ Switch) or as an optional software (bundle for the SN6000B 16Gb 48/48 FC Switch, the SN6000B 48/24 FC Switch and the SN6000B Bundled Fibre Channel switch). It includes the following:

- Fabric Vision
- Fabric Watch
- Advanced Performance Monitor
- Extended Fabric
- Ports-on-demand

NOTE: Starting with FOS 7.4.0a, Fabric Watch and Advanced Performance Monitor will be obsolete. Fabric Watch settings can be converted to MAPS prior to upgrading and Advanced Performance Monitor is replaced by Flow Vision. Both MAPS and Flow Vision require a Fabric Vision license.

Fabric Vision

Fabric Vision offers innovative diagnostic, monitoring and management capabilities to help accelerate new application deployments, address SAN problems before they impact operations and reduce operational costs. It Includes

- Monitoring and Alerting Policy Suite (MAPS): A policy-based monitoring tool with pre-built rules and automation that simplifies fabric-wide threshold configuration and monitoring.
- Flow Vision: A comprehensive tool that enables administrators to identify, monitor, and analyze specific application data flows without using taps to ensure optimized performance
- Health and performance dashboard: A single customizable screen displayed in HPE SAN Network Advisor that contains all critical SAN information for convenient review and analysis

Fabric Vision will be included by default in all HPE StoreFabric B-series Fibre Channel switches and Directors bundled with Power Pack+ (with FOS 7.2.x and later*). In all other cases, Fabric Vision can be enabled on HPE StoreFabric B-series Fibre Channel switches and Directors in any one of the following ways

- Application of the Fabric Vision LTU (FOS 7.2.x and later*)
- Application of the Power Pack+ LTU (FOS 7.2.x and later*)
- Upgrading existing Switch/Director loaded with Power Pack+ to FOS 7.2.x or later*
- Upgrading existing Switch/Director loaded with both Advanced Performance Monitor (APM) and Fabric Watch (FW) licenses to FOS 7.2.x or later*

NOTE: *See HPE SPOCK for Hewlett Packard Enterprise supported versions of FOS 7.2.x

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.

NOTE: Fabric Watch has been obsoleted in FOS 7.4.0 and later. Users can migrate their Fabric Watch settings to the Fabric Vison licensed Monitoring and Performance Suite (MAPS) prior to upgrading.

Product Highlights

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.
NOTE: Advanced Performance Monitoring has been obsoleted in FOS 7.4.0 and later. Users can utilize the Fabric Vision licensed Flow Vision features for performance monitoring.

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.

SAN Network Advisor Professional
HPE 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 up to two SAN Fabric OS (FOS) fabrics (up to 300 B-Series switch ports and 1000 devices)
- Performs group switch management beyond the scope of Web Tools
- Does not offer management of the SN8000B 8-slot or DC SAN Backbone Directors,

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 Professional+ or 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 Professional+ or SAN Network Advisor Enterprise.

SAN Network Advisor Enterprise and Professional+
HPE 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 100 fabrics and 15,000 switch ports, while SAN Network Advisor Professional+ scales to 36 SAN Fabrics and 2560 switch ports. To accommodate growth, there is an upgrade available to SAN Network Advisor Enterprise from SAN Network Advisor Professional Plus.

Integrated Routing
Integrated Routing is an optional license which provides native Fibre Channel Routing (FCR) on a per-port basis, rather than limiting routing ports to those on a dedicated routing switch or blade. Just like traditional FCR, Integrated Routing uses EX_Ports to import/export devices between fabrics, enabling selective device sharing while maintaining remote fabric isolation. Integrated Routing provides architecture flexibility to route on a port-by-port basis, enabling increased scalability and fault isolation.

HPE Smart SAN for 3PAR
HPE Smart SAN, optional software for HPE 3PAR, makes end-to-end SAN configuration and management simple and reduces the probability of errors through automation. It is an application embedded in SAN components (array, hosts and switches) that enables

Product Highlights

3PAR arrays to orchestrate configuration, settings and policies across the SAN. Smart SAN is supported with B-series Switches, HPE StoreFabric Fibre Channel adapters (HBAs) and 3PAR storage. HPE Smart SAN for 3PAR through its Target Driven Peer Zoning (TDPZ) feature enables customers to automate peer zoning, resulting in the creation of fewer zones and enables configuration of zones in minutes and not in hours. Through automation, it reduces the probability of errors and potential downtime. Additional information can be found here: **http://www.hpe.com/storage/3par**
NOTE: Supports B-series 16Gb and 8Gb FC switches with FOS 7.4.0a or later.
NOTE: A list of supported HPE FC Adapters can be found at **http://www.hpe.com/storage/spock**
NOTE: Supports 3PAR StoreServ storage with 3.2.2 or later with only 16Gb target ports on HPE 3PAR StoreServ storage.

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://h20565.www2.hpe.com/portal/site/hpsc/**

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
Protect your business beyond warranty with HPE Support Services
HPE Pointnext provides a comprehensive portfolio including Advisory and Transformational, Professional, and Operational Services to help accelerate your digital transformation. From the onset of your transformation journey, Advisory and Transformational Services focus on designing the transformation and creating a solution roadmap. Professional Services specializes in creative configurations with flawless and on-time implementation, and on-budget execution.   Finally, operational services provides innovative new approaches like Flexible Capacity and Datacenter Care, to keep your business at peak performance. HPE is ready to bring together all the pieces of the puzzle for you, with an eye on the future, and make the complex simple.

Connect your devices
Unlock all of the benefits of your technology investment by connecting your products to Hewlett Packard Enterprise. Reduce down time, increase diagnostic accuracy and have a single consolidated view of your environment. By connecting, you will receive 24x7monitoring, pre-failure alerts, automatic call logging, and automatic parts dispatch. HPE Proactive Care Service and HPE Datacenter Care Service customers will also benefit from proactive activities to help prevent issues and increase optimization. All of these benefits are already available to you with your server storage and networking products, securely connected to HPE support. Learn more about getting connected at **www.hpe.com/services/getconnected**

Deploy
HPE SAN Deployment Service
Hewlett Packard Enterprise delivers complete design and implementation services for Fibre Channel, FCoE, FCIP, SAS, and iSCSI SAN connectivity components.
http://h20195.www2.hpe.com/V2/GetPDF.aspx/5981-8527EN.pdf
HPE Basic Installation Service
Provides for the basic hardware installation of HPE branded storage devices to assist you in bringing your new hardware into operation in a timely and professional manner.
https://www.hpe.com/h20195/V2/GetPDF.aspx/5981-9356EN.pdf

Optimized Care
HPE Proactive Care* with 6 hour call-to-repair commitment, three year Support Service - HPE Proactive Care gives customers an enhanced call experience plus helps preventing problems and maintains IT stability by utilizing tailored, proactive reports with recommendations and advice when your products are connected to HPE. This Service combines three years' proactive reporting and advice with our highest level of hardware support - HPE's 24x7, six hour hardware call-to-repair. HPE is the only leading manufacturer who makes this level of coverage available as a standard service offering for your most valuable storage systems.
https://www.hpe.com/h20195/v2/GetPDF.aspx/4AA3-8855ENW.pdf

Service and Support

Standard Care

HPE Proactive Care* with 24x7 coverage, three year Support Service - HPE Proactive Care gives customers an enhanced call experience plus helps preventing problems and maintains IT stability by utilizing personalized proactive reports with recommendations and advice when your products are connected to HPE. This Service combines three years' proactive reporting and advice with our 24x7 coverage, four hour hardware response time when there is a problem.
 https://www.hpe.com/h20195/v2/GetPDF.aspx/4AA3-8855ENW.pdf
*HPE Proactive Care and HPE Proactive Care Advanced require that the customer connect their devices to make the most of these services and receive all the deliverables.

Basic Care

HPE Foundation Care 24x7, three-year Support Service – HPE Foundation Care 24x7 gives you access to HPE 24 hours a day, seven days a week for assistance on resolving issues. This service includes need based Hardware onsite response within four hours. Simplify your support experience and make HPE your first call to help resolve hardware or software problems.
https://www.hpe.com/h20195/v2/GetPDF.aspx/4AA4-8876ENW

Related Services

HPE Datacenter Care service
HPE Datacenter Care helps improve IT stability and security, increase the value of IT, and enable agility and innovation It is a structured framework of repeatable, tested, and globally available services "building blocks." You can deploy, operate, and evolve your datacenter wherever you are on your IT journey. With HPE Datacenter Care, you benefit from a personalized relationship with HPE via a single point of accountability for HPE and others' products. For more information, visit **www.hpe.com/services/datacentercare**

HPE Flexible Capacity, With Flexible Capacity, you get the speed, scalability, and economics of the public cloud in the privacy of your data center. Gain the advantages of the public cloud—consumption-based payment, rapid scalability without worrying about capacity constraints. Reduce the "heavy lifting" needed to operate a data center. And retain the advantages that IT provides the business (i.e., control, security). Deliver the right user experience, choose the right technology for the business, manage privacy and compliance, and manage the cost of IT. And, you have the option to use the public cloud when needed.

Parts and Materials

Hewlett Packard Enterprise will provide HPE-supported replacement parts and materials necessary to maintain the covered hardware product in operating condition, including parts and materials for available and recommended engineering improvements.
Parts and components that have reached their maximum supported lifetime and/or the maximum usage limitations as set forth in the manufacturer's operating manual, product quick-specs, or the technical product data sheet will not be provided, repaired, or replaced as part of these services.
The defective media retention service feature option applies only to Disk or eligible SSD/Flash Drives replaced by Hewlett Packard Enterprise due to malfunction. **https://www.hpe.com/us/en/support.html**

Service and Support

For more information
HPE Support Center
The HPE Support Center is a personalized online support portal with access to information, tools and experts to support HPE business products. Submit support cases online, chat with Hewlett Packard Enterprise experts, access support resources or collaborate with peers.

Learn more **www.hpe.com/support/hpesc**

The HPE Support Center Mobile App* allows you to resolve issues yourself or quickly connect to an agent for live support. Now, you can get access to personalized IT support anywhere, anytime.

HPE Insight Remote Support and HPE Support Center are available at no additional cost with a HPE warranty, HPE Support Service or HPE contractual support agreement.

*HPE Support Center Mobile App is subject to local availability.

www.hpe.com/services
https://www.hpe.com/us/en/services/operational.html

To learn more on HPE Storage Services, please contact your Hewlett Packard Enterprise sales representative or Hewlett Packard Enterprise Authorized Channel Partner. Contact information for a representative in your area can be found at "Contact HPE" **https://www.hpe.com/us/en/contact-hpe.html**

HPE Support Services are sold by Hewlett Packard Enterprise and Hewlett Packard Enterprise Authorized Service Partners:
- Services for customers purchasing from HPE or an enterprise reseller are quoted using HPE order configuration tools.
- Customers purchasing from a commercial reseller can find HPE Support Services at **https://ssc.hpe.com/portal/site/ssc/**

Family Information

Features	8/8 SAN Switch Base and 8/8 SAN Switch	8/24 SAN Switch Base	SN3000B 16Gb FC Switch	SN3600B 32Gb FC Switch and SN3600B 32Gb FC Power Pack+
Targeted Environment	Workgroups, Departments	Workgroups, Departments	Workgroups, Departments	Workgroups, Departments
Fibre Channel Port Bandwidth	8Gbps	8Gbps	16Gbps	32Gbps
Aggregate device bandwidth	64-192 Gbps	128-192 Gbps	192-384 Gbps	768 Gbps
OS Support	**NOTE:** Please Refer to SPOCK **https://www.hpe.com/storage/spock**			
Storage system support	**3PAR StoreServ, StoreVirtual 4000, P9000/XP, P6000/EVA, P2000/MSA**			
FC Ports	8 Enabled 24 Max	16 Enabled 24 Max	12 or 24 Enabled 24 Max	8 or 24 Enabled 24 Max
SFP	B-series	B-series	B-series	B-series
Advanced Trunking	Optional Upgrade	Included with Power Pack+ or Optional Upgrade	Included with Power Pack+ Upgrade	Included with Power Pack+ or Optional Upgrade
Adaptive Networking	Included	Included	Included	Included
Form factor	1U	1U	1U	1U
Zoning Software	Yes (Included)	Yes (Included)	Yes (Included)	Yes (Included)
Hot plug, redundant power supplies	No	No	Optional	No
Hot plug fans	No	No	Yes (integrated with power supply)	Yes (integrated with power supply)

Features	SN6000B 16 Gb FC Switch and SN6000B 16 Gb FC Power Pack+	SN6600B 32 Gb FC Switch and SN6600B 32 Gb FC Power Pack+	SN6600B 32 Gb Bundled (SFP+) FC Switch and SN6600B 32 Gb Power Pack+ Bundled (SFP+) FC Switch
Targeted Environment	Workgroups, Departments	Workgroups, Departments	Workgroups, Departments
Fibre Channel Port Bandwidth	16 Gbps	32 Gbps	32 Gbps
Aggregate device bandwidth	384- 768 Gbps	2 Tbps	2 Tbps
OS Support	**NOTE:** Please Refer to SPOCK **https://www.hpe.com/storage/spock**		
Storage system support	**3PAR StoreServ, StoreVirtual 4000, P9000/XP, P6000/EVA, P2000/MSA**		
FC Ports	24 or 48 Enabled 48 Max	24 or 48 enabled 64 Max	24 or 48 Enabled 64 Max
SFP	B-series	B-series (16 Gb or 32 Gb)	B-series, 24 or 48 32 Gb SFP+ included in the box
Advanced Trunking	Included with Power Pack+ or Optional Upgrade	Included with Power Pack+ or Optional Upgrade	Included with Power Pack+ or Optional Upgrade
Adaptive Networking	Included	Included	Included
Form factor	1U	1U	1U
Zoning Software	Yes (Included)	Yes (Included)	Yes (Included)

Family Information

Hot plug, redundant power supplies	Yes	Yes	Yes
Hot plug fans	Yes (integrated with power supply)	Yes (integrated with power supply)	Yes (integrated with power supply)
Features	**SN6500B 16Gb FC Switch and SN6500B 16Gb FC Power Pack+**	**SN4000B Power Pack+ SAN Extension Switch**	**1606 Extension SAN Switch**
Targeted Environment	Workgroups, Departments	Data Centers; long distance replication, multiprotocol SAN Fabrics	Data Centers
Fibre Channel Port Bandwidth	16Gbps	16Gbps	8Gbps
Ethernet	N/A	1/10/40 Gbps Ethernet	1Gbps Ethernet
Aggregate device bandwidth	768-1536-Gbps		
OS Support	**NOTE:** Please Refer to SPOCK **https://www.hpe.com/storage/spock**		
Storage system support	**3PAR StoreServ, StoreVirtual 4000, P9000/XP, P6000/EVA, P2000/MSA**		
FC Ports	48 or 96 Enabled 96 Max	24 FC Ports Enabled 24 Max	4 or 16 Enabled 16 Max
Ethernet Ports	N/A	16 Enabled	2 or 6 Enabled 6 Max
SFP	B-series	B-series	B-series
Advanced Trunking	Included with Power Pack+ or Optional Upgrade	Included	Included with Power Pack+ or Optional Upgrade
Adaptive Networking	Included	Included	Included
Form factor	2U	2U	1U
Zoning Software	Yes (Included)	Yes (Included)	Yes (Included)
Hot plug, redundant power supplies	Yes	Yes	Yes
Hot plug fans	Yes	Yes	Yes

Features	SN8000B 8-Slot SAN Director Power Pack+	SN8600B 8-Slot SAN Director Power Pack+
Targeted Environment	Cloud Optimized Data Centers	Cloud Optimized Data Centers
Port Bandwidth	Up to 16Gbps	Up to 32 Gbps
Aggregate device bandwidth	10.2Tbps	20.48 Tbps
OS Support	**NOTE:** Please Refer to SPOCK **https://www.hpe.com/storage/spock**	
Storage system support	**3PAR StoreServ, StoreVirtual 4000, P9000/XP, P6000/EVA, P2000/MSA**	
Ports	Up to 512 SFP	512 32 Gbps ports or a 640-port equivalent with 128 Gbps (32 Gbps×4 QSFP ports)
SFP	B-series	B-series
Advanced Trunking	Included with Power Pack	Included with Power Pack
Adaptive Networking	Included	Included
Form factor	14U	14U
Zoning Software	Yes (included)	Yes (included)
Hot plug, redundant power supplies	Yes	Yes

Family Information

Hot plug fans	Yes	Yes

Features	SN8000B 4-Slot SAN Director and 4-Slot SAN Director Power Pack+	SN8600B 4-slot SAN Director Power Pack+
Targeted Environment	Cloud Optimized Data Centers	Cloud Optimized Data Centers
Port Bandwidth	Up to 16Gbps	Up to 32Gbps
Aggregate device bandwidth	5.1 Tbps	10.24 Tbps
OS Support	**NOTE:** Please Refer to SPOCK **https://www.hpe.com/storage/spock**	
Storage system support	**3PAR StoreServ, StoreVirtual 4000, P9000/XP, P6000/EVA, P2000/MSA**	
Ports	Up to 256 SFP	Up to 256 32 Gbps ports or a 320-port equivalent with 16 ICL ports.
SFP	B-series	B-Series
Advanced Trunking	Included with Power Pack or Optional Upgrade	Included with Power Pack
Adaptive Networking	Included	Included
Form factor	9U	9U
Zoning Software	Yes (included)	Yes (Included)
Hot plug, redundant power supplies	Yes	Yes
Hot plug fans	Yes	Yes

Features	Brocade 16Gb SAN Switch for HPE c-Class BladeSystem	Brocade 8Gb SAN Switch for HPE c-Class BladeSystem	Brocade 16Gb Fibre Channel SAN Switch Module for HPE Synergy
Targeted Environment	Enterprise, Datacenters, Workgroups, Departments	Workgroups, Departments	Enterprise, Datacenters, Workgroups, Departments
Port Bandwidth	16 Gbit/sec	8 Gbit/sec	16 Gbit/sec
Aggregate device bandwidth	448 Gbit/sec	192 Gbit/sec	576 Gbit/sec
OS Support	**NOTE:** Please Refer to **SAN Design Guide**		
Storage system Support	**3PAR StoreServ, StoreVirtual 4000, P9000/XP, P6000/EVA, P2000/MSA**		
Ports	12 external /16 internal	4 or 8 external / 8 or 16 internal	8 SFP+ external, 4 QSFP external /12 internal
SFP	B-series	B-series	B-series
Advanced Trunking	Included with Power Pack+ or Optional Upgrade	Included with Power Pack+ or Optional Upgrade	Included with Power Pack+ or Optional Upgrade
Adaptive Networking	Included	Included	Included
Form factor	Embedded	Embedded	Embedded
Zoning Software	Yes (Included)	Yes (Included)	Yes (Included)
Hot plug, redundant power supplies	Yes, in BladeSystem Enclosure	Yes, in BladeSystem Enclosure	Yes, in Synergy Frame
Hot plug fans	Yes, in BladeSystem Enclosure	Yes, in BladeSystem Enclosure	Yes, in Synergy Frame

Configuration Information

Step 1 - Base Configuration

Select one:

Model	Model Description	Part Number
SN6000B 16Gb 48-port Power Pack+ FC Switch		QR481C
	16Gb 48-port FC Switch with 48 active ports; rackmount kit; accessory kit (enterprise safety and regulatory information, installation guide, rack-mounting instructions), power cords, serial cable, base software of Advanced Fabric OS, Advanced Web Tools, Advanced Zoning, SAN Network Advisor Professional, Brocade EZ Switch, and Power Pack+ software of Adaptive Networking, ISL Trunking, Extended Fabric, Advanced Performance Monitoring, Server Application Optimization, and Fabric Watch. Starting with FOS 7.4.0a, Fabric Watch and Advanced Performance Monitor will be obsolete. Fabric Watch settings can be converted to MAPS prior to upgrading and Advanced Performance Monitor is replaced by Flow Vision. Both MAPS and Flow Vision require a Fabric Vision license. **NOTE:** Requires optical transceivers listed below.	
SN6000B 16Gb 48/24 Power Pack+ FC Switch		QK754C
	16Gb 48-port FC Switch with 24 active ports; rackmount kit; accessory kit (enterprise safety and regulatory information, installation guide, rack-mounting instructions), power cords, serial cable, base software of Advanced Fabric OS, Advanced Web Tools, Advanced Zoning, SAN Network Advisor Professional, Brocade EZ Switch, and Power Pack+ software of Adaptive Networking, ISL Trunking, Extended Fabric, Advanced Performance Monitoring, Server Application Optimization, and Fabric Watch. Starting with FOS 7.4.0a, Fabric Watch and Advanced Performance Monitor will be obsolete. Fabric Watch settings can be converted to MAPS prior to upgrading and Advanced Performance Monitor is replaced by Flow Vision. Both MAPS and Flow Vision require a Fabric Vision license. **NOTE:** Requires optical transceivers listed below.	
SN6000B 16Gb 48/24 FC Switch		QK753C
	16Gb 48-port FC Switch with 24 active ports; rackmount kit; accessory kit (enterprise safety and regulatory information, installation guide, rack-mounting instructions), power cords, 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.	
SN6000B 16Gb Bundled Fibre Channel Switch		C8R08A
	16Gb 48-port FC Switch with 24 active ports; rackmount kit; twenty-four 16Gb optical transceivers, accessory kit (enterprise safety and regulatory information, installation guide, rack-mounting instructions), power cords, serial cable, base software of Advanced Fabric OS, Advanced Web Tools, Brocade EZ Switch, Advanced Zoning, and SAN Network Advisor Professional. **NOTE:** Twenty-four 16Gb optical transceivers (QK724A) are included in the package with this switch model.	
HPE SN6000B SAN Switch 12-port Upgrade E-LTU		TC356AAE
	12 port upgrade license for SN6000B 16Gb 48/24 Power Pack FC Switch (QK754B), SN6000B 16Gb 48/24 FC Switch (QK753B), SN6000B 16Gb 48/24 Port Side Air Intake FC Switch (E7X99A) and the SN6000B 16Gb Bundled Fibre Channel Switch (C8R08A)	(Physical License TC356A)

NOTE: Most HPE B-series software licenses are now available through the Electronic Delivery (E-Delivery) mechanism. The E-Delivery software licenses with part numbers listed in this document are functionally equivalent to the corresponding physical licenses with different part numbers. Some software licenses in this document are represented by two part numbers, the first of which is the E-Delivery version (ending with AAE) and the second is the physical version.

Configuration Information

Step 2 - Options

Fibre Channel Transceivers	Model Description	Part Number
	HPE 8Gb Shortwave B-series Fibre Channel 1 Pack SFP+ Transceiver	AJ716B
	NOTE: AJ716A is not supported with the SN6000B 16Gb FC Switch.	
	HPE B-series 16Gb SFP+ Short Wave Transceiver	QK724A
	HPE B-series 16Gb LW 25km FC SFP 1-pack Transceiver	H6Z29A

Distance - Maximum	HPE Standard OM3 Cable	HPE PremierFlex OM3+ Cable	HPE PremierFlex OM4 Cable
16Gb performance:	100 meters	100 meters	125 meters
8Gb performance:	150 meters	150 meters	190 meters
4Gb performance:	380 meters	380 meters	400 meters

	Model Description	Part Number
	HPE B-series 16Gb SFP+ Long Wave 10km Transceiver	QK725A
	HPE 8Gb Long Wave B-series 10km Fibre Channel 1 Pack SFP+ Transceiver	AJ717A
	HPE B-series 8Gb Extended Long Wave 25km Fibre Channel SFP+ Transceiver 1 Pack	AW538A
	HPE B-series 10Gb SFP+ Short Range Transceiver	QK726A
	HPE B-series 10Gb SFP+ Long Range Transceiver	QK727A
	HPE SN6000B supports the following HPE Complete SmartOptics 16Gb Tranceivers– 16G FC embedded DWDM Solution	
	NOTE: For more information regarding Smartoptics SKUs/Accessories/Cables and ordering rules please refer HPE Complete Smartoptics QuickSpecs.	
	https://www.hpe.com/h20195/v2/Getdocument.aspx?docname=c05205226	
Accessories	HPE B-series 4G USB Drive	N9Y63A
	HPE StoreFabric SN3000B/SN6000B 16Gb SAN Switch Accessory Kit	E7Y00A
	NOTE: When any of the SN6000B Switch models is ordered, an accessory kit is included in the package by default. E7Y00A is required when the original accessory kit or Rack Mount Kit is unavailable	
	NOTE: The Accessory Kit contains a Rack Mount Kit including rails, rail mounting hardware and plenum and HPE product documentation including Read Me First, Safety Guides, User License, and Warranty.	
Optical Cables	**HPE PremierFlex OM4+ Fiber Optic Cables**	
	HPE Premier Flex LC/LC Multi-mode OM4 2 fiber 1m Cable	QK732A
	HPE Premier Flex LC/LC Multi-mode OM4 2 fiber 2m Cable	QK733A
	HPE Premier Flex LC/LC Multi-mode OM4 2 fiber 5m Cable	QK734A
	HPE Premier Flex LC/LC Multi-mode OM4 2 fiber 15m Cable	QK735A
	HPE Premier Flex LC/LC Multi-mode OM4 2 fiber 30m Cable	QK736A
	HPE Premier Flex LC/LC Multi-mode OM4 2 fiber 50m Cable	QK737A
	HPE OM3 LC-LC Optical Cables	
	HPE LC to LC Multi-mode OM3 2-Fiber 0.5m 1-Pack Fiber Optic Cable	AJ833A
	HPE LC to LC Multi-mode OM3 2-Fiber 1.0m 1-Pack Fiber Optic Cable	AJ834A
	HPE LC to LC Multi-mode OM3 2-Fiber 2.0m 1-Pack Fiber Optic Cable	AJ835A
	HPE LC to LC Multi-mode OM3 2-Fiber 5.0m 1-Pack Fiber Optic Cable	AJ836A
	HPE LC to LC Multi-mode OM3 2-Fiber 15.0m 1-Pack Fiber Optic Cable	AJ837A

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HPE LC to LC Multi-mode OM3 2-Fiber 30.0m 1-Pack Fiber Optic Cable	AJ838A
HPE LC to LC Multi-mode OM3 2-Fiber 50.0m 1-Pack Fiber Optic Cable	AJ839A

Step 3 - Optional Software

NOTE: For Fabric OS (FOS) minimum requirements, please refer to: **http://www.hpe.com/storage/spock**

Software for SN6000B 16Gb FC Switch	HPE SAN Network Advisor Enterprise Software E-LTU	TC352CAE, (TC352C Physical License)
	HPE SAN Network Advisor Professional Plus Software E-LTU	TC353CAE, (TC353C Physical License)
	HPE SAN Network Advisor Professional Plus Upgrade E-LTU	TC354CAE, (TC354C (Physical License)
	HPE B-series Mid Range Switch Power Pack+ E-LTU	T5522BAE
	NOTE: The Power Pack+ Software Bundle kit includes Fabric Vision, Fabric Watch, ISL Trunking, Extended Fabric and Advanced Performance Monitor. Starting with FOS 7.4.0a, Fabric Watch and Advanced Performance Monitor will be obsolete. Fabric Watch settings can be converted to MAPS prior to upgrading and Advanced Performance Monitor is replaced by Flow Vision. Both MAPS and Flow Vision require a Fabric Vision license.	(Physical License T5522B)
	NOTE: Adaptive Networking and Server Application Optimization features are included by default in the switch firmware (FOS 7.2.x or later, See HPE SPOCK for Hewlett Packard Enterprise supported versions of FOS 7.2.x) and do not require a separate license.	
	HPE 8/16Gb Mid Range Switch Fabric Vision E-LTU	TC510AAE (Physical License - TC510A)
	HPE B-series Mid/High End Extended Fabric E-LTU	J4V63AAE (Physical License 313458-B21)
	HPE B-series Mid/High End SAN Switch Fabric Watch E-LTU	J4V62AAE (Physical License 313454-B21)
	HPE B-series Mid/High End SAN Switch Advanced Performance Monitoring E-LTU	J4V60AAE (Physical License - 313450-B21)
	HPE B-series Mid/High End SAN Switch ISL Trunking E-LTU	J4V61AAE (Physical License - 313452-B21)
	HPE B-series Integrated Routing E-LTU	T5528BAE
	HPE 8/40 and 1606 Extension SAN Switch FICON CUP E-LTU	TA748BAE

Configuration Information

NOTE: The FICON CUP support is contingent upon IBM certification. Please refer to The HPE B-Series FICON connectivity stream at HPE "Single Point of Connectivity Knowledge" (SPOCK) for the latest information.

NOTE: Most HPE B-series software licenses are now available through the Electronic Delivery (E-Delivery) mechanism. The E-Delivery software licenses with part numbers listed in this document are functionally equivalent to the corresponding physical licenses with different part numbers. Some software licenses in this document are represented by two part numbers, the first of which is the E-Delivery version (ending with AE) and the second is the physical version.

NOTE: HPE SAN Network Advisor software will no longer be shipped as a DVD to customers. Instead, customers will be able to access and download the software from The HPE Product Download web site.

Note: Universal Temporary Licenses (UTLs) are available for trial usage or to test select features before purchasing permanent licenses. These UTLs enable optional features on B-series Directors and Switches on a temporary basis for one-time usage. Additional information can be found at the following URL using your HPE Passport credentials:

https://h20392.www2.hpe.com/portal/swdepot/displayProductInfo.do?product Number=BROCADETRIAL

Technical Specifications

System Architecture	**Fibre Channel ports**	Switch mode (default): 24-, 36-, and 48-port configurations (12-port increments through Ports on Demand [PoD] licenses); universal (E, F, M, D, EX) ports
	Scalability	Full fabric architecture: **http://www.hpe.com/support/san-documentation**
	Certified maximum	Refer to **SAN Design Guide** for current configuration information.
	Interoperability	8/8 SAN Switch 8/24 SAN Switch 1606 Extension SAN Switch - SN4000B SAN Extension Switch - SN8000B 8-Slot SAN Backbone Director - SN8000B 4-Slot SAN Director - SN6500B Fibre Channel Switch - SN6000B Fibre Channel Switch - SN3000B Fibre Channel Switch - Brocade 8Gb SAN Switch for HPE BladeSystem c-Class - Brocade 16Gb SAN Switch for HPE BladeSystem c-Class - Brocade 16Gb Fibre Channel SAN Switch Module for HPE Synergy
	Performance	Auto-sensing of 4, 8, and 16 Gbps port speeds; 10 Gbps and optionally programmable to fixed port speed.
	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	768Gbit/sec
	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
	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+ (16/10/8 Gbit/sec) optical transceivers.
	USB	One USB port for system log file downloads or firmware upgrades
	Fabric services	Advanced Performance Monitoring (APM) (including Top Talkers for E_Ports, F_Ports, and Fabric mode); Adaptive Networking (Ingress Rate Limiting, Traffic Isolation, QoS); Bottleneck Detection; Advanced Zoning (default zoning, port/WWN zoning, broadcast zoning); Dynamic Fabric Provisioning (DFP); Dynamic Path Selection (DPS); Extended Fabrics; Enhanced BB credit recovery; Fabric Watch; FDMI; Frame Redirection; Frame-based Trunking; FSPF; Integrated Routing; IPoFC; ISL Trunking; Management Server; NPIV; NTP v3; Port Fencing; Registered State Change Notification (RSCN); Reliable Commit Service (RCS); Server Application Optimization (SAO); Simple Name Server (SNS); Virtual Fabrics (Logical Switch, Logical Fabric)
	Security	AES-GCM-256 encryption on ISLs; DH-CHAP (between switches and end devices), FCAP switch authentication; FIPS 140-2 L2-compliant, HTTPS, IPsec, IP filtering, LDAP with IPv6, Port Binding, RADIUS, User-defined Role-Based Access Control

Technical Specifications

		(RBAC), Secure Copy (SCP), Secure RPC, SFTP, SSH v2, SSL, Switch Binding, Trusted Switch.
	Extension	Fibre Channel, in-flight compression and encryption (AES-GCM-256); integrated 10 Gbps Fibre Channel for DWDM MAN connectivity
	Options	SFP media, USB Device
Management	**Management software supported**	HTTP, SNMP v1/v3 (FE MIB, FC Management MIB), SSH; Auditing, Syslog; Advanced Web Tools, APM, Fabric Watch; SAN Network Advisor Enterprise or SAN Network Advisor Professional/Professional Plus; Command Line Interface (CLI); SMI-S compliant; Administrative Domains; trial licenses for add-on capabilities
	Management access	10/100 Mbps Ethernet (RJ-45), in-band over Fibre Channel, serial port (RJ-45), and one USB port
	Diagnostics	D_Port offline diagnostics, including electrical/ optical loopback, link traffic/latency/distance; POST and embedded online/offline diagnostics, including environmental monitoring, FCping and Pathinfo (FC traceroute), frame viewer, non-disruptive daemon restart port mirroring (SPAN port), optics health monitoring, power monitoring, RAStrace logging, and Rolling Reboot Detection (RRD)
Mechanicals	**Enclosure**	Port side Intake and Port side Exhaust airflow models available; power from back; 1U
	Size	Width: 438 mm (17.23 in.) Height: 43 mm (1.7 in.) Depth: 443 mm (17.45 in.)
	System Weight	9.16 kg (20.20 lb) with two power supply FRUs, without transceivers
Environment	**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 11ms. 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**	Dual, hot-swappable redundant power supplies with integrated system cooling fans
	AC input	85 V to 264 V ~5 A to 2.5 A
	Input line frequency	47 Hz to 63 Hz
	Power Consumption	110 watts with all 48 ports populated with 16 Gbps SWL optics 72 watts for empty chassis with no optics

Summary of Changes

Date	Version History	Action	Description of Change
24-Oct-2018	Version 22	Changed	Overview, Product Highlights, Family Information, Service and Support, technical Specifications and Configuration Information sections were revised
23-Oct-2017	Version 21	Changed	Care Pack naming and Service and Support- Parts and Materials updated.
16-Dec-2016	Version 20	Added	Smartoptics was added
07-Jun-2016	Version 19	Changed	Changes made to the Models, overview, service and support and Family information sections.
22-Jan-2016	Version 18	Changed	Changes were made throughout the entire QuickSpecs.
24-Sept-2015	Version 17	Changed	Changes made the Technical Specs Section
04-Sep-2015	Version 16	Changed	Changes made the Products Highlights, Family Info, Configuration Info and Technical Specs Sections.
10-Jun-2014	Version 15	Changed	Product highlights and Configuration Information were revised.
23-May-2014	Version 14	Changed	Text formatted in Configuration Information section.
20-Dec-2013	Version 13	Added	HPE B-series 16b Long Wave 25km Fibre Channel SFP+ 1 Pack Fibre Channel Switches was added.
09-Dec-2013	Version 12	Changed	HPE SreFabric B-series 8Gb and 16Gb Mid Range Switch Fabric Vision LTU was added Software for SN6000B 16Gb FC Switch in Configuration Information HPE 8/40 SAN Switch and 8/40 SAN Switch Power Pack+ was removed from Family Information
15-Oct-2013	Version 11	Changed	Fabric Vision was added Product Highlights SN3000B and SN6500B Fibre Channel Switches were added Interoperability 2408 FCoE CN Switch and 2408 FCoe CN Switch Power Pack+ was removed from Family Information chart
30-Sep-2013	Version 10	Changed	Optional Software was revised.
22-Mar-2013	Version 9	Removed	Configuration Information- Removed part numbers and descriptions.
08-Mar-2013	Version 8	Changed	Family Information Updated Srage system support.
15- Feb-2012	Version 7	Changed	Changes made the Family Information Section.
21-Dec-2011	Version 6	Changed	Change made in Configuration Information: description update in Optical Cables.
04-Dec-2011	Version 5	Changed	Changes were made throughout the entire QuickSpecs.
13-Aug-2011	Version 4	Changed	Changes were made in Overview, Models, Product Highlights, Configuration Information and Technical Specifications sections.
14-Nov-2011	Version 3	Changed	HPE 16GB Long Wave B-series 10km FC SFP+ 1 Pack was added and HPE LC-SC Optical Cables were removed from Step 2 in Configuration Information.
28-Oct-2011	Version 2	Changed	Key Features and Benefits was revised in Features and Benefits SN6000B 16Gb FC Switch, Advanced Fabric Services, Integrated Fibre Channel Extension and SAN Network Advisor Professional were updated and In-flight Compression and Encryption were added Product Highlights Configuration Information was revised throughout Aggregate bandwidth and Media types were modified in System Architecture
26-Sep-2011	Version 1	New	New QuickSpecs

Summary of Changes