Overview

HPE B-series SN6700B Fibre Channel Switch

64Gb Fibre Channel is the modern storage network infrastructure for mission-critical storage, enabling organizations to realize a self-learning, self-optimizing, and self-healing autonomous SAN. It combines powerful analytics and advanced automation capabilities to accelerate data access, adapt to evolving requirements, and drive always-on business operations. The 64GbHPE SN6700B Fibre Channel switch with ultra-low latency and unmatched 64Gbps performance is a building block for modern infrastructures that simplifies deployment, configuration, and management of SAN resources in medium to large environments

With the growing adoption of flash storage and the ramp-up of NVMe-based storage, organizations will move more data through a SAN than ever before, requiring additional I/O capacity to keep up with ever-increasing demand. Coupled with rising complexity and higher expectations for availability, organizations need a network that is capable of maximizing performance and reducing latency, while simplifying and automating management. These capabilities are required to help enterprises increase the productivity and efficiency of their storage investments and resources

To meet these requirements, the network needs to evolve. HPE B-series 64GbpFibre Channel infrastructure unleashes the performance of NVMe workloads with reduced latency and increased bandwidth. In addition, this infrastructure lays the foundation for an autonomous SAN by combining powerful analytics and advanced automation capabilities to maximize performance and ensure reliability. Autonomous SAN technologies enable organizations to realize a self-learning, self-optimizing, and self-healing SAN.

The HPE SN6700B Fibre Channel Switch, with unmatched 64Gbps performance and industry leading port density, provides a building block that supports data growth, demanding workloads, and data-center consolidation. With a 50% latency reduction compared to the previous generation, the SN6700B Switch enables the maximum performance of NVMe storage.

The HPE SN6700B Fibre Channel Switch utilizes built-in analytics to optimize performance and eliminate disruptions. This switch collects comprehensive telemetry data across the fabric to enable advanced analytics. HPE SANnav Management Portal enables organizations to easily visualize and understand the health and performance of the SAN. By leveraging automation, SAN admins gain the ability to automate repetitive tasks to save time and mitigate disruptions.

The HPE SN6700B Fibre Channel Switch simplifies deployment, configuration, and management of SAN resources with a collection of easy-to-use tools. With EZSwitchSetup, organizations can reduce the number of steps to deploy and configure a switch. In addition, the simplified user interface of Web Tools makes the SAN easier to manage. To further simplify operations and increase visibility, the SN6700B includes HPE B-series Fabric Vision technology to monitor and analyze the SAN. This technology provides actionable insights to quickly identify problems and meet critical service-level agreements (SLAs). To streamline management workflows, organizations can also leverage SANnav Management Portal to accelerate the deployment of new applications, switches, servers, and storage. Furthermore, a modernized graphical user interface (GUI) improves operational efficiencies with visual dashboards for instant visibility and faster troubleshooting.

The HPE SN6700B Fibre Channel Switch meets the demands of hyper-scale virtualization, larger cloud infrastructures, and growing flash storage-based IT environments by delivering market-leading 64Gbps Fibre Channel technology. It provides a high-density foundation for increased scalability, designed to support growth, demanding workloads, and data center consolidation in medium to large-scale enterprise infrastructures. . It is built for maximum flexibility, scalability, and ease of use. Organizations can scale from 24 to 56 ports in an efficient 1U form factor that delivers industry-leading port density and space utilization. It also provides a simplified deployment process and a point-and-click user interface-making it both powerful and easy to use. With the HPE SN6700B Fibre Channel Switch, organizations gain the best of both worlds: high-performance access to industry-leading storage technology and “pay-as-you-grow” scalability to support an evolving storage environment.

Overview

The SN6700B is available in two airflow options bundled with either 24 32Gbps or 24 64Gbps Secure Short Wave Transceivers:

- HPE SN6700B 64Gbps 56/24 24-port 32Gbps Short Wave SFP28 Integrated Fibre Channel Switch
- HPE SN6700B 64Gbps 56/24 24-port 32Gbps Short Wave SFP28 Port Side Intake Integrated FC Switch
- HPE SN6700B 64Gbps 56/24 24-port 64Gbps Short Wave SFP56 Integrated Fibre Channel Switch
- HPE SN6700B 64Gbps 56/24 24-port 64Gbps Short Wave SFP56 Port Side Intake Integrated FC Switch

All offerings include the software features of Power Pack+: Fabric Vision and IO Insight, ISL Trunking, Extended Fabric, FICON CUP and Integrated Routing

HPE B-series SN6700B Fibre Channel Switch

Models

Description	SKU
HPE SN6700B 64Gbps FC Switch with 32Gbps Short Wave Transceivers	
HPE SN6700B 64Gb 56/24 24-port 32Gb Short Wave SFP28 Integrated Fibre Channel Switch	R6B05A
HPE SN6700B 64Gb 56/24 24-port 32Gb Short Wave SFP28 Port Side Intake Integrated FC Switch	R6B06A
HPE SN6700B 64Gbps FC Switch with 64Gbps Short Wave Transceivers	
HPE SN6700B 64Gb 56/24 24-port 64Gb Short Wave SFP56 Fibre Channel Switch	R7M13A
HPE SN6700B 64Gb 56/24 24-port 64Gb Short Wave SFP56 Port Side Intake Integrated FC Switch	R7M14A

Standard Features

Key Features and Benefits

- Delivers 64Gbps performance with up to 56 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 56 ports in 8-port increments. PoD upgrades are available in 8-port upgrade kits, including both the license and 8 optics under one part number.
- HPE SN6700B is available in two airflow configurations both bundled with 32Gbps Secure transceivers providing flexibility to customers.
- Accelerate critical workloads with 64Gbps links
- Maximize performance of NVMe storage with 50% lower switching latency than 32Gb
- Simplify troubleshooting by identifying and isolating issues
- Collect comprehensive telemetry data across the fabric to enable powerful analytics
- Visualize the data to easily understand the health and performance of the SAN
- Automate repetitive tasks to save time and eliminate human error
- Support high-density server virtualization, cloud architectures and flash-based storage environments
- Provides proactive, non-intrusive, and real-time monitoring and alerting of SAN health and performance with IO Insight (IO Insight takes advantage of the industry's first integrated network sensors)
- Increases resiliency by automatically discovering and recovering from device or network errors
- Simplifies troubleshooting with real-time and historical visibility in a single dashboard
- Provides a flexible, simple, and easy-to-use SAN solution with industry-leading technology
- Supports highly virtualized, flash 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
- In-flight encryption (FOS 8.2.0 onwards) and compression included, ensuring efficient link utilization.
- Yields exceptional price/performance value, exceeding comparable Ethernet storage-based alternatives
- Congestion Notification that detects and corrects congestion, link integrity and delivery issues providing the self-healing benefits of the autonomous SAN.

The combination of SAN analytics and automation technologies unlocks the capabilities to deliver a self-learning, self-optimizing, and self-healing autonomous SAN.

Self-Learning

- Gather and transform millions of data points into network intelligence
- Visualize application and device-based performance and health metrics
- Detect abnormal traffic behaviors and performance degradation
- Eliminate operational steps by automatically learning application flows

Self-Optimizing

- Optimize critical application performance by automatically prioritizing traffic
- Maximize application performance by proactively monitoring and actively shaping traffic
- Eliminate human errors and performance impacts through open DevOps automation technology
- Optimize administrative resources with cloud-like SAN orchestration

Self-Healing

- Instantly notify end devices of congestion for automatic resolution
- Ensure data delivery with automatic failover from physical or congestion issues
- Detect and automatically reconfigure out-of-compliance fabrics
- Eliminate performance impacts by automatically taking corrective action on misbehaving devices

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Standard Features

SN6700B 64Gbps FC Switch

- Simplifies enterprise SAN deployment by combining higher edge switch port density with exceptional scalability, performance, and reliability
- Delivers 24, 32, 40, 48 or 56-ports in a 1U enclosure
- Provides 8, 10, 16, 32 and 64Gbps* 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 64Gbps switches up to 512Gbps

Notes:* 64Gbps performance can be obtained between two 64Gbps capable devices.

Configuration Support

https://support.hpe.com/hpsc/doc/public/display?docId=c00403562

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/ Encryption
- Access Gateway
- Dynamic and System Monitoring Capabilities for High Reliability
- Virtual Fabrics

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.

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

Hardware and Software Features on Standard 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.

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.

Standard Features

In-flight Encryption

In-flight encryption provides security for frames while they are in flight between two switches. This allows frames to be encrypted at the egress point of an ISL between two B-series switches, and then to be decrypted at the ingress point of the ISL. This can be enabled (FOS 8.2.0 and above) for both E_Ports and EX_Ports on a per-port basis and no additional license is required.

In-flight Compression

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.

Congestion Notification

Introduced in Fabric OS v9.0 Fabric Congestion Notification is a built-in feature that detects congestion, link integrity and delivery issues with automatic notification to end devices. Fabric OS or the end device may then mitigate and recover from the condition without user interaction providing the self-healing benefits of the autonomous SAN.

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.

Software Components

SN6700B 64Gbps Switch

Both of the SN6700B offerings include the software features traditionally associated with the Power Pack+ Software Bundle. This includes the following**:**

- Fabric Vision and IO Insight
- Extended Fabric
- ISL Trunking
- Integrated Routing
- Ficon CUP ISL Trunking

Fabric Vision and IO Insight

Fabric Vision technology provides a breakthrough hardware and software solution that helps simplify monitoring, maximize network availability, and dramatically reduce costs. Featuring innovative monitoring, management, and diagnostic capabilities, Fabric Vision technology enables administrators to avoid problems before they impact operations, helping their organizations meet SLAs. It Includes

- IO Insight: Proactively and non-intrusively monitors storage device IO performance and behavior through integrated network sensors at the storage tier, providing deep insight into problems and ensuring service levels
- 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. Configuration and Operational Monitoring Policy Automation Services Suite (COMPASS): Simplifies deployment, safeguards consistency, and increases operational efficiencies of larger environments with automated switch and fabric configuration services. Administrators can configure a template or adopt an existing configuration to seamlessly deploy a configuration across the fabric.

Standard Features

- ClearLink Diagnostics: Ensures optical and signal integrity for Fibre Channel optics and cables, simplifying deployment and support of high-performance fabrics. ClearLink Diagnostic Port (D_Port) is an advanced capability of Fibre Channel platforms
- Flow Vision: A comprehensive tool that enables administrators to identify, monitor, and analyze specific application data flows in order to simplify troubleshooting, maximize performance and avoid congestion without using taps to ensure optimized performance
- Health and performance dashboard: A single customizable screen displayed in HPE SANnav Management Portal that contains all critical SAN information for convenient review and analysis

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 32 Gbps ports per ISL trunk or up to two 128 Gbps QSFP ports per ISL trunk to provide a high bandwidth trunk between two switches. Each 32Gb switch needs its own license. The switch operating system views the trunk as a single, high bandwidth resource (up to 256Gb) when routing connections between 32Gb switches. Connections are load-balanced across the individual links, which comprise the logical trunk group.

Integrated Routing

Integrated Routing is an included 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. 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..

CUP

FICON CUP is an included license which enables host control of switches in mainframe environments. FICON Accelerator is an optional software license that increases the speed of FICON disk and tape read and writes, while maintaining the integrity of command and acknowledgement sequences.

HPE SANnav Management Software

HPE SANnav Management Software is the next-generation SAN management application suite for HPE B-series SAN environments. It consists of SANnav Management Portal Software and SANnav Global View Software:

- SANnav Management Portal is a next-generation SAN management application with a simple browser-based user interface (UI) streamlining common workflows, such as configuration, zoning, deployment, troubleshooting, and reporting.
- SANnav Global View helps administrators visualize the health, performance and inventory of multiple SANnav Management Portal instances at data centers across the globe or a single multi-tenant data center using a simple, intelligent dashboard.

SANnav Management Portal and SANnav Global View not only transform SAN telemetry data into useful insights, such as health and performance scores, but also enable administrators to quickly associate real-time data with historical metrics and logs for in-depth analysis. This can help with spotting trends, establishing baselines, and identifying any behavioral changes over time.

HPE SANnav Management Software is available as a term-license for 1-year, 3-years and 5-years period as both – physical and electronic License-to-Use (LTU). It supports 8Gbps, 16Gbps and 32Gbps FC Switches and Directors.

Standard Features

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 3PAR arrays to orchestrate configuration, settings and policies across the SAN. Smart SAN is 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.

Notes:

- Supports B-series 64Gbps, 32Gbps, 16Gbps and 8Gbps FC switches.
- 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 16Gbps target ports on HPE 3PAR StoreServ storage.

Service and Support

Warranty

Switch Warranty

(3-3-3) Hardware Warranty; 3-year parts; 3-year on-site (standard business hours, next business day response) and 3-year labor.

Notes:

- All other miscellaneous hardware not explicitly identified above such as POD Kits, optics and cables have a (1-1-1) hardware warranty - 1-year parts; 1-year on-site (standard business hours, next business day response) and 1-year labor.
- The hardware warranty covers firmware and embedded non-saleable software. For extended hardware installation and maintenance information, click the link below: **https://ssc.hpe.com**.
- 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.

HPE Pointnext - Service and Support

Get the most from your HPE Products. Get the expertise you need at every step of your IT journey with **HPE Pointnext Services**. We help you lower your risks and overall costs using automation and methodologies that have been tested and refined by HPE experts through thousands of deployments globally. HPE Pointnext **Advisory Services**, focus on your business outcomes and goals, partnering with you to design your transformation and build a roadmap tuned to your unique challenges. Our **Professional** and **Operational Services** can be leveraged to speed up time-to-production, boost performance and accelerate your business. HPE Pointnext specializes in flawless and on-time implementation, on-budget execution, and creative configurations that get the most out of software and hardware alike.

Consume IT on your terms

HPE GreenLake brings the cloud experience directly to your apps and data wherever they are—the edge, colocations, or your data center. It delivers cloud services for on-premises IT infrastructure specifically tailored to your most demanding workloads. With a pay-per-use, scalable, point-and-click self-service experience that is managed for you, HPE GreenLake accelerates digital transformation in a distributed, edge-to-cloud world.

- Get Faster time to market.
- Save on TCO, align costs to business
- Scale quickly, meet unpredictable demand
- Simplify IT operations across your data centers and clouds

Managed services to run your IT operations

HPE GreenLake Management Services provides services that monitor, operate, and optimize your infrastructure and applications, delivered consistently and globally to give you unified control and let you focus on innovation.

Free up resources with Operational Services from HPE Pointnext Services

HPE delivers services for IT by using proven best practices as well as automation and methodologies that have been tested and refined by HPE experts and artificial intelligence through thousands of deployments globally. Choose from the recommended services for customers purchasing from Hewlett Packard Enterprise or an authorized reseller. Services are quoted using Hewlett Packard Enterprise order configuration tools.

Service and Support

Recommended Services

HPE Pointnext Tech Care.
HPE Pointnext Tech Care is the new operational service experience for HPE products. Tech Care goes beyond traditional support by providing access to product specific experts, an AI driven digital experience, and general technical guidance to not only reduce risk but constantly search for ways to do things better. HPE Pointnext Tech Care has been reimagined from the ground up to support a customer-centric, AI driven, and digitally enabled customer experience to move your business forward. HPE Pointnext Tech Care is available in three response levels. Basic, which provides 9x5 business hour availability and a 2 hour response time. Essential which provides a 15 minute response time 24x7 for most enterprise level customers, and Critical which includes a 6 hour repair commitment where available and outage management response for severity 1 incidents.

https://www.hpe.com/services/techcare

HPE Pointnext Complete Care
HPE Pointnext Complete Care is a modular, edge-to-cloud IT environment service that provides a holistic approach to optimizing your entire IT environment and achieving agreed upon IT outcomes and business goals through a personalized and customer-centric experience. All delivered by an assigned team of HPE Pointnext Services experts. HPE Pointnext Complete Care provides:

- A complete coverage approach -- edge to cloud
- An assigned HPE team
- Modular and fully personalized engagement
- Enhanced Incident Management experience with priority access
- Digitally enabled and AI driven customer experience

https://www.hpe.com/services/completecare

Other related services from HPE Pointnext 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/5981-8527ENW.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://h20195.www2.hpe.com/v2/Getdocument.aspx?docname=5981-9356enw

HPE Service Credits
Offers flexible services and technical skills to meet your IT demands as your business evolves. With a menu of services, you can access additional resources and specialist skills to help you maintain peak performance of your IT. HPE Service Credits help you proactively respond to your dynamic IT and business needs.

HPE Education Services
Provides comprehensive training designed to expand the skills of your IT staff and keep them up to speed with the latest technologies.

Consult your Hewlett Packard Enterprise Sales Representative or Authorized Channel Partner of choice for any additional questions and support options.

Service and Support

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 QuickSpecs, or the technical product data sheet will not be provided, repaired, or replaced as part of these services.

Defective Media Retention

An option available with HPE Pointnext Complete Care and HPE Pointnext Tech Care and applies only to Disk or eligible SSD/Flash Drives replaced by HPE due to malfunction.

AI Powered and Digitally Enabled Support Experience

Achieve faster time to resolution with access to product-specific resources and expertise through a brand-new digital and data driven customer experience.
Sign into the customer engagement platform, featuring modern self-serve case creation and management capabilities with inline knowledge recommendations. You will find powerful troubleshooting support through a new intelligent virtual agent with seamless transition when needed to a live support agent. **https://support.hpe.com/hpesc/public/home/signin**

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 **http://www.hpe.com/support/hpesc**

Hewlett Packard Enterprise 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.
Notes :*HPE Support Center Mobile App is subject to local availability

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For more information

- **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 (Select one)

Description	SKU
HPE SN6700B 64Gb 56/24 24-port 32Gb Short Wave SFP28 Integrated Fibre Channel Switch	R6B05A
Notes: 64Gbps 56-port FC Switch with 24 active ports; accessory kit (Rackmount kit, enterprise safety and regulatory information, installation guide, rack-mounting instructions), power cords, serial cable, and the following software: Advanced Fabric OS, Advanced Web Tools, Advanced Zoning, Fabric Vision, ISL Trunking, Extended Fabric, Integrated Routing and FICON CUP	
HPE SN6700B 64Gb 56/24 24-port 32Gb Short Wave SFP28 Port Side Intake Integrated FC Switch	R6B06A
Notes: 64Gbps 56-port FC Switch with 24 active ports and Port Side Intake airflow; accessory kit (Rackmount kit, enterprise safety and regulatory information, installation guide, rack-mounting instructions), power cords, serial cable, and the following software: Advanced Fabric OS, Advanced Web Tools, Advanced Zoning, Fabric Vision, ISL Trunking, Extended Fabric, Integrated Routing and FICON CUP	
HPE SN6700B 64Gb 56/24 24-port 64Gb Short Wave SFP56 Fibre Channel Switch	R7M13A
Notes: 64Gbps 56-port FC Switch with 24 active ports; accessory kit (Rackmount kit, enterprise safety and regulatory information, installation guide, rack-mounting instructions), power cords, serial cable, and the following software: Advanced Fabric OS, Advanced Web Tools, Advanced Zoning, Fabric Vision, ISL Trunking, Extended Fabric, Integrated Routing and FICON CUP	
HPE SN6700B 64Gb 56/24 24-port 64Gb Short Wave SFP56 Port Side Intake Integrated FC Switch	R7M14A
Notes: 64Gbps 56-port FC Switch with 24 active ports and Port Side Intake airflow; accessory kit (Rackmount kit, enterprise safety and regulatory information, installation guide, rack-mounting instructions), power cords, serial cable, and the following software: Advanced Fabric OS, Advanced Web Tools, Advanced Zoning, Fabric Vision, ISL Trunking, Extended Fabric, Integrated Routing and FICON CUP	

Step 2 – Options

Ports on Demand (PoD) Kits

HPE SN6700B 8-port POD Upgrade License with 32Gb SFP28 Short Wave Transceiver Kit	R6B09A
HPE SN6700B 64Gb 8-port Short Wave SFP56 Fibre Channel Upgrade License with Transceiver Kit	R7M18A

Notes: The above PoD Kits are available as a physical upgrade package only, these are not available as an e-license because they include the optics. PoD Kits include Secure optics.

Fibre Channel Transceivers - Secure

HPE B-series 32Gb SFP28 Short Wave 1-pack Secure Transceiver	R6B12A
HPE B-series 32Gb SFP28 Short Wave 8-pack Secure Transceiver	R6W26A
HPE B-series 32Gb SFP28 Long Wave 10km 1-pack Secure Transceiver	R6B13A
HPE B-series 32Gb SFP Extended Long Wave 25km 1-pack Secure Transceiver	R7M17A
HPE B-series 64Gb SFP56 Short Wave 1-pack Secure Transceiver	R7M15A
HPE B-series 64Gb SFP56 Short Wave 8-pack Secure Transceiver	R7M16A
HPE B-series 10Gb SFP+ Short Wave 1-pack Secure Transceiver	R6B14A
HPE B-series 10Gb SFP+ Long Wave 10km 1-pack Secure Transceiver	R6B15A

Other Optics

Notes: HPE SN6700B supports HPE Complete SmartOptics 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** and Brocade Fabric OS Open Systems Compatibility Matrix

Configuration Information

Accessories

Description	SKU
HPE B-series 4G USB Drive	N9Y63A

Optical Cables

Performance			
Distance - Maximum	**HPE Standard OM3 Cable**	**HPE PremierFlex OM3+ Cable**	**HPE PremierFlex OM4 Cable**
64Gb performance	70 meters	70 meters	100 meters
32Gb performance:	70 meters	70 meters	100 meters
16Gb performance:	100 meters	100 meters	125 meters

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
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

Notes:

- For Fabric OS (FOS) minimum requirements, please refer to: **https://www.hpe.com/storage/spock**
- HPE B-series software licenses are available through the Electronic Delivery (E-Delivery) mechanism. The E-Delivery software licenses are functionally equivalent to the corresponding physical licenses. The E-Delivery version (ending with AE) is listed first and the physical version is second.

HPE SANnav Management Portal Base 1yr E-LTU R3P45AAE

Notes: (Physical License – R3P45A)

HPE SANnav Management Portal Enterprise 1yr E-LTU R3P46AAE

Notes: (Physical License – R3P46A)

HPE SANnav Global View 1yr E-LTU R3P47AAE

Notes: (Physical License – R3P47A)

HPE SANnav Management Portal Base 3yr E-LTU R3P48AAE

Notes: (Physical License – R3P48A)

Configuration Information

Description	SKU
HPE SANnav Management Portal Enterprise 3yr E-LTU	R3P49AAE
Notes: (Physical License – R3P49A)	
HPE SANnav Global View 3yr E-LTU	R3P50AAE
Notes: (Physical License – R3P50A)	
HPE SANnav Management Portal Base 5yr E-LTU	R4P29AAE
Notes: (Physical License – R4P29A)	
HPE SANnav Management Portal Enterprise 5yr E-LTU	R4P30AAE
Notes: (Physical License – R4P30A)	
HPE SANnav Global View 5yr E-LTU	R4P31AAE

Notes:

- (Physical License – R4P31A)
- The Base edition of HPE SANnav Management Portal does not support management of director class switches.
- HPE SANnav Management Software License-to-Use (LTU/E-LTU) includes maintenance and support for the duration of the license. At the end of the license period, customer will need to purchase a new license to continue using the software. Software renewal via HPE PointNext is not allowed/supported.
- A 90-day, full-featured trial license for SANnav Management Portal and SANnav Global View is available.

Technical Specifications

Family Information

Features	SN3000B 16 Gbps FC Switch	SN3600B 32 Gbps FC Switch	SN6000B 16Gbps FC Switch and SN6000B 16Gbps FC Power Pack+
Targeted Environment	Workgroups, Departments	Workgroups, Departments	Workgroups, Departments
Fibre Channel Port Bandwidth	16 Gbps	32 Gbps	16Gbps
Aggregate device bandwidth	384 – 768 Gbps full duplex	768 Gbps end-to-end full duplex	384- 768 Gbps
OS Support	**Notes:** Please Refer to SPOCK **https://www.hpe.com/storage/spock**		
Storage system support	Primera, Nimble, 3PAR StoreServ, StoreVirtual , P9500/XP7, MSA		
FC Ports	12 or 24 enabled 24 Max	8 or 24 Enabled 24 Max	24 or 48 Enabled 48 Max
SFP	B-series	B-series	B-series
Advanced Trunking	Included with Power Pack+ 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	Optional	No	Yes
Hot plug fans	Yes (integrated with power supply)	Yes (integrated with power supply)	Yes (integrated with power supply)

Technical Specifications

Features	SN6600B 32Gbps FC Switch and SN6600B 32Gb FC Switch	SN6700B 64Gbps FC Switch
Targeted Environment	Workgroups, Departments	Workgroups, Departments
Fibre Channel Port Bandwidth	32 Gbps	64Gbps
Aggregate device bandwidth	2 Tbps	3.5 Tbps
OS Support	**Notes:** Please Refer to SPOCK **https://www.hpe.com/storage/spock**	
Storage system support	Primera, Nimble, 3PAR StoreServ, StoreVirtual, P9500/XP, MSA	
FC Ports	24 or 48 enabled 64 Max	24 Enabled 56 Max
SFP	B-series Optics (16Gbps or 32Gbps)	B-series Secure 24 32Gbps SFP28 or 64Gbps SFP56 included
Advanced Trunking	Included with Power Pack+ or Optional Upgrade	Included in Power Pack+ on all switches
Adaptive Networking	Included	Included
Form factor	1U	1U
Zoning Software	Yes (Included)	Yes (Included)
Hot plug, redundant power supplies	Yes	Yes
Hot plug fans	Yes (integrated with power supply)	Yes (integrated with power supply)

Technical Specifications

Features	1606 Extension SAN Switch	SN4000B SAN Extension Switch
Targeted Environment	Data Centers	Data Centers
Fibre Channel Port Bandwidth	8Gbps	16Gbps
Ethernet	1Gbps Ethernet	1/10/40Gbps Ethernet
OS Support	**Notes:** Please Refer to SPOCK **https://www.hpe.com/storage/spock**	
Storage system support	Primera, Nimble, 3PAR StoreServ, StoreVirtual , P9500/XP, MSA	
FC Ports	4 or 16 Enabled 16 Max	24 Enabled 24 Max
Ethernet Ports	2 or 6 Enabled 6 Max	16 ports 1/10GbpsE Enabled 16 Max 2 – 40GbpsE ports
SFP	B-series	B-series
Advanced Trunking	Included with Power Pack+ or Optional Upgrade	Included
Adaptive Networking	Included	Included
Form factor	1U	2U
Zoning Software	Yes (Included)	Yes (Included)
Hot plug, redundant power supplies	Yes	Yes
Hot plug fans	Yes	Yes

Technical Specifications

Features	SN8000B 4-Slot SAN Director and 4-Slot SAN Director Power Pack+	SN8600B 4-slot SAN Director Power Pack+	SN8700B 4-Slot SAN Director Power Pack
Targeted Environment	Cloud Optimized Data Centers	Cloud Optimized Data Centers	Cloud Optimized Data Centers
Port Bandwidth	Up to 16Gbps	Up to 32 Gbps	Up to 64Gbps
Aggregate device bandwidth	5.1 Tbps	10.24 Tbps	15.5 Tbps
OS Support	**Notes:** Please Refer to SPOCK **https://www.hpe.com/storage/spock**		
Storage system support	Primera, Nimble, 3PAR StoreServ, StoreVirtual P9500/XP, MSA		
Ports	Up to 256 SFP	Up to 256 32 Gbps ports or a 320-port equivalent with 16 ICL ports.	256 ports - 192 device ports with a 64Gbps data rate plus 16 4x50Gbps ICLs or 320 ports - 256 device ports with a 32Gbps data rate plus 16 4x50Gbps ICLs
SFP	B-series	B-series	B-series Secure
Advanced Trunking	Included with Power Pack Optional Upgrade	Included with Power Pack	Included with Power Pack
Adaptive Networking	Included	Included	Yes (included)
Form factor	9U	9U	9U
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	SN8000B 8-Slot SAN Director Power Pack+	SN8600B 8-Slot SAN Director Power Pack+	SN8700B 8-Slot SAN Director Power Pack+
Targeted Environment	Cloud Optimized Data Centers	Cloud Optimized Data Centers	Cloud Optimized Data Centers
Port Bandwidth	Up to 16Gbps	Up to 32 Gbps	Up to 64Gbps
Aggregate device bandwidth	10.2Tbps	16.2 Tbps	31 Tbps
OS Support	**Notes:** Please Refer to SPOCK **https://www.hpe.com/storage/spock**		
Storage system support	Primera, Nimble, 3PAR StoreServ, StoreVirtual P9500/XP, MSA		
Ports	Up to 512 SFP	384 32 Gbps ports or a 512-port equivalent with 128 Gbps (32 Gbps×4 QSFP ports)	512 ports - 384 device ports with a 64Gbps data rate plus 32 4x50Gbps ICLs or 640 ports - 512 device ports with a 32Gbps data rate plus 32 4xGen7 ICLs
SFP	B-series	B-series	B-series Secure
Advanced Trunking	Included with Power Pack	Included with Power Pack	Included with Power Pack
Adaptive Networking	Included	Included	Yes (included)
Form factor	14U	14U	14U
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 16Gbps SAN Switch for HPE c-Class BladeSystem	Brocade 16Gbps Fibre Channel SAN Switch Module for HPE Synergy
Targeted Environment	Enterprise, Datacenters, Workgroups, Departments	Enterprise, Datacenters, Workgroups, Departments
Port Bandwidth	16 Gbps	16 Gbps
Aggregate device bandwidth	448 Gbps	576 Gbps
OS Support	**Notes:** Please Refer to SPOCK **https://www.hpe.com/storage/spock**	
Storage system Support	Primera, Nimble, 3PAR StoreServ, StoreVirtual, P9500/XP, MSA	
Ports	12 external /16 internal	8 SFP+ external, 4 QSFP external /12 internal
SFP	B-series	B-series
Advanced Trunking	Included with Power Pack+ or Optional Upgrade	Included with Power Pack+ or Optional Upgrade
Adaptive Networking	Included	Included
Form factor	Embedded	Embedded
Zoning Software	Yes (Included)	Yes (Included)
Hot plug, redundant power supplies	Yes, in BladeSystem Enclosure	Yes, in Synergy Frame
Hot plug fans	Yes, in BladeSystem Enclosure	Yes, in Synergy Frame

Technical Specifications

System Architecture

Fibre Channel ports	**Switch mode (default):** Minimum of 24 ports and maximum of 56 ports configuration. Port numbers above minimum are enabled through 8-port increments via Ports on Demand (PoD) Kits (which include PoD licenses and 8 transceivers). Universal ports self-configure as an E_Ports, F_Ports, N_Ports, or D_Ports. Ex. Ports can be activated on a per-port basis with the included Integrated Routing license. Access Gateway default port mapping: 48 F_Ports, 8 N_Ports.
Scalability	Full fabric architecture with a maximum of 239 switches: **https://support.hpe.com/hpsc/doc/public/display?docId=c00403562**
Certified maximum	6,000 active nodes; 56 switches, 19 hops in Fabric OS® fabrics; larger fabrics certified as required Refer to SAN Design Guide for current configuration information: **https://support.hpe.com/hpsc/doc/public/display?docId=c00403562**
Interoperability	• 8/8 SAN Switch • 8/24 SAN Switch • 1606 Extension SAN Switch • SN4000B SAN Extension Switch • SN2600B SAN Extension Switch • SN8000B 8-Slot SAN Backbone Director • SN8600B 8-Slot SAN Director Power Pack+ • SN8700B 8-Slot SAN Director Power Pack+ • SN8000B 4-Slot SAN Director • SN8600B 4-Slot SAN Director Power Pack+ • SN8700B 4-Slot SAN Director Power Pack+ • SN6500B Fibre Channel Switch • SN6650B Fibre Channel Switch • SN6000B Fibre Channel Switch • SN6600B Fibre Channel Switch • SN3000B Fibre Channel Switch • SN3600B 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 • Brocade 32Gb Fibre Channel SAN Switch Module for HPE Synergy
Performance	Fibre Channel: 8.5Gbps/s line speed, full duplex; 10.53Gbps/s line speed, full duplex; 14.025Gbps/s line speed, full duplex; 28.05Gbps/s line speed, full duplex; 57.8Gbps/s line speed, full duplex; auto-sensing of 8, 10, 16, 32, and 64Gbps/s port speeds. 10Gbps/s optionally programmable to fixed port speed.
ISL Trunking	Frame-based trunking with up to eight SFP+ ports per ISL trunk; up to 512Gbps/s 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	3.5 Tbps
Maximum Fabric latency	Port-to-port latency is minimized to 460 ns (including FEC) is minimized by using cut-through frame switching.
Maximum frame size	2112-byte payload
Frame buffers	15,360 dynamically allocated
Classes of service	Class 2, Class 3, Class F (Inter-switch frames)
Port types	D_Port (ClearLink Diagnostic Port), E_Port, EX_Port, F_Port, AE_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, Small Form Factor Pluggable (SFP), LC connector; Short-Wave Laser (SWL), Long-Wave Laser (LWL); Extended Long-Wave (ELWL), distance depends on fiber-optic cable and port speed. Supports 64Gb, 32Gb and 10Gb optical transceivers.
USB	One USB port for system log file downloads or firmware upgrades

Technical Specifications

Fabric services	BB Credit Recovery; Advanced Zoning (Default Zoning, Port/WWN Zoning, Peer Zoning); Congestion Signaling; Dynamic Path Selection (DPS); Extended Fabrics; Fabric Performance Impact Notification (FPIN); Fabric Vision; FDMI; FICON CUP; Flow Vision; F_Port Trunking; FSPF; Integrated Routing; ISL Trunking; Management Server; NPIV; NTP v3; Port Decommission/Fencing; QoS; Registered State Change Notification (RSCN); Name Server; Target-Driven Zoning; Traffic Optimizer; Virtual Fabrics(Logical Switch, Logical Fabric); VMID and App Server.
Extension	Fibre Channel, in-flight encryption/compression; integrated optional 10Gbps Fibre Channel for DWDM MAN connectivity
Options	SFP media, USB Device
Management	
Management software supported	HTTP/HTTPS; SNMP v1/v3 (FE MIB, FC Management MIB); SSH; Brocade Advanced Web Tools; Brocade SANnav Management Portal and SANnav Global View; EZSwitch Setup; Command Line Interface (CLI);RESTful API; trial licenses for add-on capabilities.
Security	DH-CHAP (between switches and end devices), FCAP switch authentication; HTTPS, IPsec, IP filtering, LDAP with IPv6, OpenLDAP, Port Binding, RADIUS, TACACS+, user-defined Role-Based Access Control (RBAC), Secure Copy (SCP), Secure RPC, Secure Syslog, SFTP, SSH v2, SSL, Switch Binding, Trusted Switch, Secure Boot, TLS v1.3
Management access	10/100/1000 Mbps Ethernet (RJ-45), in-band over Fibre Channel, serial port (mini-USB), and one USB port
Diagnostics	Active Support Connectivity (ASC) and Brocade Support Link (BSL); built-in flow generator; Clear Link optics and cable diagnostics, including electrical/optical loopback, link traffic/latency/distance; Fabric Performance Impact Monitoring (FPI); flow mirroring; Forward Error Correction (FEC); frame viewer; IO Insight for SCSI and NVMe monitoring; Monitoring and Alerting Policy Suite (MAPS); nondisruptive daemon restart; optics health monitoring; POST and embedded online/offline diagnostics, including environmental monitoring, FCping and Pathinfo (FC traceroute); power monitoring; RAS trace logging ;Rolling Reboot Detection (RRD); Syslog/Audit Log; VM Insight.
Mechanicals	
Enclosure	Back-to-front airflow (non-port-side intake) or Front-to-back airflow (non-port-side exhaust); power from back, 1U
Size	Width: 440 mm (17.32 in.) Height: 43.9 mm (1.73 in.) Depth: 355.6 mm (14 in.)
System Weight	7.17 kg (15.8 lb) with two power supply FRUs, without transceivers
Environment	
Operating environment	Temperature : 0° to 40° C (32° to 104° F) Humidity: 10% to 85% (non-condensing)
Non-operating	Temperature: -25° to 70° C (-13° to 158° F) Humidity: 10% to 90% (non-condensing)
Operating Altitude	Up to 3,000 m (9,842 ft)
Storage altitude	Up to 12 km (39,370 ft)
Shock	Operating: Up to 20 G, 6 ms half-sine Non-operating: Half-sine, 33 G 11 ms, 3/eg axis
Vibration	Operating: 0.5 g sine, 0.4 grms random, 5 to 500 Hz Non-operating: 2.0 g sine, 1.1 grms random, 5 to 500 Hz
Heat dissipation	56 ports at 901 BTU/hr

Technical Specifications

Power	
Power Supply	Dual, hot-swappable redundant power supplies with integrated system cooling fans
AC input	90 V to 264 V , maximum input current 4.5A
AC Input line frequency	47 Hz to 63 Hz
AC Power Consumption	318W with all 56 ports operating at 64Gb (56 ports populated with 64G SW optics). 264W with all 56 ports populated with 32Gb (56 ports populated with 32Gb SW optics) 57 W for empty chassis with no optics

Summary of Changes

Date	Version History	Action	Description of Change
01-Nov-2021	Version 5	Changed	Updated references to optic types
04-Oct-2021	Version 4	Changed	Service and Support section was updated.
02-Aug-2021	Version 3	Changed	Service and Support section was updated.
07-June-2021	Version 2	Changed	Overview, Configuration Information and Technical Specification sections were updated.
07-Dec-2020	Version 1	New	New QuickSpecs

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