Overview

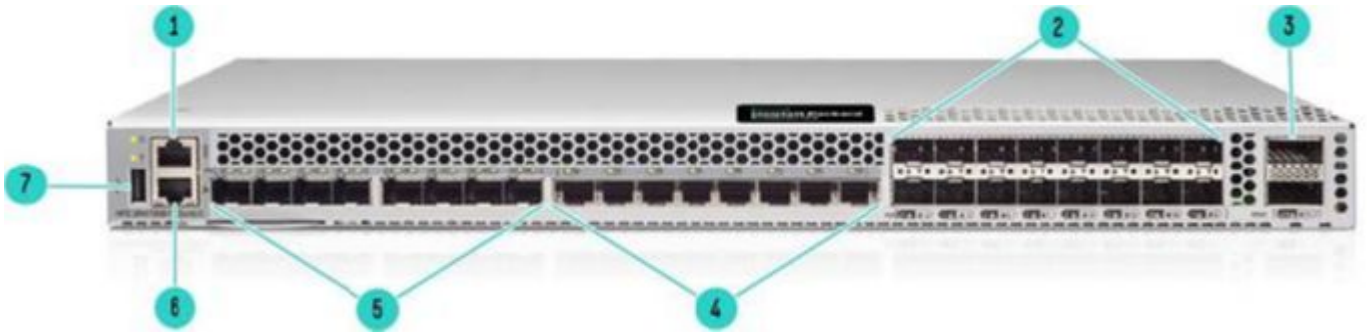
HPE Storage SAN Extension Switch B-series SN4700B

As businesses increasingly embrace digital business, data becomes more valuable than ever and users expect that data to be accessible from anywhere, at any time, with uninterrupted service. Any downtime or disruption to that data can result in significant financial losses, damaged reputations, and in some cases, regulatory fines. This puts tremendous pressure on organizations to ensure that critical business operations can continue in the face of adverse events such as natural disasters, ransomware, cyber attacks, or system failures. Data center outages happen, and organizations need to be prepared for malicious intrusion and unexpected disasters to ensure their valuable information is protected. Data replication between data centers is critical for disaster recovery, but it can also be challenging, particularly when dealing with large volumes of data. Companies need their disaster recovery infrastructure to ensure the fast, continuous, and secure replication of mission-critical data anywhere in the world, to prevent data loss or data breaches when in-flight across the WAN.

HPE Storage SAN Extension Switch B-series SN4700B addresses these challenges by providing a powerful, reliable, secure solution for disaster recovery. This cyber-resilient replication connectivity solution for enterprise storage securely moves more data, faster, over distance for continuous data protection. With ample replication performance, up to 100Gb/s over distance, and built-in technology that overcomes the inherent challenges of latency and packet loss over long distance, the HPE Storage SAN Extension Switch B-series SN4700B provides high-speed connectivity between locations to dramatically speed up replication performance - even over intercontinental distances. This makes it easier for organizations to move large amounts of data quickly and efficiently, to ensure critical data is available in the event of a disaster. In addition, the HPE Storage SAN Extension Switch B-series SN4700B includes a suite of features, from pre-deployment validation to advanced network failure recovery technologies, to protect data from WAN disruptions and outages for continuous availability over the WAN. Moreover, data-in-flight security, coupled with the B-series hardware and software robust security features, secures connections between data centers to safeguard data from threats over the WAN and to protect data from unauthorized access. The HPE Storage SAN Extension Switch B-series SN4700B is an excellent choice for businesses looking to protect their critical data from cyber threats and ensure business continuity in the event of a disaster.

The HPE Storage SAN Extension Switch B-series SN4700B is purpose-built to handle the replication demands of large enterprise customers. This switch is designed to deliver the most outstanding data protection and performance regardless of distance. With twenty- four 64G Fibre Channel ports, sixteen 1/10/25GbE ports, and two 100GbE ports, data centers can achieve the bandwidth, port density, and throughput needed for maximum replication performance over WAN connections. Industry-leading port density and performance packed into a 1U form factor enables organizations to consolidate high-speed Fibre Channeland IP storage replication traffic between data centers while ensuring plenty of headroom for future growth. HPE Storage SAN Extension Switch B-series SN4700B comes unlocked with full bandwidth and all ports enabled, leaving no limitations on throughput. In addition, it includes an innovative collection of software capabilities that optimize WAN utilization and protect data from WAN disruptions and outages, including Fabric Vision technology, Extension Trunking, Adaptive Rate Limiting (ARL), encryption (IPsec), and integrated routing.

Overview



HPE Storage SAN Extension Switch B-series SN4700B

1. Serial console port (RJ-45)
2. 1/10/25GbE ports (XGE 0-15)
3. 100GE QSFP ports (100GE 16-17)
4. 64Gb/s SFP56 FC ports (16-23)
5. 64Gb/s SFP-DD FC ports (0-15)
6. Ethernet management port (RJ-45)
7. USB Port

Notes: All the ports are connected to a single Gen7 ASIC.

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.
- 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.
- FC Routing delivers fabric isolation in conjunction with FCIP, enabling separate fabrics to share devices without merging across the IP network.

HPE Storage SAN Extension Switch B-series SN4700B

- 24 Fibre Channel ports with link speeds of 8, 16, 32, and 64 Gbps, (8x64Gb Fibre Channel, 8x64Gb DD Fibre Channel i.e. a total of 24x64 Gbps-capable ports), compatible with short wavelength (SWL), long wavelength (LWL) and extended long wavelength (ELWL) SFP+ transceivers
- Sixteen 1 GbE/10 GbE/25 GbE ports, compatible with short reach (SR) and long reach (LR) SFP+ transceivers
- Two 100 GbE ports, compatible with short reach (SR) QSFP transceivers
- Rack-mountable 1U chassis
- One RJ-45 Ethernet management port with 10/100/1000 Mbps auto negotiating capability
- One USB port that provides storage for firmware updates, switch support data, and storage for configuration uploads and downloads

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Configuration Support

The HPE Storage SAN Extension Switch B-series SN4700B is fully compatible with the B-series FC switches and directors. The SN4700B is also fully compatible connecting via FCIP to the SN2600B and SX6 Extension Blade, but is not compatible connecting via FCIP to the SN4000B. For complete interoperability information please check:

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

Standard Features

Simplified Management

Brocade 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.

The HPE Storage SAN Extension Switch B-series SN4700B supports the following Fabric Vision technology features for storage extension management:

- Monitoring and Alerting Policy Suite (MAPS): Provides a pre-built, policy-based threshold monitoring and alerting tool that proactively monitors storage extension network health based on a comprehensive set of metrics at tunnel, circuit, and QoS layers. Administrators can configure multiple fabrics at one time using pre-defined or customized rules and policies for specific ports or switch elements.
- Fabric Performance Impact (FPI) Monitoring: Uses pre-defined thresholds and alerts in conjunction with MAPS to automatically detect and alert administrators to severe levels of latency and identifies slow drain devices that might impact the network. This feature uses advanced monitoring capabilities and intuitive MAPS dashboard reporting to indicate various latency severity levels, pinpointing exactly which devices are causing or impacted by a bottlenecked port.
- Dashboards: Provides integrated dashboards that display an overall SAN health view, along with details on out-of-range conditions, to help administrators easily identify trends and quickly pinpoint issues occurring on a switch or in a fabric.

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 HPE Storage SAN Extension Switch B-series SN4700B Provides multiple modes to optimize compression ratios for various throughput requirements.

IPSec

The HPE Storage SAN Extension Switch B-series SN4700B 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.

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 and 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.

Software Components, Standard

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

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Standard Features

- 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 SANnav Management Portal that contains all critical SAN information for convenient review and analysis

Extended Fabric

The HPE Storage SAN Extension Switch B-series SN4700B 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, which comes bundled with the SN4700B, logically aggregates E-ports to provide a high bandwidth trunk between two switches. Each 16Gb switch needs its own license. The switch operating system views the trunk as a single, high bandwidth resource (up to 128Gb) when routing connections between 16G switches.

WebTools

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.

Integrated Routing

Integrated Routing provides native Fibre Channel Routing (FCR) 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.

Notes: The HPE Storage SAN Extension Switch B-series SN4700B comes fully license with full bandwidth and does not require any additional licensing. does not have any licensing options, the base offering Software Components, Optional

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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-

Standard Features

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 well as a one-year renewal licenses. . It supports 8Gb, 16Gb, 32Gb and 64Gb FC Switches and Directors.

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 8.2.0 or later.
- A list of supported HPE FC Adapters can be found at: https://h20272.www2.hpe.com/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

(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 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 Services

No matter where you are in your transformation journey, you can count on HPE Services to deliver the expertise you need when, where and how you need it. From planning to deployment, ongoing operations and beyond, our experts can help you realize your digital ambitions.
https://www.hpe.com/services

Consulting services

No matter where you are in your journey to hybrid cloud, experts can help you map out your next steps. From determining what workloads should live where, to handling governance and compliance, to managing costs, our experts can help you optimize your operations.
https://www.hpe.com/services/consulting

SAN Fabric Integration and Migration service

HPE Data Storage Services - SAN Fabric Integration and Migration simplifies the introduction of and migration to new HPE B-series SAN fabric devices. It helps maximize the value of your investment in your new HPE B-series SAN fabric devices by leveraging HPE Services expertise and best practices.
https://www.hpe.com/psnow/doc/a50011015enw

HPE Managed Services

HPE runs your IT operations, providing 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.
HPE Managed Services | HPE

Operational services

Optimize your entire IT environment and drive innovation. Manage day-to-day IT operational tasks while freeing up valuable time and resources. Meet service-level targets and business objectives with features designed to drive better business outcomes.
https://www.hpe.com/services/operational

Recommended Services

HPE Tech Care Service

Service and Support

HPE Tech Care Service is the operational support service experience for HPE products. The service 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 Tech Care Service delivers a customer-centric, AI driven, and digitally enabled customer experience to move your business forward. HPE Tech Care Service 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 Complete Care Service
HPE Complete Care Service is a modular, edge-to-cloud IT environment service designed to help optimize your entire IT environment and achieve agreed upon IT outcomes and business goals through a personalized experience. All delivered by an assigned team of HPE Services experts. HPE Complete Care Service 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 Services

HPE Lifecycle Services
HPE Lifecycle Services provide a variety of options to help maintain your HPE systems and solutions at all stages of the product lifecycle. A few popular examples include:

- Lifecycle Install and Startup Services: Various levels for physical installation and power on, remote access setup, installation and startup, and enhanced installation services with the operating system.
- HPE Firmware Update Analysis Service: Recommendations for firmware revision levels for selected HPE products, taking into account the relevant revision dependencies within your IT environment.
- HPE Firmware Update Implementation Service: Implementation of firmware updates for selected HPE server, storage, and solution products, taking into account the relevant revision dependencies within your IT environment.
- Implementation assistance services: Highly trained technical service specialists to assist you with a variety of activities, ranging from design, implementation, and platform deployment to consolidation, migration, project management, and onsite technical forums.
- HPE Service Credits: Access to prepaid services for flexibility to choose from a variety of specialized service activities, including assessments, performance maintenance reviews, firmware management, professional services, and operational best practices.

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

- For a list of the most frequently purchased services using service credits, see the **HPE Service Credits Menu**

HPE SAN Deployment Service
Hewlett Packard Enterprise delivers complete design and implementation services for Fibre Channel, FCoE, FCIP, SAS, and iSCSI SAN connectivity components.

Service and Support

Learn more: **https://www.hpe.com/psnow/doc/5981-8527enw?jumpid=in_lit-psnow-red**

HPE Installation Service

Provides for the basic hardware installation of HPE branded servers, storage devices and networking options to assist you in bringing your new hardware into operation in a timely and professional manner.

Learn more: **https://h20195.www2.hpe.com/v2/Getdocument.aspx?docname=5981-9356enw**

HPE Education Services

Training and certification designed for IT and business professionals across all industries. Broad catalogue of course offerings to expand skills and proficiencies in topics ranging from cloud and cybersecurity to AI and DevOps. Create learning paths to expand proficiency in a specific subject. Schedule training in a way that works best for your business with flexible continuous learning options.
https://www.hpe.com/services/training

Defective Media Retention

An option available with HPE Complete Care Service and HPE Tech Care Service and applies only to Disk or eligible SSD/Flash Drives replaced by HPE due to malfunction.
Consult your HPE Sales Representative or Authorized Channel Partner of choice for any additional questions and services options.

Parts and Materials

HPE 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.

How to purchase services

Services are sold by Hewlett Packard Enterprise and Hewlett Packard Enterprise Authorized Service Partners:

- Services for customers purchasing from HPE or an enterprise reseller are quoted using HPE order configuration tools.
- Customers purchasing from a commercial reseller can find services at **https://ssc.hpe.com/portal/site/ssc/**

AI Powered and Digitally Enabled Support Experience

Achieve faster time to resolution with access to product-specific resources and expertise through a digital and data driven customer experience.
Sign into the HPE Support Center experience, featuring streamlined self-serve case creation and management capabilities with inline knowledge recommendations. You will also find personalized task alerts and powerful troubleshooting support through an intelligent virtual agent with seamless transition when needed to a live support agent.
https://support.hpe.com/hpesc/public/home/signin

Consume IT on your terms

HPE GreenLake edge-to-cloud platform 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

Service and Support

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 edge-to-cloud platform 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

To learn more about HPE 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**
For more information: **http://www.hpe.com/services**

Configuration Information

Step 1 - Base Configuration

HPE Storage SAN Extension Switch B-series SN4700B

Description	SKU
HPE SN4700B 64Gb 16/16 16-port 64Gb Short Wave SFP56 SAN Extension Fibre Channel Switch	S1T69A

Extension switch for Fibre Channel over Internet Protocol (FCIP) traffic forwarding over IP wide area networks (WAN).
8x64Gb Fibre Channel, 8x64Gb DD Fibre Channel (i.e. a total of 24x64 Gbps-capable ports), 16x25Gbe Ethernet and 2x100Gbe ports) Each of the Fibre Channel ports are capable of supporting 8, 16, 32 and 64 Gbps Fibre Channel speeds, and the Ethernet ports are capable of supporting 1GE, 10GE and 25GE Ethernet speeds.

Notes:

- The S1T69A comes loaded with the following optics
  - 16 SFP ports - Includes 16 x 64G SW SFP56 optics
  - 16 Ethernet ports - Includes 8 x GbE: 4x10/1GbE SR and 4x25/10GbE SR
  - 2 QSFP ports - Includes 2 x 100GE QSFP
- Additional optics can be added from the list of optics below.

To further clarify:

	HW Capability	Optics Included with SN4700B switch (S1T69A)
FC Ports	• 16 SFP Ports - Speed: 8 (SLW/LWL),16, 32 and 64 Gbps (SWL/LWL/ELWL) – 8 ports support 64Gb DD optics (optional) allowing the expansion up to 24 ports	16 x 64G SWL
Ethernet Ports	• 16 Ethernet Ports - Speed: 1GE, 10GE (SR) and 25GE (SR/LR)	8 x GbE (4x10/1GbE SR, 4x25GbE SR)
QSFP Ports	• 2 QSFP Ports (Speed 100GE)	2 x 100GE QSFP

Step 2 - Options

Fibre Channel Transceivers

Description	SKU
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 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 64Gb SFP56 Long Wave 10km 1-pack Secure Transceiver	R9S29A
HPE B-series 64Gb SFP56 Long Wave 10km 8-pack Secure Transceiver	R9S30A

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HPE B-series 64Gb SFP56 Extended Long Wave 25km 1-pack Secure Transceiver	R9S28A
HPE B-series 64Gb SFP56-DD SN SR 1-pack Secure Transceiver	R8U66A
HPE B-series 64Gb SFP56-DD SN SR 8-pack Secure Transceiver	R8U67A

Ethernet Transceivers

HPE B-series 10GbE SFP+ Short Wave 1-pack Secure Transceiver	S1T70A
HPE B-series 10/25GbE SFP28 Short Wave 1-pack Secure Transceiver	S1T71A
HPE B-series 10/25GbE SFP28 Long Wave 1-pack Secure Transceiver	S1T72A
HPE B-series 100GbE QSFP28 SR4 1-pack Secure Transceiver	S1T73A

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

Description	**SKU**
HPE PremierFlex LC/LC 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 PremierFlex SN/LC OM4 Fiber Optic Cables	
HPE Premier Flex SN to LC OM4 2 Fibers 1m Cable	R8U73A
HPE Premier Flex SN to LC OM4 2 Fibers 2m Cable	R8U74A
HPE Premier Flex SN to LC OM4 2 Fibers 5m Cable	R8U75A
HPE Premier Flex SN to LC OM4 2 Fibers 15m Cable	R8U76A
HPE Premier Flex SN to LC OM4 2 Fibers 30m Cable	R8U77A

Notes: The above cables are for use with double-density transceivers. The SN/LC allows the connection from double-density to standard small form factor transceivers.

HPE PremierFlex SN/SN OM4 Fiber Optic Cables	
HPE Premier Flex SN to SN OM4 2 Fibers 1m Cable	R8U68A
HPE Premier Flex SN to SN OM4 2 Fibers 2m Cable	R8U69A
HPE Premier Flex SN to SN OM4 2 Fibers 5m Cable	R8U70A
HPE Premier Flex SN to SN OM4 2 Fibers 15m Cable	R8U71A
HPE Premier Flex SN to SN OM4 2 Fibers 30m Cable	R8U72A

Configuration Information

Notes: The above cables are for use with double-density transceivers. The SN/SN allows the connection from double-density to double-density transceivers.

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://h20272.www2.hpe.com/spock/

Optional Software

SANnav Software Licenses:

Notes: For users purchasing SANnav licenses for the first time, one of the following SKUs should be purchased. For users wanted to renew a SANnav license, a renewal license should be selected from the SANnav Renewal Software License in the next section.

Software for SN6500B 16Gb FC Switch

Description	SKU
HPE SANnav Management Portal Base 1yr E-LTU	R3P45AAE
HPE SANnav Management Portal Enterprise 1yr E-LTU	R3P46AAE
HPE SANnav Global View 1yr E-LTU	R3P47AAE
HPE SANnav Management Portal Base 3yr E-LTU	R3P48AAE
HPE SANnav Management Portal Enterprise 3yr E-LTU	R3P49AAE
HPE SANnav Global View 3yr E-LTU	R3P50AAE
HPE SANnav Management Portal Base 5yr E-LTU	R4P29AAE
HPE SANnav Management Portal Enterprise 5yr E-LTU	R4P30AAE
HPE SANnav Global View 5yr E-LTU	R4P31AAE

Notes:

- 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, customers have the option to renew the license, maintaining the same license key, by selecting from the SANnav Renewal Software License section below Software renewal via HPE Services is not allowed/supported.
- Trial Licenses: depending on the version of SANnav license, the trial period is different.
  - 90-day trial license available with all SANnav releases through v2.2.0

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- 30-day trial license available with SANnav v2.2.1 and v2.2.2
- No trial license available with SANnav v2.3.0 or later

SANnav Renewal Software Licenses:

Notes: For users who currently have a SANnav license and want to renew their software license, one of the following licenses should be selected. The SANnav license must align with the current type of software license i.e. in order to renew a Base license, the Base renewal licenses will need to be selected.

HPE SANnav Management Portal Base 1-year Renewal E-LTU	S1S52AAE
HPE SANnav Management Portal Enterprise 1-year Renewal E-LTU	S1S55AAE
HPE SANnav Global View 1-year Renewal E-LTU	S1S58AAE

Notes:

- 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.
- Trial Licenses - depending on the version of SANnav license, the trial period is different.
  - 90-day trial license available with all SANnav releases through v2.2.0
  - 30-day trial license available with SANnav v2.2.1 and v2.2.2
  - No trial license available with SANnav v2.3.0 or later

Technical Specifications

Features	SN3000B 16 Gbps FC Switch	SN3600B 32 Gbps FC Switch
Targeted Environment	Workgroups, Departments	Workgroups, Departments
Fibre Channel Port Bandwidth	16 Gbps	32 Gbps
Aggregate device bandwidth	384 - 768 Gbps full duplex	768 Gbps end-to-end full duplex
OS Support	**Notes:** Please Refer to SPOCK: https://h20272.www2.hpe.com/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
SFP	B-series	B-series
Advanced Trunking	Included with Power Pack+ Upgrade	Included with Power Pack+ or Optional Upgrade
Adaptive Networking	Included	Included
Form factor	1U	1U
Zoning Software	Yes (Included)	Yes (Included)
Hot plug, redundant power supplies	Optional	No
Hot plug fans	Yes (integrated with power supply)	Yes (integrated with power supply)

Features	SN6600B 32Gb FC Switch and SN6600B 32Gb FC Switch	SN6700B 64Gb FC Switch
Targeted Environment	Workgroups, Departments	Workgroups, Departments
Fibre Channel Port Bandwidth	32 Gb	64Gb
Aggregate device bandwidth	2 Tbps	3.5 Tbps
OS Support	**Notes:** Please Refer to SPOCK_https://h20272.www2.hpe.com/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 64Gb 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	SN6500B 16Gb FC Switch and SN6500B 16Gb FC Power Pack+	SN6650B 32Gb FC Switch and SN6650B 32Gb FC PP+ Switch	SN6750B FC Switch
Targeted Environment	Workgroups, Departments	Workgroups, Departments	Workgroups, Departments
Fibre Channel Port Bandwidth	16Gbps	32Gb	64Gbps
Ethernet	N/A	NA	NA
Aggregate device bandwidth	768-1536-Gbps	4Tbps	8.2Tbps
OS Support	**Notes:** Please Refer to SPOCK **https://www.hpe.com/storage/spock**		
Storage system support	HPE Primera, 3PAR StoreServ, Nimble, StoreVirtual , P9500/XP7, MSA		
FC Ports	48 or 96 Enabled 96 Max	48 or 96 Enabled 128 Max utilizing QSFP ports	48 or 96 Enabled 128 Max utilizing DD ports
SFP	B-series	B-series	B-series
Advanced Trunking	Included with Power Pack+ or Optional Upgrade	Included with Power Pack+	Included
Adaptive Networking	Included	Included	Included
Form factor	2U	2U	2U
Zoning Software	Yes (Included)	Yes (Included)	Yes (Included)
Hot plug, redundant power supplies	Yes	Yes	Yes
Hot plug fans	Yes	Yes	Yes

Features	SN4000B SAN Extension Switch	2600 Extension SAN Switch	SN4700B SAN Extension Switch
Targeted Environment	Data Centers	Data Centers	Data Centers
Fibre Channel Port Bandwidth	16Gbps	32Gbps	64Gbps
Ethernet	1/10/40Gbps Ethernet	1/10Gbps Ethernet	1/10/25/100Gbps Ethernet
OS Support	**Notes:** Please Refer to SPOCK https://h20272.www2.hpe.com/spock/		
Storage system support	Alletra, Primera, Nimble, 3PAR StoreServ, StoreVirtual , P9500/XP, MSA		
FC Ports	24 Enabled 24 Max	4 or 12 Enabled 12 Max	24 Enabled 24 Max
Ethernet Ports	16 ports 1/10GbpsE Enabled 16 Max 2 - 40GbpsE ports	2 or 6 Enabled 6 Max	16 1/10/25Gbps Enabled 16 Max 2 100Gbps Enabled 2 Max
SFP	B-series	B-series	B-series
Advanced Trunking	Included	Included with Optional Upgrade Kit	Included
Adaptive Networking	Included	Included	Included

Technical Specifications

Form factor	2U	1U	1U
Zoning	Included	Included	Included
Hot plug, redundant power supplies	Yes	Yes	Yes
Hot plug fans	Yes	Yes	Yes

Features	**SN8600B 4-slot SAN Director Power Pack+**	**SN8700B 4-Slot SAN Director Power Pack**
Targeted Environment	Cloud Optimized Data Centers	Cloud Optimized Data Centers
Port Bandwidth	Up to 32 Gbps	Up to 64Gb
Aggregate device bandwidth	10.24 Tbps	15.5 Tbps
OS Support	**Notes:** Please Refer to SPOCK https://h20272.www2.hpe.com/spock/	
Storage system support	Primera, Nimble, 3PAR StoreServ, StoreVirtual P9500/XP, MSA	
Ports	Up to 256 32 Gb ports or a 320-port equivalent with 16 ICL ports.	256 ports - 192 device ports with a 64Gb data rate plus 16 4x50Gb ICLs or 320 ports - 256 device ports with a 32Gb data rate plus 16 4x50Gb ICLs
SFP	B-series	B-series Secure
Advanced Trunking	Included with Power Pack	Included with Power Pack
Adaptive Networking	Included	Yes (included)
Form factor	9U	9U
Zoning Software	Yes (included)	Yes (included)
Hot plug, redundant power supplies	Yes	Yes
Hot plug fans	Yes	Yes

Technical Specifications

Features	SN8600B 8-Slot SAN Director Power Pack+	SN8700B 8-Slot SAN Director Power Pack+
Targeted Environment	Cloud Optimized Data Centers	Cloud Optimized Data Centers
Port Bandwidth	Up to 32 Gb	Up to 64Gb
Aggregate device bandwidth	16.2 Tbps	31 Tbps
OS Support	**Notes:** Please Refer to SPOCK https://h20272.www2.hpe.com/spock/	
Storage system support	Primera, Nimble, 3PAR StoreServ, StoreVirtual P9500/XP, MSA	
Ports	384 32 Gb ports or a 512-port equivalent with 128 Gb (32 Gb×4 QSFP ports)	512 ports - 384 device ports with a 64Gb data rate plus 32 4x50Gb ICLs or 640 ports - 512 device ports with a 32Gb data rate plus 32 4xGen7 ICLs
SFP	B-series	B-series Secure
Advanced Trunking	Included with Power Pack	Included with Power Pack
Adaptive Networking	Included	Yes (included)
Form factor	14U	14U
Zoning Software	Yes (included)	Yes (included)
Hot plug, redundant power supplies	Yes	Yes
Hot plug fans	Yes	Yes

Features	Brocade 32Gb Fibre Channel SAN Switch Module for HPE Synergy
Targeted Environment	Enterprise, Datacenters, Workgroups, Departments
Port Bandwidth	32Gbps
Aggregate device bandwidth	896 Gbps (36 ports x 16 Gbps)
OS Support	**Notes:** Please Refer to SPOCK **https://h20272.www2.hpe.com/spock/**
Storage system Support	HPE Primera, 3PAR StoreServ, Nimble, StoreVirtual , P9500/XP7, MSA
Ports	8 SFP+ external, 2 QSFP external /12 internal
SFP	B-series
Advanced Trunking	Included with Power Pack+ or Optional Upgrade
Adaptive Networking	Included
Form factor	Embedded
Zoning Software	Yes (Included)
Hot plug, redundant power supplies	Yes, in Synergy Frame
Hot plug fans	Yes, in Synergy Frame

System Architecture

Enclosure	1U chassis designed to be mounted in a 19-in. cabinet

Technical Specifications

Fibre Channel Ports	24 ports, 64G, universal (E, F, M, D, and EX ports): 8 physical SFP56 Fibre Channel ports 8 physical SFP-DD Fibre Channel ports
Ethernet Ports	16 ports of 1GbE/10GE/25GbE for LAN and WAN connectivity 2 ports of 100GbE for WAN connectivity
Scalability	Full fabric architecture with 239 switches maximum
Certified Maximum	Single fabric: 56 domains, 7 hops Multiprotocol routing fabric: 19 hops
Fibre Channel Performance	8.5Gb/s line speed, full duplex; 14.025Gb/s line speed, full duplex; 28.05Gb/s line speed, full duplex; 57.8Gb/s line speed, full duplex; auto-sensing of 8, 16, 32 and 64G port speeds
Ethernet Interfaces	1GbE, 10GbE, 25GbE and 100GbE
Trunking	Up to eight 64Gb/s ports per Trunk; up to 512 Gb/s per trunk There is no limit to how many trunk groups can be configured in the switch
Fabric Latency	460 ns with no contention, cut-through routing at 64Gb/s
Maximum Fibre Channel Frame Size	2112-byte payload
Maximum IP MTU	Jumbo Frames at 9216 bytes
Classes of Service	Class 2, Class 3, Class F (inter-switch frames)
Port Types	F_Port, E_Port, EX_Port, FCR E_Port, D_Port (Diagnostic), M_Port (Mirror), and self-discovery based on switch type (U_Port); VE_Port (FCIP and IP)
Data Traffic Types	Fabric switches supporting unicast, multicast (255 groups), and broadcast
USB	One USB port for system log file downloads or firmware upgrades
Media Types	**Fibre Channel:** 64G FC SFP56 LC connector (supports 16/32/64G): SWL, LWL, ELWL 32G FC SFP28 LC connector (supports 8/16/32G): SWL, LWL 2x64G FC SFP-DD SN connector (supports 16/32/64G): SWL **Ethernet:** 10GbE SFP/SFP+ LC connector (supports 1/10GbE): SR 25GbE SFP/SFP+ LC connector (supports 10/25GbE): SR, LR 100GbE QSFP MPO connector (supports 100GbE): SR4 40GbE connectivity can be supported through 4x10GbE breakout using four 10GbE ports on the SN4700B platform All B-series transceivers are PC/UPC compatible
Fabric Services	Name Server; Registered State Change Notification (RSCN); NTP; RADIUS; Reliable Commit Service (RCS); Dynamic Path Selection (DPS); Exchange-based routing; Device-based routing; Port-based routing; Lossless; Advanced Zoning; Web Tools; Trunking; Extended Fabrics; Fabric Vision; Traffic Optimizer; SDDQ; Integrated Routing (FCR);

Technical Specifications

Extension Services	Extension Trunking, Adaptive Rate Limiting (ARL), WAN Test Tool (Wtool), Open Systems Tape Pipelining (OSTP), FastWrite (FCIP-FW), QoS Marking, Bandwidth Enforcement, PerPriority TCP QoS, PTQ, Adaptive Networking with QoS, and Advanced Extension and Integrated Routing (FCR)
Management	
Supported Management Software	SSH v2, HTTP/HTTPS, SNMP v1/v3, Telnet; SNMP (FE MIB, FC Management MIB); Web Tools; SANnav Management Portal and SANnav Global View; Command Line Interface (CLI); LDAP
Security	AES-GCM-256 encryption on FC ISLs (E_Port), AES-GCM-256 IPsec encryption (VE_Port), PKI, IKEv2, DH-CHAP (between switches and end devices), FCAP switch authentication; HTTPS, IP filter, AAA, Audit Logging, LDAP, Port Binding, RADIUS, TACACS+, Role-Based Access Control (RBAC), Secure Copy (SCP), Secure RPC, SFTP, SSH v2, TLS 1.3, Switch Binding, Trusted Switch, Login Banners, Secure Syslog

Management Access	1000Mb/s Ethernet (RJ-45), serial port (RJ-45), one USB port
Diagnostics	POST and embedded online/offline diagnostics including D_Port, FCIP ping, FCIP traceroute, FCping, Pathinfo (FCtraceroute), Wtool, Ftrace
Mechanical	
Enclosure	Back-to-front airflow/non-port-side intake; 1U, 19 in., EIA-compliant, power from back
Size	Width: 44 cm (17.32 in.) Height: 4.4 cm (1.73 in.) Depth: 59.03 cm (23.24 in.)
System Weight	20 kg (44.2 lb) 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 3000m (9842 ft) Storage: Up to 12 km (39,370 ft)
Shock	Operating: 20g, 6 ms, half-sine wave Non-operating: 33g, 11 ms, half-sine wave, 3G axis
Vibration	Operating: 0.5 Grms sine, 0.4 Grms random, 5 Hz to 500 Hz Non-operating: 2.0 Grms sine, 1.1 Grms random, 5 Hz to 500 Hz
Airflow	Maximum: 100 CFM
Power	
Power Supply	Dual hot-swappable redundant AC power supplies
Power Inlet	C14; requires C13 plug
Input Voltage	90 VAC to 264 VAC nominal
Input Line Frequency	47 Hz to 63 Hz nominal
Inrush Current	Maximum of 40 amps for period of 10 ms to 150 ms

Technical Specifications

Power Consumption	**Maximum power draw:** 585W with all ports operating at full line-rate: 8 Fibre Channel ports populated with 64G SWL transceivers, 16 Fibre Channel ports populated with 8x 64G SFP-DD SWL transceivers, 16 Ethernet ports populated with 25GE SWL transceivers, and 2 Ethernet ports populated with 100GE SWL transceivers **Minimum power draw:** 315W for an empty chassis with no transceivers **Typical power draw:** 366W with 50% populated ports running at 50% traffic rate 450W with 100% populated ports running at 50% traffic rate

Summary of Changes

Date	Version History	Action	Description of Change
07-Oct-2024	Version 6	Changed	Removed references to SFM / Storage Fabric Manager
03-Sep-2024	Version 5	Changed	Service and Support section was updated
15-Apr-2024	Version 4	Changed	Rebranding Series Name applied
06-Nov-2023	Version 3	Changed	Overview, Technical Specifications and Service and Support sections were updated. Removed references to FICON
11-Sep-2023	Version 2	Changed	Service and Support section was updated Correct warranty terms
05-Sep-2023	Version 1	New	New QuickSpecs

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