Overview

HPE 1606 Extension SAN Switch

IT organizations continue to face unprecedented data growth as more platforms, applications, and users connect to the data center network. In turn, the storage network infrastructure must continue evolving to enable fast, continuous, and most cost-effective access to mission-critical data from anywhere in the world.

To address this challenge, the HPE 1606 Extension SAN Switch helps provide fast, reliable, and cost-effective network infrastructure for remote data replication, backup, and migration. Leveraging next-generation Fibre Channel and advanced Fibre Channel over IP (FCIP) technology, the 1606 Extension SAN Switch provides a flexible and extensible platform to move more data faster and further than ever before.

Whether configured for simple point-to-point or comprehensive multisite SAN extension, the 1606 Extension SAN Switch addresses the most demanding business continuity, compliance, and global data access requirements. Up to sixteen 8 Gbps Fibre Channel ports and six 1 Gigabit Ethernet (GbE) ports provide unmatched Fibre Channel and FCIP bandwidth, port density, and throughput for maximum application performance over WAN links.

The 1606 Extension SAN Switch is available in three models:

- Power Pack+: 22 Total Ports (sixteen 8Gb FC and six 1GbE) and value add software
- Full: 22 Total Ports (sixteen 8Gb FC and six 1GbE)
- Base: 6 Total Ports (four 8Gb FC and two 1GbE)

The Base model is targeted for smaller environments such as the Small to Medium Enterprise (SME) and Enterprise Remote Office/Branch Office (ROBO), yet provides the ability to grow as the business demands equating to investment protection while also affording no disruption in service. Through an Upgrade Bundle all FC and GE ports on the system may be activated along with several complementary features that meet the needs of larger environments. Embracing a building block methodology for add-on features, the 1606 Extension SAN Switch provides the flexibility to custom tailor a solution to best meet the needs of customer's unique environment.

The 1606 Extension SAN Switch integrates a variety of best-in-class capabilities, such as Fibre Channel routing, Storage-Optimized TCP ("SO-TCP"), hardware-based compression, write and read acceleration for disk and tape, in-tunnel Quality of Service (QoS), IP Security ("IPsec") encryption, FCIP Trunking and Adaptive Rate Limiting to deliver a high-performance, highly reliable, and secure distance-connectivity solution. This makes the HPE 1606 Extension SAN Switch strategic for a variety of IT initiatives; including business continuance, site mirroring, replication, and data migration across virtually unlimited distances.

The 1606 Extension San Switch is fully compatible with the entire B-Series family of FC switching platforms, delivering advanced 8 Gbit/sec fabric services end-to-end over distance and providing investment protection for hardware as well as the ability to leverage expertise and training across the data center staff.



HPE 1606 Extension SAN Switch

Overview

What's New

- Updated product SKUs (suffix rollover from A to B)
- New 2016 RoHS compliant HPE SAN switches
- Updated HPE B-series Network Advisor SKUs to the next suffix (A to B) and added 3 Network Advisor E-LTU SKUs (suffix AE)

Notes: Restriction of Hazardous Substances Directive or RoHS is a directive adopted by the European Union that restricts the use of certain hazardous materials in the manufacture of various types of electronic and electrical equipment. The RoHS compliant products with new part numbers listed in this document are functionally equivalent to the corresponding products with old part numbers and are fully interchangeable.

Standard Features

Key Features

Maximize the Value of SANs

- FCIP Extension of Fibre Channel SANs provides connectivity over longer distances that would otherwise be technologically not possible, impractical, and too expensive with native Fibre Channel or when dark fiber resources are unavailable.
- Achieve bandwidth savings and higher bandwidth utilization via data compression by compressing FC frames before they are encapsulated into FCIP packets.
- Extensive diagnostics, system-monitoring capabilities, and performance monitoring (including extensive and granular TCP statistics graphing in Webtools).

Superior Performance

- TCP acceleration helps to overcome latency between source and target locations by adjusting the TCP window size and performing selective acknowledgements.
- Advanced Quality of Service (QoS) techniques can be used to prioritize traffic and guarantee that necessary bandwidth requirements are met.
- Key protocol features are enabled in the FCIP implementation to optimize performance of SAN extension over IP networks, including Storage-Optimized TCP.

Outstanding Scalability and operational flexibility

- FCIP Trunking feature allows multiple IP source and destination address pairs (defined as FCIP circuits) to provide high bandwidth FCIP tunnel and failover resiliency.
- Optional Adaptive Rate Limiting feature meets minimum bandwidth guarantee for each tunnel while allowing full utilization of the available network bandwidth without adverse impact to throughput performance during high traffic loads.
- Optional FC Routing delivers fabric isolation in conjunction with FCIP, enabling separate fabrics to share devices without merging across the IP network.

1606 Extension SAN Switch

- Up to 16 ports of auto-sensing 1Gb, 2Gb, 4Gb, and 8Gb Fibre Channel interfaces in a single 1U enclosure for seamless integration with existing B-series fabrics
- Up to 6 ports of 1 GBE to instantly extend connectivity between multiple SAN fabrics over distance. Two of the 6 GE ports can be configured for copper or optical cable connectivity. The other 4 GE ports offer cable connectivity via SFP module only

Configuration Support

The HPE 1606 Extension Switch is fully compatible with the B-series of FC switches and directors. For complete interoperability information please check:
https://support.hpe.com/hpsc/doc/public/display?docId=c00403562

FCIP Tunnels

The FCIP Tunneling Service enables organizations to extend their Fibre Channel SANs over distances that would be impractical or expensive with native Fibre Channel links, or in situations where dark fiber links would be impractical but in which IP WAN connectivity already exists. As a result, organizations have a more manageable way to share resources across geographical boundaries and implement reliable business continuance solutions. The tight integration also enables a unified architecture for connectivity across the MetaSAN, paving the way for future value-added SAN applications that extend their reach across the whole storage infrastructure.

This service also provides superior performance and scalability through hardware-based compression, combined with up to an industry leading eight virtual FCIP tunnels per 1606 Extension SAN Switch.

Standard Features

Multiple logical FCIP tunnels allow for scalable connectivity between sites. Note that FCIP tunnels between two 1606 Extension SAN Switches or a 1606 Extension Switch and a Multi Protocol Extension Blade for the DC SAN Directors (1GE) is supported. The 1606 Extension SAN Switch does not support FCIP connectivity with any other products including the B-series 400 MP Router and MP Router Blade.

Hardware Based Compression

Hardware-based compression delivers the ability to maximize throughput over lower bandwidth links in the wide area network, optimizing the cost efficiencies of FCIP. The 1606 Extension SAN Switch compresses FC frames before they are encapsulated into FCIP packets. When compressed FC frames are encapsulated, multiple frames can be batched together to form a bigger FCIP packet up to the MTU.

IPSec

Improved over the B-series 400 MP Router and MP Router Blade, the 1606 Extension SAN Switch IPSec function is capable of supporting both Ipv4 and Ipv6, mix of secure and non-secure tunnels on the same GE port, jumbo frames, and VLAN tagged connections.

Manageability

- B-Series Web Tools
- Enhanced Group Management (EGM)
- B-series SAN Network Advisor (sold separately)
- CLI
- Support for SMI-S based applications

Scalability

Refer to the guidelines described in the Heterogeneous Open SAN Design Reference Guide available at: **https://support.hpe.com/hpsc/doc/public/display?docId=c00403562**

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.

Notes: To order factory integration, add 0D1 after the part number on your sales order.

Software Components, Standard

WebTools

Enables organizations to monitor and manage single Fibre Channel switches or router in small 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.

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.

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 - SAN Network Advisor Professional, Professional Plus, or Enterprise.

FastWrite over FCIP

FastWrite over FCIP reduces the number of round-trip "waits" for Write I/O to one to mitigate the latency effect of a long distance FCIP link.

Standard Features

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 (SAO)

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

Software Components, Optional

1606 Base to Full Upgrade

This license enables full hardware capabilities on the 1606 Base Extension SAN Switch, increasing the number of Fibre Channel ports from four to sixteen and the number of Gigabit Ethernet ports from two to six. A 1606 Base Extension SAN Switch with the Upgrade License also supports up to eight FCIP tunnels instead of two and supports advanced capabilities such as tape read/write pipelining.

Tape pipelining is similar to FastWrite in that it reduces the number of round-trip time delays that the server must wait while writing to tape. In the case of Tape Pipelining, the FCIP ports act as a tape device (on the server side) and as a server (on the tape device side). I/O requests are initiated and acknowledged locally at both end of the link. The final Write Tape Mark command from the server is acknowledged only after all data has been written to the tape device.

Advanced Extension

Optional software license for the 1606 Extension SAN Switch which enables two advanced extension features: FCIP Trunking and Adaptive Rate Limiting.

- **FCIP Trunking**
  FCIP Trunking feature allows multiple IP source and destination address pairs (defined as FCIP circuits) via multiple of the 1 GE interfaces to provide high bandwidth FCIP tunnel and failover resiliency. In addition, each FCIP circuit supports four QoS classes (Class-F, Hi, Medium and Low Priority), each as a TCP connection.
- **Adaptive Rate Limiting**
  An FCIP tunnel can be configured a minimum (guaranteed) committed rate as well as a maximum committed rate. FCIP tunnel will run at least the minimum rate. If additional bandwidth is needed, the committed rate will grow until the channel traffic demand is satisfied, maximum committed rate is reached, or the throughput capabilities of the network are reached.
- **Adaptive Rate Limiting**
  Adaptive Rate Limiting dynamically adjusts shared bandwidth between guaranteed minimum rates and uncongested maximum rates for each FCIP circuit within a tunnel or trunk. This overcomes the problem of fixed provisioning of bandwidth that leads to over-provisioning and underutilization of bandwidth. Adaptive Rate Limiting enables applications to exceed guaranteed minimum rates when competing bandwidth is idle.

Standard Features

Integrated Routing

Integrated Routing is an optional license which provides native Fibre Channel Routing (FRC) on a per-port basis, rather than limiting routing ports to those on a dedicated routing blade or switch. 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.

FICON CUP

Optional software allows FICON Switching to provide Fibre Channel and FICON intermix, FICON Control Unit Port (CUP), and FICON cascading for more than one B-Series SAN Director in XP Storage Array environments. The license feature provides Control Unit Port (CUP) in-band management function designed to allow mainframe applications to perform configuration, monitoring, management and statistics collection. These applications include System Automation for OS/390 (SA/390), Dynamic Channel Management Facility (DCM) and Resource Management Facility (RMF). Hardware- enforced FICON and FCP port zoning enhances separation with intermix operation.

Power Pack + Software Bundle

The Power Pack+ Software Bundle comes with the 1606 Extension SAN Switch Power Pack+ or as an optional software bundle for the 1606 Extension SAN Switch base and full models. It includes the following:

- Fabric Vision
- Fabric Watch
- Advanced Performance Monitor
- Extended Fabric
- ISL Trunking

Notes: Starting with FOS 7.4.0a, Fabric Watch and Advanced Performance Monitor are replaced by MAPS and Flow Vision respectively. Both are included in Fabric Vision.

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: 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 B-series Fibre Channel switches and Directors bundled with Power Pack+ (with FOS 7.2.0a and later). In all other cases, Fabric Vision can be enabled on HPE B-series Fibre Channel switches and Directors in any one of the following ways

- Application of the Fabric Vision LTU (FOS 7.2.0a and later)
- Application of the Power Pack+ LTU (FOS 7.2.0a and later)
- Upgrading existing Switch/Director loaded with Power Pack+ to FOS 7.2.0a or later
- Upgrading existing Switch/Director loaded with both Advanced Performance Monitor (APM) and Fabric Watch (FW) licenses to FOS 7.2.0a or later

Standard Features

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

Advanced Performance Monitoring
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.
Notes: Advanced Performance Monitoring has been obsoleted in FOS 7.4.0 and later. Users can utilize the Fabrci 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 four E-ports to provide a high bandwidth trunk between two switches. Each 8Gb switch needs its own license. The switch operating system views the trunk as a single, high bandwidth resource (up to 64Gb) when routing connections between 8G 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 management application available at no-charge and comes with B-series SAN Switches and:

- Allows management of up to two Fabric OS (FOS) fabrics (up to a 300 switch ports and 1000 devices) at a time
- 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 fabrics.

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 as well as FOS and M-EOS products together. SAN Network Advisor Enterprise provides complete SN8000B 8-Slot Director and DC SAN Backbone Director management including enterprise-Class features/environments such as FICON, Fibre Channel Routing, FCIP, adaptive networking, etc while HPE SAN Network Advisor Professional+ provides the same feature set except for support for the SN8000B 8-Slot Director, DC SAN Backbone Director, and FICON.

HPE SAN Network Advisor Enterprise delivers unprecedented scalability, up to 100 fabrics and 15,000 switch ports, while HPE 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.

Both offerings provide brand-new features including Adaptive Networking features for quality of service, ingress rate limiting and traffic isolation zones.

Standard Features

HPE Smart SAN for 3PAR

.HPE Smart SAN, optional software for HP 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 3PAR arrays to orchestrate configuration, settings and policies across the SAN. Smart SAN is only supported with B-series Switches, HPE 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:
https://www.hpe.com/us/en/product-catalog/storage/storage-software/pip.hpe-smart-san-for-3par.8295863.html

Notes:

- Supports B-series Brocade 16/8Gb FC switches with FOS 7.4.0a or later.
- A list of supported HPE FC Adapters can be found at **http://www.hpe.com/storage/spock**
- 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 - One-year on-site warranty, 8x5, next business day response, installation not included.
Notes: The hardware warranty covers firmware and embedded non-saleable software.
Saleable software carries its own warranty, see below.
Software Warranty - Hewlett Packard Enterprise warrants only that the software media will be free of physical defects for a period of ninety (90) days from delivery.

Notes: Exclusive remedy the entire liability of Hewlett Packard Enterprise and its suppliers and your exclusive remedy for software that does not conform to this Limited Warranty shall be the repair or replacement of the defective media. This warranty and remedy are subject to your returning the defective media during the warranty period to Hewlett Packard Enterprise in the country in which you obtained the software.

For bundled Software Support

Your HPE storage product includes comprehensive support and software updates to enhance the performance and availability of your software. Experienced Response Center engineers provide trustworthy advice on issues such as software features and use, problem diagnosis and resolution, and software defect identification.
Software support benefits include:

- Improved productivity of system managers and operators
- Improved system performance and reduced downtime due to software defects
- Expedited problem resolution through expert-level technical resources
- Software and documentation updates
- Electronic access to essential product and support information

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**

Service and Support

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 Hewlett Packard Enterprise. This Service combines three years' proactive reporting and advice with our highest level of hardware support - The Hewlett Packard Enterprise 24x7, six hour hardware call-to-repair. Hewlett Packard Enterprise 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

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 Hewlett Packard Enterprise. 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**

Notes: *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 Hewlett Packard Enterprise 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 Hewlett Packard Enterprise your first call to help resolve hardware or software problems.
https://www.hpe.com/h20195/v2/GetPDF.aspx/4AA4-8876ENW

Related Services

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

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
http://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.

Service and Support

Parts and Material

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.

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 HPE experts, access support resources or collaborate with peers. Learn more **http://www.hpe.com/support/hpesc**

HPE's 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.

For more information

http://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 HPE 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/**

Configuration Information

Step 1 – Base Configuration and Power Pack (Select one)

Description **SKU**

HPE 1606 Power Pack+ Extension SAN Switch

HPE 1606 FCIP 16-port Enabled 8Gb FC 6-port Enabled 1GbE Power Pack+ Switch AP864D

22 ports (16 8Gb Fibre Channel and 6 1Gigabit Ethernet) Extension switch for Fibre Channel over Internet Protocol (FCIP) traffic forwarding over IP wide area networks (WAN). Includes rack mount kit, advanced zoning, web tools, Adaptive Networking, Advanced Performance Monitor, Fabric Watch, ISL Trunking, Extended Fabrics, and Server Application Optimization.

Notes: Fibre Channel ports require optical transceivers listed below. Ethernet ports require optical or copper transceivers listed below.

HPE 1606 Base to Full Upgrade

HPE 1606 Switch Base to Full Upgrade E-LTU TA746BAE

Optional software license for 1606 Base Extension SAN Switch to activate additional 16 ports (12 8Gb Fibre Channel and 4 1Gigabit Ethernet)

Notes: Some HPE B-series software licenses are now available through the Electronic Delivery (E-Delivery) mechanism. The E-Delivery software licenses with new 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.

Step 2 – Options

8 Gb Transceivers

Distance- Maximum	OM3 Cable	PremierFlex Cable
8Gb performance:	150 meters	150 meters
4Gb performance:	380 meters	380 meters
2Gb performance:	500 meters	500 meters

HPE B-series 8Gb Long Wave 10km Fibre Channel 1 Pack SFP+ Transceiver AJ717A

HPE B-series 8Gb Shortwave Fibre Channel 1 Pack SFP+ Transceiver AJ716B

Notes: Compatible with the 1606 Extension SAN Switch 1Gb Ethernet ports.

Distance- Maximum	OM3 Cable	PremierFlex Cable
4Gb performance:	380 meters	380 meters
2Gb performance:	500 meters	500 meters
1Gb performance:	860 meters	860 meters

Copper Transceivers

Optical Cables

HPE B-series 1Gb Ethernet Copper SFP 1 Pack Transceiver AW537A

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

Configuration Information

Description	SKU
OM3 LC-LC type 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
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
Accessories	
HPE B-Series Switch Rack-Mount Kit	A7511A
HP B-Series Switch Rack-Mount Kit	

Notes: When any of the switch models listed above is ordered, an accessory kit which contains the Rack Mount Kit is included in the package by default. A7511A is required only when the original accessory kit or Rack Mount Kit is unavailable.

Step 3 - Optional Software*

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

Optional Software

HPE B-series Mid Range Switch Power Pack+ E-LTU	T5522BAE
• (Physical License - T5522B)	

Notes:

- The Power Pack+ Software Bundle kit includes Fabric Vision, Fabric Watch, ISL Trunking, Extended Fabric and Advanced Performance Monitor
- Adaptive Networking and Server Application Optimization features are included by default in the switch firmware (FOS 7.2.0a or later) and do not require a separate license

HPE SAN Extension Switch Fabric Vision E-LTU	TC512AAE
• (Physical License - TC512A)	
HPE 1606 Extension SAN Switch Integrated Routing E-LTU	TA750BAE
HPE 1606 Extension SAN Switch Advanced Ext E-LTU	TA747BAE
HPE 8/40 and 1606 Extension SAN Switch FICON CUP E-LTU	TA748BAE

Notes: The FICON CUP accelerator 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.

HPE B-series Mid/High End Extended Fabric E-LTU	J4V63AAE
• (Physical License – J4V63A)	
HPE B-series Mid/High End SAN Switch Fabric Watch E-LTU	J4V62AAE
•	
HPE B-series Mid/High End SAN Switch Advanced Performance Monitoring E-LTU	J4V60AAE
•	
HPE B-series Mid/High End SAN Switch ISL Trunking E-LTU	J4V61AAE
• (Physical License - 313452-B21)	

Configuration Information

Notes:

- Some HPE B-series software licenses are now available through the Electronic Delivery (E-Delivery) mechanism. The E-Delivery software licenses with new 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.
- 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.
- 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?productNumber=BROCADETRIAL

Fibre Channel Standards And Revisions

- FC-FG Rev 3.5
- FC-PH-2 Rev 7.4
- FC-AL-2 Rev. 7.0
- FC-AL Rev. 4.5
- FC-GS-2 Rev 5.3
- FC-PH Rev 4.3
- FC-FLA Rev 2.7
- FC-PH-3 Rev 9.4
- FC-PLDA Rev 2.1
- FC-SW Rev 3.3
- FC-VI Rev 1.5
- IPFC RFC 2625

Technical Specifications

Features	SN8000B 8-Slot SAN Director Power Pack+	SN8000B 4-Slot SAN Director and 4-Slot SAN Director Power Pack+	SN8600B 8-Slot SAN Director Power Pack+	SN8600B 4-slot SAN Director Power Pack+
Targeted Environment	Cloud Optimized Data Centers	Cloud Optimized Data Centers	Cloud Optimized Data Centers	Cloud Optimized Data Centers
Port Bandwidth	Up to 16Gbit/sec	Up to 16Gbit/sec	Up to 32 Gbps	Up to 32Gbps
Aggregate device bandwidth	10.2 Tbit/sec	5.1 Tbit/sec	20.48 Tbps	10.24 Tbps
OS Support	**Notes:** Please Refer to SAN Design Guide **https://h20566.www2.hpe.com/hpsc/doc/public/display?docId=c00403562**			
Storage system support	**3PAR StoreServ, StoreVirtual 4000, P9000/XP, P6000/EVA, P2000/MSA**			
Ports	Up to 512 SFP	Up to 256 SFP	512 32 Gbps ports or a 640-port equivalent with 128 Gbps (32 Gbps×4 QSFP ports)	Up to 256 32 Gbps ports or a 320-port equivalent with 16 ICL ports.
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
Adaptive Networking	Included	Included	Included	Included
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

Technical Specifications

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	**Notes:** 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)
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)

Technical Specifications

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	**Notes:** 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)

Technical Specifications

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	**Notes:** 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

Technical Specifications

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	16Gbit/sec	8Gbit/sec	16 Gbit/sec
Aggregate device bandwidth	448 Gbit/sec (24 ports x 16Gb/s)	192 Gbit/sec	576 Gb/s (36 ports x 16 Gb/s)
OS Support	**Notes:** Please Refer to SAN Design Guide **https://h20566.www2.hpe.com/hpsc/doc/public/display?docId=c00403562**		
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

Technical Specifications

System Architecture

Ports	22 ports: 16 Fibre Channel (E, F, M, FL, EX) and 6 Gigabit Ethernet (VE,)
B-series switch interoperability	• 4/8 SAN Switch • 4/16 SAN Switch • 4/32 SAN Switch • 4/32B SAN Switch • 4/64 SAN Switch • Core Switch 4/64 • SAN Director 4/256 • DC SAN Director • DC04 SAN Director • MSA SAN Switch 2/8 • 8/8 SAN Switch • 8/24 SAN Switch • 8/40 SAN Switch • 8/80 SAN Switch • Encryption SAN Switch • 1606 Extension SAN Switch • 2408 FCoE Converged Network Switch • Brocade 8Gb SAN Switch for HPE BladeSystem c-Class • Brocade 4Gb SAN Switch for c-class HPE BladeSystem • 400 MP Router • B-Series MP Router Blade • SN8000B Director Switches • SN6000B Fibre Channel Switch
Performance	Fibre Channel: 1.063 Gbps line speed, full duplex; 2.125 Gbps line speed, full duplex; 4.25 Gbps line speed, full duplex; 8.5 Gbps line speed, full duplex. Auto-sensing of 1 Gbps, 2 Gbps, 4 Gbps, and 8 Gbps port speeds; optionally programmable to fixed port speed. Speed matching between 1 Gbps, 2 Gbps, 4 Gbps, and 8 Gbps ports. FCIP Performance: 1Gbps line speed
ISL Trunking	Up to eight 8 Gbps ports per ISL trunk; up to 64 Gbps per ISL trunk. There is no limit to how many trunk groups can be configured in the switch.
Fibre Channel aggregate bandwidth	128 Gbps: 16 ports at 8 Gbps (half duplex)
FCIP aggregate bandwidth	6 Gbps: 6 ports at 1 Gbps (data rate)
Fabric latency	700 ns with no contention, cut-through routing at 8 Gbps
Maximum frame size	2112-byte payload
Maximum MTU size	1500-byte Ethernet packets with FCIP
Classes of service	Class 2, Class 3, Class F (inter-switch frames)
Port types	FL_Port, F_Port, E_Port, Ex_Port, M_Port (Mirror Port), and self-discovery based on switch type (U_Port). For FCIP, VE_Port (Virtual E_Port).
Data traffic types	Fabric switches supporting unicast, multicast (255 groups), and broadcast

Technical Specifications

USB	One USB port for system log file downloads or firmware upgrades	
Media types	Fibre Channel: B-Series hot-pluggable Small Form Factor Pluggable (SFP) and SFP+, LC connector; Short-Wave Laser (SWL) and Long-Wave Laser (LWL); distance depends on fiber-optic cable and port speed; supports SFP+ (2, 4, and 8 Gbps) and SFP (1, 2, and 4 Gbps) optical and copper transceivers	
Fabric services	B-Series Advanced Zoning, Dynamic Path Selection (DPS), FDMI, Enhanced Group Management (EGM), Frame Redirection, Registered State Change Notification (RSCN), Reliable Commit Service (RCS), and Simple Name Server (SNS). Optional fabric services include Advanced Performance Monitoring, Adaptive Networking, Fabric Watch, Integrated Routing, and ISL Trunking.	
Licensing options	The following optional extension features can be enabled via license keys: • Advanced Extension: Enables FCIP Trunking and Adaptive Rate Limiting • 1606 Base to Full Upgrade License: Enables all ports, additional FCIP tunnels, and tape read/write pipelining The following options are available for the 1606 Extension SAN Switch Full and Power Pack+ or 1606 Base Extension SAN Switch with the Upgrade License: • FICON Management Server: Control Unit Port (CUP) enables host control of switches in mainframe environments	
Management	**Supported management software**	SSH v2, HTTP/HTTPS, SNMP v1/v3, Telnet; SNMP (FE MIB, FC Management MIB); Web Tools; SAN Network Advisor Professional, Professional Plus, and Enterprise (optional); SMI-S, RADIUS, LDAP
	Security	DH-CHAP (between switches and end devices), HTTPS, IPsec, IP Filtering, LDAP, Port Binding, RADIUS, Role-Based Access Control (RBAC), Secure Copy (SCP), Secure RPC, SSH v2, SSL, Switch Binding, Trusted Switch
	Management access	10/100/1000 Ethernet (RJ-45), in-band over Fibre Channel ports; serial port (RJ-45) and one USB port
	Diagnostics	POST and embedded online/offline diagnostics, including FCping, Pathinfo (FCtraceroute), etc.
Mechanical	**Enclosure**	Back-to-front airflow; 1U, 19-inch EIA-compliant, power from back
	Size	Width: 43.2 cm (17.0 in) Height: 4.5 cm (1.8 in) Depth: 64.1 cm (25.2 in)
	System weight	10.9 kg (24.0 lbs) with two power supplies, without SFP/SFP+
Environmental	**Temperature**	Operating: 0°C to 40°C (32°F to 104°F) Non-operating: -25°C to 70°C (-13°F to 158°F)
	Humidity	Operating: 10% to 85% (non-condensing) Non-operating: 10% to 90% (non-condensing)
	Altitude	Operating: Up to 3000 m (9842 ft) Storage: Up to 12 km (39,370 ft)
	Shock	Operating: 20 g, 6 ms, half-sine Non-operating: 33 g, 11 ms, half-sine, 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
	Heat dissipation	Maximum 22 ports: 590 BTU/hr
	Airflow	Maximum 60 CFM; nominal 44 CFM

Technical Specifications

Power	**Power supply**	Dual hot-swappable redundant power supplies
	Power inlet	C13
	Input voltage	85 to 264 VAC nominal
	Input line frequency	47 to 63 Hz
	Inrush current	Maximum of 60 amps for period of 10 to 150 ms
	Power	Nominal 145 watts; maximum 173 watts

Summary of Changes

Date	Version History	Action	Description of Change
05-Oct-2020	Version 26	Changed	Updated physical software licenses
03-Aug-2020	Version 25	Changed	QuickSpecs layout was updated and Branding Refresh was applied.
01-Oct-2018	Version 24	Changed	Overview, Product Highlights, HPE Support Services, Family Information, Configuration Information and Warranty Information sections were updated. SKUs were updated
07-Jun-2016	Version 23	Changed	Updated SAN Network Advisor SKU/E-LTU and Smart SAN details
08-Apr-2016	Version 22	Changed	Changed made to the Services Section
16-Feb-2016	Version 21	Changed	Content updated on the entire document.
18-Dec-2014	Version 20	Changed	Updated EOL 8/80 section and encrypted and added Optic AJ716B
23-May-2014	Version 19	Changed	Text formatted in Configuration Information section.
28-Feb-2014	Version 18	Changed	Updated the following: added to Step 2, Additional Options A7511A, HPE B-Series Switch Rack Mount Kit and NOTE
09-Dec-2013	Version 17	Changed	Configuration Information was revised HPE 8/40 SAN Switch and 8/40 SAN Switch Power Pack+ was removed from Family Information
15-Oct-2013	Version 16	Changed	Fabric Vision was added to Product Highlights 2408 FCoE CN Switch and 2408 FCoe CN Switch Power Pack+ was removed from Family Information chart
22-Mar-2013	Version 15	Changed	Configuration Information: Updated Optical Cables section.
08-Mar-2013	Version 14	Changed	Family Information: Updated Storage system support sections.
12-Oct-2012	Version 13	Changed	Change made to URL in Service and Support, HPE Pointnext operational, and Warranty Information section.
05-Oct-2012	Version 12	Changed	Change made in the Product Highlights section only.
13-Aug-2012	Version 11	Changed	Changes were made in Overview, Product Highlights and Configuration Information sections.
25-May-2012	Version 10	Changed	Updated the following: Additional Options added AJ816B
06-Apr-2012	Version 9	Changed	Cabinet Support was revised.
26-Sep-2011	Version 8	Changed	Revised the Family Information section.
09-Jun-2011	Version 7	Changed	Manageability, EGM, SAN Network Advisor Professional and SAN Network Advisor Enterprise and Professional + were revised in Product Highlights Step 3 was changed in Configuration Information Supported management software Management was revised in System Architecture
	Version 6	Removed	Removed "StorageWorks" throughout the document.
29-Oct-2010	Version 5	Changed	Minor edit was made to 1060 Extension SAN Switch in Product Highlights.
27-Sep-2010	Version 4	Added	PremierFlex Cable was added to Step 2.
29-Mar-2010	Version 3	Added	HPE StorageWorks B-Series DCFM Professional Plus Upgrade LTU, HPE 40 SAN Switch FICON CUP LTU and HPE 1606 Switch FICON CUP Accelerator LTU were added to Optional Software.
04-Dec-2009	Version 2	Changed	Changes were made throughout the QuickSpecs, except in the Service and Support, HPE Pointnext operational and Warranty Information section.
14-Sep-2014	Version 1	New	New QuickSpecs

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