

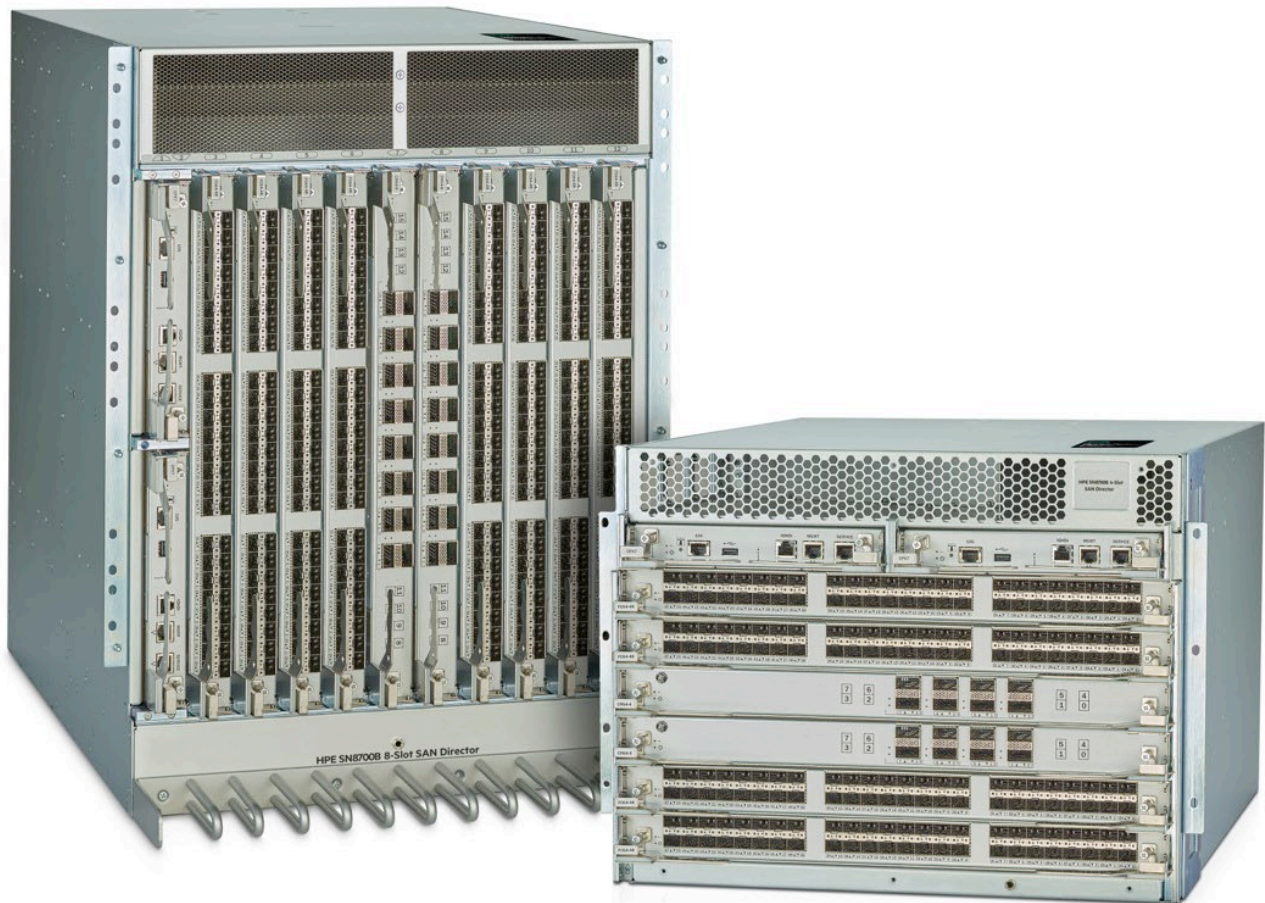
### Overview

#### HPE SAN Director Switch

Today's enterprises are dealing with challenges stemming from unprecedented growth of data, mission critical workloads, ever-increasing VM densities, and getting the most out of investments in new technologies like flash and Non Volatile Memory express (NVMe) storage. With the unprecedented speed and increasing cost-effectiveness of these platforms, data centers are rapidly transforming and are required to deliver more scale, higher availability, and better reliability. In order to meet these challenges, the storage network has become more important and must provide greater value through performance, reliability, and automation of common tasks than ever before.

As a building block of modern data centers, HPE B-series Fibre Channel SAN Director Switches are the industry's leading SAN infrastructure solution for optimizing storage, simplifying operations, and automating SAN management tasks. With industry-leading low latency, increased bandwidth, and continuous availability organizations can have reliable access to data and applications while ensuring modern workloads run smoothly.

A modern SAN must also be self-learning, self-healing, and self-optimizing, with advanced analytics for real-time actionable insights. B-series Fibre Channel SAN Director Switches give organizations a faster, more intelligent, more resilient data network that maximizes the performance of server and storage resources as they scale to meet ever-changing business demands. In addition, HPE gives customers peace of mind and investment protection by allowing the upgrade of a 32Gb HPE SN8600B Director to a 64Gb HPE SN8700B Director via core blade upgrades without costly rip and replace.



**HPE SN8700B 64Gb 8-Slot and 4-Slot SAN Director**

## Overview

### HPE SN8700B 64Gb SAN Directors

HPE SN8700B Directors provide up to 384 64Gbps line rate ports or up to 512 32Gbps line rate ports, enabling organizations to scale more devices, applications, and workloads. With diverse deployment options, multiprotocol flexibility, and mixed blade capability, organizations can adapt and optimize their businesses to meet next-generation storage and server requirements. The HPE SN8700B Director supports the concurrent use of both traditional Fibre Channel and NVMe storage traffic, allowing organizations to seamlessly integrate HPE SN8700B Fibre Channel networks with next generation NVMe-based storage, without a disruptive rip-and-replace.

The HPE SN8700B Director modular design provides flexibility with two customizable chassis (available in both: port-side intake and port-side exhaust airflow models) that can scale on-demand for more devices, applications, and workloads. Both chassis utilize Brocade Ultra Scale ICL technology to scale out modular SANs while preserving blade ports for device connectivity and allowing flexible SAN design that supports core-edge or mesh topologies. This also provides our customers the flexibility to rack-install data center equipment suitable to their hot/cold aisle network designs.

- The 14U HPE SN8700B 8-slot PP+ Director Switch is built for large enterprise networks and has eight vertical blade slots to provide up to 384 64Gbps line rate ports or up to 512 32Gbps line rate ports for device connectivity. An additional 32 UltraScale InterChassis Link (ICL) connections provide 128 ports for chassis-to-chassis interconnect.
- The 8U HPE SN8700B 4-slot PP+ Director Switch is built for midsize networks and has four horizontal blade slots to provide up to 192 64Gbps line rate ports or up to 256 32Gbps line rate ports for device connectivity. An additional 16 UltraScale ICL connections provide 64 ports for chassis-to-chassis interconnect.
- Each blade slot within the SN8700B 8-slot PP+ Director Switch chassis can be populated with optional port or extension blades. For device connectivity, the following blades are available:
  - HPE SN8700B 64Gb 48p SW SFP28 Blade Fibre Channel port blade provides 48 x 64Gbps Fibre Channel ports with backward-compatibility support for 8, 10, 16, and 32Gbps Fibre Channel connectivity.
  - HPE SN8700B 32Gb 48p Fibre Channel port blade provides 48 x 32Gbps Fibre Channel ports with backward-compatibility support for 4, 8, 10, and 16Gbps Fibre Channel connectivity.
  - HPE SN8600B 32Gb 64-port Fibre Channel port blade provides 64 x 32Gbps Fibre Channel ports with backward-compatibility support for 4, 8, and 16Gbps Fibre Channel connectivity as well as support for 10, 25, and 40GbE FCoE connectivity.
  - HPE SN8600B 32Gb SAN Extension Blade providing 16-ports for 32 Gbps Fibre Channel connectivity, 16-ports for 1/10 Gigabit Ethernet (GbE) connectivity, and 2-ports for 40 GbE connectivity for Fibre Channel and IP replication traffic to support disaster recovery and data protection storage solutions over long distances,

The chassis connectivity leverages optical Inter-Chassis Links (ICLs), which provide 128 Gbps bandwidth through a QSFP link. These links can support up to 2 kilometers and connect up to 9 SN8700B chassis in a full-mesh topology or up to 12 SN8700B chassis in a core-edge topology enabling flatter, faster, and simpler fabrics that increase consolidation while reducing network complexity and costs.

UltraScale ICLs are QSFP-based and enable scalable core-edge and mesh chassis topologies. These high-density chassis topologies reduce inter-switch cabling by 75%. With the UltraScale ICL connections residing on the core routing blades instead of consuming ports on the port blades, up to 33% more device ports are available for server and storage connectivity. This maximizes overall port density within the smallest amount of rack space while freeing up front-facing device ports for server and storage connectivity.

The SN8700B 8-slot Director supports 32 4X50Gb ICL ports, providing the equivalent of 128 ports, and the SN8700B 4-slot Director supports 16 4X50Gb ICL ports, providing the equivalent of 64 ports. SN8700B ICLs are backward-compatible and can connect to SN8600B ICL ports, including connectivity with 2 km QSFPs at speeds of 32 Gbps (4x32) or the SN8000B at speeds of 16Gbps (4x16).

HPE Power Pack+ set of tools provide a breakthrough hardware and software solution that helps simplify fabric monitoring, increase operational stability, and dramatically reduce costs by continual monitoring of the fabric's health and performance with actionable insights to remedy network problems quickly. Power Pack+ is pre-configured on every SN8700B 8-Slot Director and SN8700B 4-Slot Director.



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## Overview

Fabric Vision technology (Included in HPE PowerPack+ Software) is the building block to realize the autonomous SAN for the on-demand data center and simplifies monitoring, while maximizing network availability, and dramatically reducing costs.

New Fabric Vision enhancements take advantage of IO Insight and VM Insight (included with Fabric Vision), which provides organizations with deeper visibility throughout a storage fabric or into the performance of their environments at a VM level. This enhanced visibility enables administrators to quickly identify the source of degraded application or VM performance at the host and storage tiers, reducing time to resolution. The SN8700B Director can optimize the performance of NVMe over Fibre Channel by leveraging integrated, non-intrusive, real-time monitoring and alerts. This proactive monitoring of NVMe over Fibre Channel traffic and VMs provides administrators with key insights for maintaining optimal network health and performance. IO Insight proactively monitors IO performance and behavior through integrated network sensors, providing deep insight into problems and helping to ensure service levels. These features non-disruptively and non-intrusively gather IO statistics from any device port, then feeds them to a monitoring policy that sets thresholds and generates alerts. VM Insight applies IO Insight visibility for each VM. Integrated VM, application-, and device-level IO latency and IOPS monitoring enables administrators to set the baseline for application performance and identify the VM or physical layer responsible for the degraded performance.

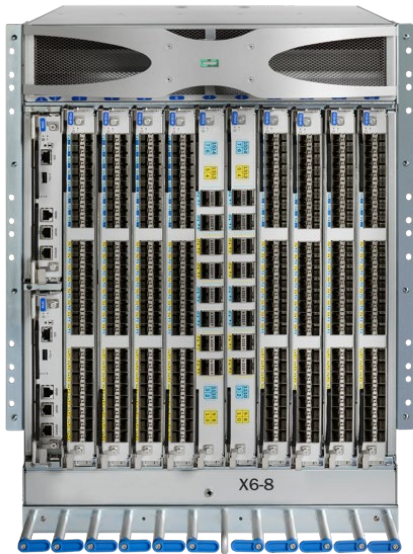
### Fabric Operating System (FOS) 9.0.1

HPE FOS 9.0.1 is the building block for the autonomous SAN and drastically simplifies and automates SAN management. With FOS 9.0.1, SANs leverage new self-learning capabilities through comprehensive data collection and analytics to understand the impacts of current SAN trends or issues. Additionally, the SAN becomes self-optimizing through incorporating actionable insights about traffic behavior. The SAN is able to automate network management and maximize performance by prioritizing traffic and managing congestion to ensure optimal storage and application performance. Finally a 64Gb SAN raises the bar for availability through automatic avoidance and recovery capabilities. When potential disruptions or outages are detected, the network will automatically mitigate or resolve issues without intervention. Together, Self-Learning, Self-Optimizing, and Self-Healing SANs are a crucial building block that deliver unparalleled SAN performance and reliability.

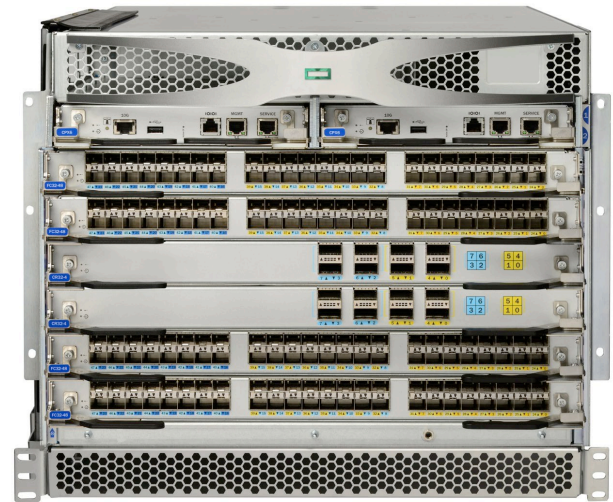
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## Overview



**HPE SN8600B 8-slot 32Gb SAN Director**



**HPE SN8600B 4-slot 32Gb SAN Director**

### HPE SN8600B 32Gb SAN Directors

HPE offers the most complete and comprehensive 32GbSAN Director products. The SN8600B 32Gb SAN Directors combines innovative hardware, software, and integrated network sensors, ensuring the industry's highest level of operational stability, easy manageability and redefining application performance. Breakthrough 32 Gbps performance accelerates application response time, eliminating I/O bottlenecks and unleashes the full performance of flash and next generation NVMe-based storage. They consistently deliver five-9s availability in the world's most demanding data centers. And with non-disruptive, hot-pluggable components and a no-single-point-of-failure design, the SN8600B is truly the enterprise-class director for today's storage infrastructure.

The HPE SN8600B SAN Director is available in two modular form factors (available in both: port-side intake and port-side exhaust airflow models) to increase business agility with seamless storage connectivity and flexible deployment offerings.

- Built for large enterprise networks, the SN8600B 8-slot Director is a 14U chassis and has eight vertical blade slots to provide up to 384 32 Gbps Fibre Channel device ports and 32 additional 128 Gbps Inter-Chassis Link (ICL) ports. This provides up to 20.48 Tbps of chassis bandwidth to address next-generation I/O- and bandwidth-intensive applications.
- Built for midsize networks, the SN8600B 4-slot Director has four horizontal blade slots to provide up to 192 32 Gbps Fibre Channel device ports and 16 additional 128 Gbps ICL ports. This provides up to 10.24 Tbps of aggregate chassis bandwidth and are ideal foundation for highly virtualized environments.
- Each blade slot can be populated with the following optional blades :
  - HPE SN8600B 32Gb 64-port Fibre Channel Blade provides 64 ports of 32Gbps Fibre Channel or 10Gb/25Gb/40Gb Fibre Channel over Ethernet (FCoE) connectivity via 16 front QSFP ports and is NVMe-ready. The blade comes pre-bundled with 8 32Gb QSFP optics.
  - HPE SN8600B 32Gb 48-port Fibre Channel port blade provides 48 32 Gbps Fibre Channel ports and is NVMe-ready. This is available in 2 options - Bundled with 48 32Gb SFP+ and Standard configuration (without SFP+).
  - HPE SN8600B 32Gb SAN Extension Blade provides 16-port for 32 Gbps Fibre Channel connectivity, 16-port for 1/10 Gigabit Ethernet (GbE) connectivity, and 2-ports for 40 GbE connectivity for Fibre Channel and IP replication traffic to support disaster recovery and data protection storage solutions over long distances, This is available in 2 options - Bundled with (16) 32Gb SFP+ and Standard configuration (without SFP+).





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## Overview

The HPE SN8600B 32Gb SAN Director is available in both air-flow models: Non-port side Intake (NPI) and Non-port side Exhaust (NPE or reverse air-flow) to support our customer with their cooling strategy. This also provides our customers the flexibility to rack-install data center equipment suitable to the cooling needs augmenting the decision for hot/cold aisle network designs.

The chassis connectivity leverages optical Inter-Chassis Links (ICLs), which provide 128 Gbps bandwidth through a QSFP link. These links can support up to 2 kilometers and connect up to 8 SN8600B Directors, enabling flatter, faster, and simpler fabrics that increase consolidation while reducing network complexity and costs.

ICLs enable scalable core-edge and active-active mesh chassis topologies. These high-density chassis topologies reduce inter-switch cabling by 75 percent and free up to 25 percent of ports for servers and storage. This maximizes overall port density within the smallest amount of rack space while freeing up front-facing device ports for server and storage connectivity.

The SN8600B 8-slot Director supports 32 ICL ports, providing the equivalent of 128 32 Gbps ports (4.096 Tbps), and the SN8600B 4-slot Director supports 16 ICL ports, providing the equivalent of 64 32 Gbps ports (2.048 Tbps). SN8600B ICLs are backward-compatible and can connect to SN8000B ICL ports, including connectivity with 2 km QSFPs at speeds of 16 Gbps (4×16). Also, SN8600B ICLs allow multi-director connectivity without the Enterprise ICL license anymore.

The HPE Power Pack+ set of tools provide a breakthrough hardware and software solution that helps simplify fabric monitoring, increase operational stability, and dramatically reduce costs by continual monitoring of the fabrics health and performance with actionable insight to remedy network problems quickly. It is pre-configured on every SN8600B 8-Slot Director and SN8600B 4-Slot Director. Power Pack+ also provides the foundation for integration into HPE storage management tools, enabling infrastructure management through a single-pane-of-glass.

The Fabric Vision technology (Included in HPE PowerPack+ Software) is the building block to realize the autonomous SAN for the on-demand data center and helps simplify monitoring, maximize network availability, and dramatically reduce costs. Beyond IO Insight and VM Insight, Fabric Vision features innovative monitoring, management, and diagnostic capabilities that enable administrators to avoid problems before they impact operations, helping their organizations meet Service Level Agreements (SLAs).

New Fabric Vision enhancements take advantage of IO Insight and VM Insight (included with Fabric Vision), which provides organizations with deeper visibility throughout a storage fabric or into the performance of their environments at a VM level. This enhanced visibility enables administrators to quickly identify the source of degraded application or VM performance at the host and storage tiers, reducing time to resolution. The SN8600B Director can optimize the performance of NVMe over Fibre Channel by leveraging integrated, non-intrusive, real-time monitoring and alerts. This proactive monitoring of NVMe over Fibre Channel traffic and VMs provides administrators with key insights for maintaining optimal network health and performance. IO Insight proactively monitors IO performance and behavior through integrated network sensors, providing deep insight into problems and helping to ensure service levels. This capability non-disruptively and non-intrusively gathers IO statistics from any device port, then feeds them to a monitoring policy that sets thresholds and generates alerts. VM Insight applies IO Insight visibility for each VM. Integrated VM, application-, and device-level IO latency and IOPS monitoring enables administrators to set the baseline for application performance and identify the VM or physical layer responsible for the degraded performance.

For investment protection, HPE SN8600B Directors offer three generations of backward-compatibility support for connectivity to 4, 8, and 16 Gbps Fibre Channel products. Furthermore, the SN8600B Directors supports future Fibre Channel generations as a 64Gb-ready storage networking platform and allows for current 32Gb and future generation switch blade modules to be added within the chassis.

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## Standard Features

### HPE SAN Director Highlights

#### HPE SN8700B 64Gb SAN Director

Purpose-built for scalability to accommodate growth and power large-scale storage environments. With a 50% latency reduction compared to the previous generation, HPE SN8700B Directors maximize the performance of NVMe storage and high transaction workloads, eliminating IO bottlenecks and unleashing the full performance of next generation storage. In addition, the HPE SN8700B Director lays the foundation for the autonomous SAN. With autonomous SAN technology, the director harnesses the power of analytics and the simplicity of automation to optimize performance, ensure reliability, and simplify management.

#### Key Features

- Scale more devices, applications, and workloads with 64Gbps links
- Maximize NVMe and high transaction workloads with 50% lower network latency
- Greater workload bandwidth with total system bandwidth up to 31Tbps
- Transform telemetry data into actionable insights to optimize performance and ensure reliability
- Automate actions to simplify management and resolve issues without intervention
- Increase visibility and simplify operations with a modern SAN management tool
- Seamlessly integrate next generation NVMe into the storage fabric without a disruptive rip-and replace
- Design flexible architectures to increase agility with concurrent Fibre Channel, NVMe, FICON, FCIP, or FCoE connectivity
- Extend replication over distance with a highly-scalable extension solution for Fibre Channel, IP, and FICON

#### HPE SN8600B 32Gb SAN Director

Purpose-built for large Enterprise deployments to meet relentless growth, mission-critical application demands, and maximize space utilization with industries highest FC port density. SN8600B with 32Gb Fibre Channel, delivers unmatched 32Gb performance, reduced latency and futureproofed for slower FC speeds, NVMe storage and future 64Gb technologies.

#### Key Features

- Enhances operational stability, maximizes application performance, and increases business agility with enterprise-class 32Gb directors Consolidates infrastructure with 128 Gbps ICL connectivity for simpler, flatter, low-latency fabrics, and scales up to 512 ports and more using ICL ports.
- Greater workload bandwidth with total system bandwidth up to 20Tbps
- Simplifies end-to-end management of large-scale environments by automating monitoring and diagnostics
- Automatically detects degraded application or device performance through integrated network sensors
- Extends replication over distance with a highly scalable extension solution for Fibre Channel, IP, and FICON
- Simplifies configuration automation and enables integrated advanced services across the Fabric with standard REST APIs, PyFOS and Ansible support to automate repetitive tasks error free, these features are available in FOS 8.2.0a
- Seamlessly integrates next-generation NVMe over Fabrics with 32Gb Fibre Channel networks without a disruptive rip and replace, and with the HPE SN6800B 32Gb 64-Port Blade and SN8600B Director you can optimize the performance of NVMe over Fibre Channel by leveraging integrated, non-intrusive, real-time monitoring and alerts.
- Mitigates risk with backward-compatibility while further protecting future investments with 64Gb -ready support

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## Performance

- **SN8700B 64Gb 8-slot SAN Director**
  - With 48-port 64Gbps port blades: 31Tb/s of aggregate chassis bandwidth (384 device ports with a 64Gb/s data rate plus 32 4x50Gb ICLs)
  - With 64-port 32Gbps port blades: 22.8Tb/s of aggregate chassis bandwidth (512 device ports with a 32Gbps data rate plus 32 4x50Gb ICLs)
- **SN8700B 64Gb 4-Slot SAN Director**
  - With 48-port 64Gbps port blades: 15.5Tb/s of aggregate chassis bandwidth (192 device ports with a 64Gbps data rate plus 16 4x50Gb ICLs)
  - With 64-port 32Gbps port blades: 11.4Tb/s of aggregate chassis bandwidth (256 device ports with a 32Gbps data rate plus 16 4x50Gb ICLs)



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## Standard Features

- **SN8600B 32Gb 8-slot SAN Director**
    - Up to 512 ports (equivalent to 640 with ICLs) at 32 Gb speed
    - 20.48 Tbps aggregate chassis bandwidth
    - 32 ICL ports, providing the equivalent of 128 32 Gbps ports (4.096 Tbps),
    - 2.048 Tbps bandwidth per slot, providing line-rate performance for the HPE SN8600B 64-port blade
  - **SN8600B 32Gb 4-Slot SAN Director**
    - Up to 256 ports (equivalent to 256 with ICLs) at 32 Gb speed
    - 10.24 Tbit/s aggregate chassis bandwidth
    - 16 ICL ports, providing the equivalent of 64 32 Gbps ports (2.048 Tbps)
    - 2.048 Tbps bandwidth per slot, providing line-rate performance for the HPE SN8600B 64-port blade
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## SAN scalability

- **The SN8700B 8-Slot Director** scales up to 384 64Gbps plus 32 4x50Gb ICLs (or 512 32 Gbps ports or a 640-port equivalent with 32 QSFP ICL ports providing 128 32Gbps ports) in a single switch domain.
- **The SN8700B 4-Slot Director** scales up to 192 64Gbps plus 16 4x50Gb ICLs (or 256 32 Gbps ports or a 320-port equivalent with 16 QSFP ICL ports providing 64 32Gbps ports) in a single switch domain.
- **The SN8600B 8-Slot Director** scales up to 512 32 Gbps ports or a 640-port equivalent with 32 QSFP ICL ports providing 128 32Gbps ports in a single switch domain.
- **The SN8600B 4-Slot Director** scales up to 256 32 Gbps ports or a 320-port equivalent with 16 QSFP ICL ports providing 64 32Gbps ports in a single switch domain.

Please see the following web site for SAN configuration support information:

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

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## High-availability features

- Redundant, hot-swappable components
  - Separate Control Processor (CP) and Core (CR) switching blades
  - No active components on the backplane
  - Redundant hot swappable power and cooling subsystems
  - Enhanced data integrity on all data paths
  - Fabric Shortest Path First (FSPF) rerouting around failed links
  - Integration with SNMP managers
  - Automatic Control Processor fail over
  - Non-disruptive "hot" software code loads and activation
  - Easy configuration, save and restore
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## Advanced Fabric Services

- Fabric Vision (Includes IO Insight Software for SN8600B 32Gb Director) and optimizes NVMe performance through integrated real-time latency monitoring with IO Insight
  - ISL Trunking
  - Hardware Enforced Zoning
  - Frame Filtering
  - Web Tools
  - End-to-End Performance Analysis
  - Extended Fabrics
  - Adaptive Networking
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## Standard Features

### 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.
  - A maximum of two B-series SAN Director switches currently are supported to ship configured to order from the factory in a 42U, 10000 (10KG2) and Intelligent Series cabinet. However, 220V PDUs must be configured because 110V PDUs are not supported.
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### Software Components, Standard

#### Remote Switch

The Remote Switch fabric functions with the aid of a bridging device, or network bridge. The network bridge supports Fibre Channel physical interfaces, as well as secondary non-Fibre Channel FCIP physical interfaces.

#### Frame Filtering

An ASIC based capability in the 4 Gb, 8 Gb, 16Gb and 32 Gb family of SAN switches 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 included in the SN8700B and SN8600B SAN Directors hardware. Administrators can organize a physical fabric into logical groups and prevent unauthorized access by devices outside the Zone.

#### WebTools

WebTools is an intuitive and easy-to-use graphical interface that enables organizations to install and configure an SN8700B or SN8600B SAN Directors. SAN administrators can perform the initial configuration and basic management tasks by using a Java-capable, or HTML5 (in FOS 9.0 and later), Web browser from standard laptops, desktop PCs, or workstations from any location within the enterprise.

#### 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.

### SAN Director Power Pack+ Software Bundle

The SN8600B and SN8700B SAN Director Power Pack+ Software bundle includes:

- Fabric Vision
  - Extended Fabric
  - ISL Trunking
  - FICON CUP
  - Integrated Routing (not included in SN8600B)
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### Fabric Vision

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

- **Monitoring and Alerting Policy Suite (MAPS):** A policy-based monitoring tool with pre-built rules and automation that simplifies fabric-wide threshold configuration and monitoring. In addition, administrators can include IO Insight (Available on SN8600B) metrics in MAPS policies to understand the IO profile as well as to be notified of storage IO performance degradation.
- **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.





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## 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
- **Forward Error Correction (FEC):** Enables recovery from bit errors in device connections and ISLs, enhancing transmission reliability and performance.

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## Extended Fabric

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.

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## FICON Support

FICON CUP 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.

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## ISL Trunking

For high performance enhanced ISL connectivity, this license logically groups up to eight E-ports to provide a high bandwidth trunk between two switches. Each 4 or 8-slot director needs its own license. The switch operating system views the trunk as a single, high bandwidth resource (up to 64 Gbps for 8 Gb, or up to 128 Gbps for 16Gb or up to 256 Gbps for 32Gb) when routing connections between switches. Connections are load-balanced across the individual links, which comprise the logical trunk group.

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## 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.

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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.



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## Standard Features

- 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 8Gb, 16Gb, 32Gb and 64Gb FC Switches and Directors.

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### 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 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 64Gb, 32Gb, 16Gb and 8Gb FC switches with FOS 7.4.0a or later.
  - A list of supported HPE FC Adapters can be found at <https://www.hpe.com/storage/spock>
  - Supports 3PAR StoreServ storage with 3.2.2 or later with only 16Gb target ports on HPE 3PAR StoreServ storage.
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## Optional Licenses

### Inter Chassis Link (ICL) License

Inter Chassis Links (ICLs) harness unused ports to connect the switching backplane of SAN Directors. The HPE SAN Directors offer the latest ICL technology which includes new optical ports, higher port density, and support for standard optical cables up to 100 meters or up to 2km with 2km QSFP+. ICL support enables flatter, faster, and simpler fabrics that increase consolidation while reducing network complexity and costs.

ICLs enable scalable core edge and active-active mesh chassis topologies. These high-density chassis topologies reduce inter-switch cabling by 75 percent and free up to 25% of ports for server and storage. This maximizes overall port density in the lowest amount of rack space while freeing up front-facing device ports for server and storage connectivity.

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### HPE SN8700B SAN Director ICL

The chassis connectivity leverages optical Inter-Chassis Links (ICLs), which provide 200 Gbps bandwidth through a QSFP link. These links can support up to 2 kilometers and connect up to 9 SN8700B chassis in a full-mesh topology or up to 12 SN8700B chassis in a core-edge topology enabling flatter, faster, and simpler fabrics that increase consolidation while reducing network complexity and costs.

UltraScale ICLs are QSFP-based and enable scalable core-edge and mesh chassis topologies. These high-density chassis topologies reduce interswitch cabling by 75%. With the UltraScale ICL connections residing on the core routing blades instead of consuming ports on the port blades, up to 33% more device ports are available for server and storage connectivity. This maximizes overall port density within the smallest amount of rack space while freeing up front-facing device ports for server and storage connectivity



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## Standard Features

The SN8700B 8-slot Director supports 32 4x50Gb ICL ports, providing the equivalent of 128 ports, and the SN8700B 4-slot Director supports 16 4x50Gb ICL ports, providing the equivalent of 64 ports. SN8700B ICLs are backward-compatible and can connect to SN8600B ICL ports, including connectivity with 2 km QSFPs at speeds of 32 Gbps (4x32) or the SN8000B at speeds of 16Gbps (4x16).

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### HPE SN8600B SAN Director ICL

The SN8600B 8-slot Director supports 32 ICL ports, providing the equivalent of 128 32 Gbps ports (4.096 Tbps). The SN8600B 4-slot Director supports 16 ICL ports, providing the equivalent of 64 32 Gbps ports (2.048 Tbps). 32Gb ICLs are backward-compatible and can connect to 16Gb ICL ports, including connectivity with 2 km QSFPs at speeds of 16 Gbps (4x16).

HPE SN8600B chassis connectivity leverages optical Inter-Chassis Links (ICLs), which provide 128 Gbps bandwidth through a QSFP link. These links can support up to 2 kilometers and connect up to 12 SN8600B or SN8000B Directors.

A single ICL POD License for 8-slot will enable 16 QSFP ICL ports per chassis and a single ICL POD License for the 4-slot enables 8 QSFP ICL ports per chassis. Therefore, each chassis supports 2 Licenses for full ISL connectivity.

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### HPE B-series SAN Backbone Director Integrated Routing License

Integrated Routing is an optional license which provides native Fibre Channel Routing (FCR) on a per-port basis, rather than limiting routing ports to those on a dedicated routing 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:** Supported for all B-series SAN Directors. Included in PowerPack+ for the SN8700B.

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### FCIP Trunking

FCIP Trunking feature allows multiple IP source and destination address pairs (defined as FCIP circuits) via 1 GE, 10 GE and 40 GE interfaces to provide high bandwidth FCIP tunnel and failover resiliency. In addition, each FCIP circuit supports four QoS classes (Class-F, Hi, Medium and Low Priority), each as a TCP connection.

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### Adaptive Rate Limiting

An FCIP tunnel can be configured a minimum (guaranteed) committed rate as well as a maximum committed rate. FCIP tunnel will run at least the minimum rate. If additional bandwidth is needed, the committed rate will grow until the channel traffic demand is satisfied, maximum committed rate is reached, or the throughput capabilities of the network are reached.

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## Service and Support

### Warranty

- **HPE SN8700B 8-Slot SAN Director**  
Hardware Warranty - 3-year parts; 3-year on-site (standard business hours, next business day response) and 3-year labor.
- **HPE SN8700B 4-Slot SAN Director**  
Hardware Warranty - 3-year parts; 3-year on-site (standard business hours, next business day response) and 3-year labor.
- **HPE SN8700B Director POD ICL License with 4x50Gb QSFP56 8-pack Transceiver Kit**  
Hardware Warranty - 3-year parts; 3-year on-site (standard business hours, next business day response) and 3-year labor.
- **HPE SN8700B Director POD ICL License with 4x32Gb QSFP56 8-pack Transceiver Kit**  
Hardware Warranty - 3-year parts; 3-year on-site (standard business hours, next business day response) and 3-year labor.
- **SN8600B 8-Slot SAN Director**  
Hardware Warranty - 1-year parts; 1-year on-site (standard business hours, next business day response) and 1-year labor.
- **SN8600B 4-Slot SAN Director**  
Hardware Warranty - 1-year parts; 1-year on-site (standard business hours, next business day response) and 1-year labor.

### Notes:

- The hardware warranty covers integrated blades within the director chassis.
- 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.
- Saleable software carries its own warranty, see below.

Software Warranty - Hewlett Packard Enterprise warrants only that the software media will be free of physical defects for a period of ninety (90) days from delivery.

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

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### HPE Pointnext - Service and Support

No matter where you are in your digital transformation journey, you can count on HPE Pointnext Services to provide the expertise you need, when and where you need it.

#### Advisory and Professional Services

Our Digital Next Advisory approach can help you identify, prioritize, and implement the right transformation initiatives to create new edge experiences, get real-time insights from all your data, and modernize your IT to enable new opportunities.

#### Operational Services

Take your IT operations to the next level with expertise and tools that can help save your staff time, manage complexity, and identify new ways to drive efficiency and effectiveness in your IT.

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## Service and Support

### 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** provide 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.

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### 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/completecure>

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### Other related services from HPE Pointnext Services

#### HPE Lifecycle Services

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:





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## Service and Support

### 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

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.

- For a list of the most frequently purchased services using service credits, see the [Universal Service Credits Menu](#)

### 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.

### 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.

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

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## 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.

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## 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 new 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 a new intelligent virtual agent with seamless transition when needed to a live support agent.

Learn more <https://support.hpe.com/hpesc/public/home/signin>

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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/>
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## Configuration Information

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

Description	SKU
HPE SN8700B 8-slot Power Pack+ Director Switch	R6A97A
<b>Notes:</b>	
<ul style="list-style-type: none"> <li>– 64Gb 384-port or 32Gb 512-port capable Fibre Channel Director, 2 control processors, 2 64Gb core blades, rack rails, cable comb Zoning, Web tools, Fabric Vision Enhanced Group Management, Adaptive Networking, ISL Trunking, Extended Fabrics, Integrated Routing and FICON CUP.</li> <li>– Does not include Power Supplies, Fans, Port Blades or SFPs. See below options.</li> </ul>	
HPE SN8700B 4-slot Power Pack+ Director Switch	R6A98A
<b>Notes:</b>	
<ul style="list-style-type: none"> <li>– 64Gb 192-port or 32Gb 256-port capable Fibre Channel Director, 2 control processors, 2 64Gb core blades, rack rails, cable comb Zoning, Web tools, Fabric Vision Enhanced Group Management, Adaptive Networking, ISL Trunking, Extended Fabrics, Integrated Routing and FICON CUP.</li> <li>– Does not include Power Supplies, Fans, Port Blades or SFPs. See below options</li> </ul>	
HPE SN8600B 4-slot Power Pack+ Director Switch	Q0U83B
<b>Notes:</b>	
<ul style="list-style-type: none"> <li>– 32Gb 256-port or 16Gb 256-port capable Fibre Channel Director, 2 control processors, 2 32 Gb core blades, 2 power supplies, rack rails, cable comb Zoning, Web tools, Fabric Vision Enhanced Group Management, Adaptive Networking, ISL Trunking, Extended Fabrics and FICON CUP.</li> <li>– Does not include Port blades or SFPs.</li> </ul>	
HPE SN8600B 4-slot Power Pack+ Port Side Air Intake Director Switch Chassis	R0Q25A
<b>Notes:</b>	
<ul style="list-style-type: none"> <li>– 32Gb 512-port or 16Gb 512-port capable Fibre Channel Director, 2 control processors, 2 32 Gb core blades, rack rails, cable comb Zoning, Web tools, Fabric Vision Enhanced Group Management, Adaptive Networking, ISL Trunking, Extended Fabrics and FICON CUP. Does not include Port blades or SFPs.</li> <li>– Does not include Power supply and fan trays. Requires 2 Power supplies (R0Q26A) and 2 fan trays (R0Q27A) for r1+1 redundancy. For instructions on how to install the Power Supplies and fan trays, please refer to the “Brocade X6-4 Director Hardware Installation Guide” available on the HPE Support Center <a href="http://www.hpe.com/support/hpesc">http://www.hpe.com/support/hpesc</a>.</li> </ul>	

### Step 2 – Additional Port Configurations

Description	SKU
HPE SN8700B 64Gb 48-port 64Gb Short Wave SFP56 Integrated Fibre Channel Switch Blade	R7M12A
<b>Notes:</b>	
<ul style="list-style-type: none"> <li>– Add the appropriate quantity of blades to meet requirements</li> <li>– This blade ships with 48 integrated 64 Gb FC Short Wave Secure transceivers.</li> <li>– Supported in: <ul style="list-style-type: none"> <li>o SN8700B Directors</li> <li>o SN8600B Director that have been upgraded with a pair of core blades (R6A99A or R6B00A)</li> </ul> </li> </ul>	
HPE SN8700B 64Gb 48-port 32Gb Short Wave SFP28 Integrated Fibre Channel Switch Blade	R6B01A
<b>Notes:</b>	
<ul style="list-style-type: none"> <li>– Add the appropriate quantity of blades to meet requirements</li> <li>– This blade ships with 48 integrated 32 Gb FC Short Wave Secure transceivers.</li> <li>– Supported in: <ul style="list-style-type: none"> <li>o SN8700B Directors</li> <li>o SN8600B Director that have been upgraded with a pair of core blades (R6A99A or R6B00A)</li> </ul> </li> </ul>	



## Configuration Information

Description	SKU
HPE SN8700B 64Gb 48-port 32Gb Long Wave SFP28 Integrated Fibre Channel Switch Blade	R6B02A
<b>Notes:</b>	
<ul style="list-style-type: none"> <li>– Add the appropriate quantity of blades to meet requirements</li> <li>– This blade ships with 48 integrated 32 Gb FC Long Wave Secure transceivers.</li> <li>– Supported in:               <ul style="list-style-type: none"> <li>o SN8700B Directors</li> <li>o SN8600B Director that have been upgraded with a pair of core blades (R6A99A or R6B00A)</li> </ul> </li> </ul>	
HPE SN8700B 32Gb 48-port 32Gb Short Wave SFP28 Integrated Fibre Channel Switch Blade	R6B03A
<b>Notes:</b>	
<ul style="list-style-type: none"> <li>– Add the appropriate quantity of blades to meet requirements</li> <li>– This blade ships with 48 integrated 32 Gb FC Short Wave Secure transceivers.</li> <li>– Supported in:               <ul style="list-style-type: none"> <li>o SN8700B Directors</li> <li>o SN8600B Director that have been upgraded with a pair of core blades (R6A99A or R6B00A)</li> </ul> </li> </ul>	
HPE SN8700B 32Gb 48-port 32Gb Long Wave SFP28 Integrated Fibre Channel Switch Blade	R6B04A
<b>Notes:</b>	
<ul style="list-style-type: none"> <li>– Add the appropriate quantity of blades to meet requirements</li> <li>– This blade ships with 48 integrated 32 Gb FC Long Wave Secure transceivers.</li> <li>– Supported in:               <ul style="list-style-type: none"> <li>o SN8700B Directors</li> <li>o SN8600B Director that have been upgraded with a pair of core blades (R6A99A or R6B00A)</li> </ul> </li> </ul>	
HPE SN8700B 8-slot Director Switch Core Blade	R6A99A
<b>Notes:</b>	
<ul style="list-style-type: none"> <li>– For customers with the SN8600B already installed in their SAN and interested in using the 64Gb ready blades (R6B01A, R6B02A, R6B03A, R6B04A), the Core Blade upgrade is an option.</li> <li>– Each SN8600B will require two core blades for the upgrade and these are sold separately.</li> </ul>	
HPE SN8700B 4-slot Director Switch Core Blade	R6B00A
<b>Notes:</b>	
<ul style="list-style-type: none"> <li>– For customers with the SN8600B already installed in their SAN and interested in using the 64Gb ready blades (R6B01A, R6B02A, R6B03Am R6B04A), the Core Blade upgrade is an option.</li> <li>– Each SN8600B will require two core blades for the upgrade and these are sold separately.</li> </ul>	
HPE SN8600B 64/32 Short Wave 8QSFP Integrated Fibre Channel Blade	Q2S19B
<b>Notes:</b>	
<ul style="list-style-type: none"> <li>– Add the appropriate quantity of 64-port blades to meet requirements. Only supported on SN8700B and the SN8600B Directors (Q0U63A, Q0U63B, Q0U83A, Q0U83B) with FOS v8.2.0 or later. A maximum of 2 blades are supported when 4 HPE SN8600B 32Gb SAN Extension Blades (Q0U85B, Q0U87B) are present in the same chassis running FOS v8.2.x. No limit in FOS v9.x.</li> <li>– This blade ships with 8 integrated 32Gb SW QSFP Transceivers.</li> </ul>	
HPE SN8600B 32Gb 48-port Fibre Channel Blade	Q0U84B
<b>Notes:</b> Add the appropriate quantity of 48-port blades to meet requirements	
HPE SN8600B 32Gb Short Wave 48-port SFP+ Integrated Fibre Channel Blade	Q0U86B
<b>Notes:</b>	
<ul style="list-style-type: none"> <li>– Add the appropriate quantity of 48-port blades to meet requirements</li> <li>– This blade ships with 48 integrated 32 Gb FC SW SFP+ transceivers.</li> </ul>	



## Configuration Information

### Description

HPE SN8600B 32Gb SAN Extension Blade

**SKU**

Q0U85B

### Notes:

- Add the appropriate quantity port blades to meet requirements
- Max of 4 units per chassis.

HPE SN8600B 32Gb Short Wave 16-port SFP+ Integrated SAN Extension Blade

Q0U87B

### Notes:

- This blade ships with 16 integrated 32 Gb FC SW SFP+ transceivers.
- Max of 4 units per chassis.

### Director Compatibility Matrix SN8600B and SN8700B

	HPE Product Number and Description	SN8600B Chassis	SN8600B w/ SN8700B Core Blades Chassis	SN8700B Chassis
<b>FOS Requirement</b>		8.x/ 9.x	9.x	9.x
<b>CP Blades</b>		Gen 6	Gen6 w/ FPGA upgrade	Gen 7
<b>SN8700B Port Blades</b>	R7M12A - HPE SN8700B 64Gb 48p 64Gb SW SFP56 Blade R6B01A - HPE SN8700B 64Gb 48p 32Gb SW SFP28 Blade R6B02A - HPE SN8700B 64Gb 48p 32Gb LW SFP28 Blade R6B03A - HPE SN8700B 32Gb 48p 32Gb SW SFP28 Blade R6B04A - HPE SN8700B 32Gb 48p 32Gb LW SFP28 Blade	No	Yes*	Yes*
<b>SN8600B Port Blades</b>	Q0U84B - HPE SN8600B 32Gb 48-port FC Blade Q0U86B - HPE SN8600B 32Gb 48p SFP+ Integrtd Blade Q2S19B - HPE SN8600B 32Gb 64/32 8QSFP FC Blade	Yes	Yes	Yes
<b>SN8600B Extension Blade</b>	Q0U85B - HPE SN8600B 32Gb SAN Extension Blade Q0U87B - HPE SN8600B 32Gb 16p SW SFP+ Extn Blade	Yes	Yes	Yes
<b>SN8600B Core Blade</b>	Not available for purchase	Yes	No	No
<b>SN8700B Core Blade</b>	R6A99A - HPE SN8700B 8-slot Dir Swch Core Blade R6B00A - HPE SN8700B 4-slot Dir Swch Core Blade	No	Yes	Yes

**Notes** \* Secure optical transceivers required for this configuration. See list of Secure optical transceivers in “Step 3 – Additional Options”. For products not requiring Secure optical transceivers, the Secure transceivers are compatible.

### Inter Chassis Links (ICL)

#### ICL Compatibility Matrix

##### ICL Min-Max Table Per Director

Chassis	ICL Kit or License	Ports Enabled By Kit or License	Min	Max
SN8700B – 8 Slot	R6B17A, R6B18A, R6B08A OR R8W24A	8	1	4
SN8700B – 4 Slot	R6B17A, R6B18A, R6B08A OR R8W24A	8	1	2
SN8600B – 8 Slot	Q0T80AAE*	16	1	2
SN8600B – 4 Slot	Q0T81AAE*	8	1	2

**Notes:** \*Requires QSFP optics, see Fibre Channel Optics Transceivers section below for options

ICL Compatibility Table – Minimum Requirements

The minimum requirements for ICLs has changed, one ICL kit per director is allowed for all configurations.



## Configuration Information

Description	SKU
HPE SN8700B Director POD ICL License with 4x50Gb QSFP56 8-pack Transceiver Kit	R6B17A
<b>Notes:</b>	
<ul style="list-style-type: none"> <li>The ICL transceiver kit includes Secure transceivers. When connecting two SN8700B 8-slot Directors via ICL, it will require a minimum of two POD ICL Kits (maximum of 8, four for each Director) and when connecting two SN8700B 4-slot Directors via ICL it will require a minimum of two POD ICL Kits (maximum of 4, two for each Director).</li> <li>Each HPE SN8700B ICL Kit also requires eight MPO cables for connectivity (QK729A, QK731A or H6Z30A).</li> </ul>	
HPE SN8700B Director POD ICL License with 4x32Gb QSFP28 8-pack Transceiver Kit	R6B18A
<b>Notes:</b>	
<ul style="list-style-type: none"> <li>The ICL transceiver kit includes Secure transceivers. When connecting two SN8700B 8-slot Directors via ICL, it will require a minimum of two POD ICL Kits (maximum of 8, four for each Director) and when connecting two SN8700B 4-slot Directors via ICL it will require a minimum of two POD ICL Kits (maximum of 4, two for each Director). The 32Gbps QSFPs can be used to connect an SN8700B Director to an SN8600B Director. This requires a minimum of two ICL Kits R6B18A for the SN8700B 8-Slot Director, an HPE SN8600B 8-slot Dir Ent/POD ICL LTU (Q0T80BAE) and an HPE SN8600B 4S 4X32GB 16PK SW4 ICL XCVR (Q0U89A).</li> <li>The 32Gbps QSFPs can also be used to connect an SN8700B Director to an SN8000B Director. The 32Gbps QSFP28 SWL transceivers on the SN8700B Director core routing blades operate at 4x32Gbps and 4x16Gbps speeds so can be used for an ICL connection between a 32Gbps QSFP on a SN8700B Director core routing blade and a 16Gbps QSFP transceiver on a SN8000B Director core routing blade.</li> <li>Each HPE SN8700B ICL Kit also requires eight MPO cables for connectivity (QK729A, QK731A or H6Z30A).</li> </ul>	
HPE B-series SN8700B Director POD ICL License with 4x32Gb QSFP28 2km 8-pack Transceiver Kit	R6B08A
<b>Notes:</b>	
<ul style="list-style-type: none"> <li>The ICL transceiver kit includes Secure transceivers. When connecting two SN8700B 8-slot Directors via ICL, it will require a minimum of two POD ICL Kits (maximum of 8, four for each Director) and when connecting two SN8700B 4-slot Directors via ICL it will require a minimum of two POD ICL Kits (maximum of 4, two for each Director).</li> <li>The 32Gbps QSFPs can be used to connect an SN8700B Director to an SN8600B Director. This requires two ICL POD Kits for the SN8700B 8-Slot Director, an HPE SN8600B 8-slot Dir Ent/POD ICL LTU (Q0T80BAE) and two HPE B-series 4X32Gb 8pks LW 2km QSFP XCVR (Q8K15A).</li> <li>Requires MTP to MTP 12-fiber Parallel Single Mode Cable up to 2Km in length. Contact your Hewlett Packard Enterprise sales representative or channel partner for more information on recommended cable suppliers.</li> </ul>	
HPE SN8700B Director POD ICL License with 4x50Gb QSFP56 2km 8-pack Transceiver Kit	R8W24A
<b>Notes:</b>	
<ul style="list-style-type: none"> <li>The ICL transceiver kit includes Secure transceivers. When connecting two SN8700B 8-slot Directors via ICL, it will require a minimum of two POD ICL Kits (maximum of 8, four for each Director) and when connecting two SN8700B 4-slot Directors via ICL it will require a minimum of two POD ICL Kits (maximum of 4, two for each Director).</li> <li>The 64Gbps QSFPs cannot be used to connect an SN8700B Director to an SN8600B Director.</li> </ul>	
HPE SN8600B 8-slot Director Enterprise and Port-on-Demand Inter Chassis Link E-LTU	Q0T80BAE
<b>Notes:</b>	
<ul style="list-style-type: none"> <li>(Physical License – Q0T80B)</li> <li>Each HPE SN8600B 8-slot Director requires this license for ICL connectivity (0T80BAE) and also requires (Q2R30A) 4x32Gb QSFP or (H6Z76A) 4x16Gb QSFP and cables for ICL connectivity (QK729A, QK731A or H6Z30A).</li> </ul>	



## Configuration Information

### Description

HPE SN8600B 4-slot Director Enterprise and Port-on-Demand Inter Chassis Link E-LTU

**SKU**  
Q0T81BAE

#### Notes:

- (Physical License – Q0T81B)
- Each HPE SN8600B 4-slot Director requires this license for ICL connectivity (Q0T81BAE) and also requires (Q2R29A) 4x32Gb QSFP or (Q0U90A) 4x16Gb QSFP and cables for ICL connectivity (QK729A, QK731A or H6Z30A).

### HPE SAN Director Inter Chassis Link Cable

HPE Premier Flex MPO/MPO Multi-mode OM4 12 Fiber 10m Cable

QK729A

**Notes:** One cable/ICL connector supports 4 ports of connectivity between 2 chassis

HPE Premier Flex MPO/MPO Multi-mode OM4 8 Fiber 50m Cable

QK731A

**Notes:** One cable/ICL connector supports 4 ports of connectivity between 2 chassis

HPE Premier Flex MPO/MPO OM4 100m Cable

H6Z30A

**Notes:** One cable/ICL connector supports 4 ports of connectivity between 2 chassis

### Add Software

HPE SN8600B 128-port Integrated Routing E-LTU

Q0T79BAE

**Notes:** (Physical License – Q0T79B)

### Management

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)

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.
- While installing HPE SANnav Management software, there is an option to install a 90-day full-featured free trial version of the SANnav Management Portal and SANnav Global View version. The trial version includes full functionality but expires after the trial period.



## Configuration Information

- 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 needs to purchase a new license to continue using the software. Software renewal via HPE PointNext is not allowed/supported.
- 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.

### Step 3 – Additional Options

- The SN8700B and SN8600B director products have different bundled configurations depending on the model as follows:
- The SN8700B Directors (R6A97A and R6A98A) do not come with power supplies or fan trays included
- The SN8600B Directors (R0Q24A and R0Q25A) with Port-Side-Intake do not come with power supplies or fan trays included
- The SN8600B Directors (Q0U63B and Q0U83B) with Port-Side-Exhaust come with power supplies and fan trays included.
  - For the 8-slot there are 3 power supplies (1 addition power supply can be added) and 3 fans included
  - For the 4-slot there are 2 power supplies and 2 fans included

#### Port Side Exhaust

##### Description

HPE SN8600B/SN8700B 3000W 240VAC Director Power Supply

**SKU**

Q0U92A

**Notes:** Power supply for the HPE SN8700B and optional upgrade for the SN8600B 8-slot Director (Q0U63B).

HPE SN8700B Director Fan Tray

R6B07A

**Notes:** Fan for the HPE SN8700B to be ordered with HPE SN8600B/SN8700B 3000W 240VAC Director Power Supply (Q0U92A). The HPE SN8700B 4-Slot Director requires 2 Fan Trays. The HPE SN8700B 8-Slot Director requires 3 Fan Trays.

#### Port Side Intake

HPE SN8600B/SN8700B 3000W 240VAC Port Side Air Intake Director Power Supply

R0Q26A

**Notes:** To be ordered with HPE SN8700B or the SN8600B 32Gb Port Side Air Intake SAN Director models (R0Q24A, R0Q25A) only. The HPE SN8600B/SN8700B 4-Slot Director requires 2 Power Supplies for 1+1 redundancy. The HPE SN8600B/ SN8700B 8-Slot Director requires 3 Power Supplies for 2+1 redundancy. A fourth Power Supply may be added for 2+2 redundancy.

HPE SN8600B/SN8700B 300W Port Side Air Intake Director Fan Tray

R0Q27A

**Notes:** To be ordered with the HPE SN8600B/SN8700B 3000W 240VAC Port Side Air Intake Director Power Supply (R0Q26A). Order with the HPE SN8700B or the SN8600B 32Gb Port Side Air Intake SAN Director models (R0Q24A, R0Q25A) only. The HPE SN8600B/SN8700B 4-Slot Director requires 2 Fan Trays. The HPE SN8600B/SN8700B 8-Slot Director requires 3 Fan Trays.

#### Fibre Channel Optical Transceivers

##### Secure Optical Transceivers

**Notes:** The SN8700B Director blades requires the use of Secure transceivers.

HPE B-series 16Gb SFP+ Short Wave 1-pack Secure Transceiver

R6B10A

HPE B-series 16Gb SFP+ Short Wave 8-pack Secure Transceiver

R6W28A

HPE B-series 16Gb SFP+ Long Wave 10km 1-pack Secure Transceiver

R6B11A

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



## Configuration Information

### Description

	<b>SKU</b>
HPE B-series 32Gb SFP28 Extended Long Wave 25km 1-pack Secure Transceiver	R9S31A
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 64Gb SFP56 Long Wave 10km 1-pack Secure Transceiver	R9S29A
HPE B-series 64Gb SFP56 Long Wave 10km 8-pack Secure Transceiver	R9S30A
HPE B-series 64Gb SFP56 Extended Long Wave 25km 1-pack Secure Transceiver	R9S28A
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
HPE B-series 4x50Gb QSFP56 Short Wave Inter Chassis Link 1-pack Secure Transceiver	R6B19A
HPE B-series 4x32Gb QSFP28 Short Wave 100m 1-pack Secure Transceiver	R6B20A
HPE B-series 16Gb SFP+ Extended Long Wave 25km 1-pack Secure Transceiver	R6B21A

### Optical Transceivers

HPE B-series 4x32Gb 16-pack Short Wave QSFP Transceiver	Q2R30A
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**Notes:** Only supported in SN8600B Director Blades. When connecting two SN8600B 8-slot Directors via ICL, requires the SN8600B 8-slot Director Inter Chassis Link License (Q0T80A, Q0T80BAE). This QSFP requires minimum version of FOS 8.1.0b and offers break-out capability.

HPE B-series 4x32Gb 8-pack Short Wave QSFP Transceiver	Q2R29A
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**Notes:** Only supported in SN8600B Director Blades . When connecting two SN8600B 4-slot Directors via ICL, requires the SN8600B 4-slot Director Inter Chassis Link License (Q0T81A, Q0T81BAE). This QSFP requires minimum version of FOS 8.1.0b and offers break-out capability.

HPE B-series 4x32Gb 1-pack Long Wave 2km QSFP Transceiver	Q2R31A
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**Notes:** Only supported in SN8600B Director Blades. This QSFP requires minimum version of FOS 8.1.0b.

HPE B-series 4x32Gb 8-pack Long Wave 2km QSFP Transceiver	Q8K15A
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**Notes:** Only supported in SN8600B Director Blades. This QSFP requires minimum version of FOS 8.1.0b.

HPE B-series 16Gb SFP+ Short Wave Transceiver	QK724A
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**Notes:** Only supported in SN8600B Director Blades

HPE B-series 32Gb SFP28 Short Wave 8-pack Transceiver	R0Q23A
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**Notes:** Only supported in SN8600B Director Blades

HPE B-Series 100GbE QSFP28 SR4 Transceiver	Q2S22A
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**Notes:** Only supported in SN8600B Director Blades.

HPE B-series 40GbE Long Range QSFP+ Transceiver	E7Y75A
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**Notes:** Only supported in SN8600B Director Blades.

HPE B-series 40GbE Short Range QSFP+ Transceiver	E7Y76A
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#### Notes:

- Only supported in SN8600B Director Blades.
- HPE SN8600B 32Gb SAN Director 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

HPE B-series 16Gb SFP+ Long Wave 10km Transceiver	QK725A
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**Notes:** Only supported in SN8600B Director Blades.



## Configuration Information

### Description

HPE B-series 4x16Gb SW QSFP+ 100m 16-pack Transceiver

**SKU**  
H6Z76A

**Notes:** Only supported in SN8600B Director Blades.

### Converged Enhanced Ethernet (CEE) Optical Transceivers

HPE B-series 10GbE Short Wave SFP+ Transceiver

AP823A

#### Notes:

– Only supported in SN8600B Director Blades. HPE B-series 10GbE Short Wave SFP+ Transceiver

### Short Wave Transceiver Performance

Distance - Maximum	HPE Standard OM3 Cable	HPE PremierFlexOM3+ 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
8Gb performance:	150 meters	150 meters	190 meters
4Gb performance:	380 meters	380 meters	400 meters

### USB Device

HPE B-series 4G USB Drive

N9Y63A

### Optical cables

#### HPE PremierFlex OM4+ Fiber Optic Cables

HPE Premier Flex LC/LC Multi-mode OM4 2 Fiber 1m Cable

QK732A

HPE Premier Flex LC/LC Multi-mode OM4 2 Fiber 2m Cable

QK733A

HPE Premier Flex LC/LC Multi-mode OM4 2 Fiber 5m Cable

QK734A

HPE Premier Flex LC/LC Multi-mode OM4 2 Fiber 15m Cable

QK735A

HPE Premier Flex LC/LC Multi-mode OM4 2 Fiber 30m Cable

QK736A

HPE Premier Flex LC/LC Multi-mode OM4 2 Fiber 50m Cable

QK737A

#### HPE Premier Flex OM4 QSFP Fiber Optic Cables

HPE Premier Flex MPO/MPO Multi-mode OM4 12 Fiber 1m Cable

Q1H63A

HPE Premier Flex MPO/MPO Multi-mode OM4 12 Fiber 2m Cable

Q1H64A

HPE Premier Flex MPO/MPO Multi-mode OM4 12 Fiber 5m Cable

Q1H65A

HPE Premier Flex MPO/MPO Multi-mode OM4 12 Fiber 10m Cable

QK729A

HPE Premier Flex MPO/MPO Multi-mode OM4 12 Fiber 15m Cable

Q1H66A

HPE Premier Flex MPO/MPO Multi-mode OM4 12 Fiber 30m Cable

Q1H67A

HPE Premier Flex MPO/MPO Multi-mode OM4 8 Fiber 50m Cable

QK731A

HPE Premier Flex MPO/MPO OM4 100m Cable

H6Z30A

#### 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

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## Configuration Information

### High Density Cables

#### QSFP to 4xLC Breakout Cables

Description	SKU
HPE Multi Fiber Push On to 4 x Lucent Connector 5m Cable	K2Q46A
HPE Multi Fiber Push On to 4 x Lucent Connector 15m Cable	K2Q47A
HPE Premier Flex MPO to 4xLC 30m Cbl	Q1H68A
HPE Premier Flex MPO to 4 x Lucent Connector 50m Cable	Q1H69A

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## Technical Specifications

### Family Information

Features	SN8000B 8-Slot SAN Director Power Pack+	SN8600B 8-Slot SAN Director Power Pack+	SN8700B 8-Slot SAN Director Power Pack+
<b>Targeted Environment</b>	Cloud Optimized Data Centers	Cloud Optimized Data Centers	Cloud Optimized Data Centers
<b>Port Bandwidth</b>	Up to 16Gbps	Up to 32 Gbps	Up to 64Gbps
<b>Aggregate device bandwidth</b>	10.2Tbps	20.48 Tbps	31 Tbps
<b>OS Support</b>	<b>Notes: Please Refer to SPOCK <a href="https://www.hpe.com/storage/spock">https://www.hpe.com/storage/spock</a></b>		
<b>Storage system support</b>	HPE Primera, 3PAR StoreServ, Nimble, StoreVirtual , P900/XP7, MSA		
<b>Ports</b>	Up to 512 SFP	512 32 Gbps ports or a 640-port equivalent with 128 Gbps (32 Gbps×4 QSFP ports)	512 ports - 384 device ports with a 64Gbps data rate plus 32 4x50Gb ICLs or 640 ports - 512 device ports with a 32Gbps data rate plus 32 4x50Gb ICLs
<b>SFP</b>	B-series	B-series	B-series Secure
<b>Advanced Trunking</b>	Included with Power Pack	Included with Power Pack	Included with Power Pack
<b>Adaptive Networking</b>	Yes (included)	Yes (included)	Yes (included)
<b>Form factor</b>	14U	14U	14U
<b>Zoning Software</b>	Yes (included)	Yes (included)	Yes (included)
<b>Hot plug, redundant power supplies</b>	Yes	Yes	Yes
<b>Hot plug fans</b>	Yes	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+
<b>Targeted Environment</b>	Cloud Optimized Data Centers	Cloud Optimized Data Centers	Cloud Optimized Data Centers
<b>Port Bandwidth</b>	Up to 16Gbps	Up to 32Gbps	Up to 64Gbps
<b>Aggregate device bandwidth</b>	5.1 Tbps	10.24 Tbps	15.5 Tbps
<b>OS Support</b>	<b>Notes: Please Refer to SPOCK <a href="https://www.hpe.com/storage/spock">https://www.hpe.com/storage/spock</a></b>		
<b>Storage system support</b>	HPE Primera, 3PAR StoreServ, Nimble, StoreVirtual , P9500/XP7, MSA		
<b>Ports</b>	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 4x50Gb ICLs or 320 ports - 256 device ports with a 32Gbps data rate plus 16 4x50Gb ICLs
<b>SFP</b>	B-series	B-Series	B-series Secure
<b>Advanced Trunking</b>	Included with Power Pack or Optional Upgrade	Included with Power Pack	Included with Power Pack
<b>Adaptive Networking</b>	Included	Included	Yes (included)
<b>Form factor</b>	9U	9U	9U
<b>Zoning Software</b>	Yes (included)	Yes (Included)	Yes (included)
<b>Hot plug, redundant power supplies</b>	Yes	Yes	Yes
<b>Hot plug fans</b>	Yes	Yes	Yes



## Technical Specifications

Features	SN6000B 16 Gb FC Switch and SN6000B 16 Gb FC Power Pack+	SN6600B 32 Gb FC Switch	SN6700B 64Gb with 24 32Gb Integrated Secure SFP28
<b>Targeted Environment</b>	Workgroups, Departments	Workgroups, Departments	Workgroups, Departments
<b>Fibre Channel Port Bandwidth</b>	16 Gbps	32 Gbps	64Gb
<b>Aggregate device bandwidth</b>	384- 768 Gbps	2 Tbps	3.5 Tbps
<b>OS Support</b>	<b>Notes: Please Refer to SPOCK <a href="https://www.hpe.com/storage/spock">https://www.hpe.com/storage/spock</a></b>		
<b>Storage system support</b>	HPE Primera, 3PAR StoreServ, Nimble, StoreVirtual , P9500/XP7, MSA		
<b>FC Ports</b>	24 or 48 Enabled 48 Max	24 or 48 enabled 64 Max	24 Enabled 56 Max
<b>SFP</b>	B-series	B-series Optics (16 Gb or 32 Gb)	B-series Secure 24 32Gb SFP28 included
<b>Advanced Trunking</b>	Included with Power Pack+ or Optional Upgrade	Included with Power Pack+ or Optional Upgrade	Included in Power Pack+ on all switches
<b>Adaptive Networking</b>	Included	Included	Included
<b>Form factor</b>	1U	1U	1U
<b>Zoning Software</b>	Yes (Included)	Yes (Included)	Yes (Included)
<b>Hot plug, redundant power supplies</b>	Yes	Yes	Yes
<b>Hot plug fans</b>	Yes (integrated with power supply)	Yes (integrated with power supply)	Yes (integrated with power supply)



## Technical Specifications

Features	SN3000B 16Gb FC Switch	SN3600B 32Gb FC Switch and SN3600B 32Gb FC Power Pack+
<b>Targeted Environment</b>	Workgroups, Departments	Workgroups, Departments
<b>Fibre Channel Port Bandwidth</b>	16Gbps	32Gbps
<b>Aggregate device bandwidth</b>	192-384 Gbps	768 Gbps
<b>OS Support</b>	<b>Notes: Please Refer to SPOCK</b> <a href="https://www.hpe.com/storage/spock">https://www.hpe.com/storage/spock</a>	
<b>Storage system support</b>	HPE Primera, 3PAR StoreServ, Nimble, StoreVirtual , P9500/XP7, MSA	
<b>FC Ports</b>	12 or 24 Enabled 24 Max	8 or 24 Enabled 24 Max
<b>SFP</b>	B-series	B-series
<b>Advanced Trunking</b>	Included with Power Pack+ Upgrade	Included with Power Pack+ or Optional Upgrade
<b>Adaptive Networking</b>	Included	Included
<b>Form factor</b>	1U	1U
<b>Zoning Software</b>	Yes (Included)	Yes (Included)
<b>Hot plug, redundant power supplies</b>	Optional	N/A
<b>Hot plug fans</b>	Yes (integrated with power supply)	Yes (integrated with power supply)



## Technical Specifications

Features	SN6500B 16Gb FC Switch and SN6500B 16Gb FC Power Pack+	SN4000B Power Pack+ SAN Extension Switch	SN2600B SAN Extension Switch
<b>Targeted Environment</b>	Workgroups, Departments	Data Centers; long distance replication, multiprotocol SAN Fabrics	Data Centers; long distance replication, multiprotocol SAN Fabrics
<b>Fibre Channel Port Bandwidth</b>	16Gbps	16Gbps	32Gbps
<b>Ethernet</b>	N/A	1/10/40 Gbps Ethernet	1/10Gbps Ethernet
<b>Aggregate device bandwidth</b>	768-1536-Gbps	N/A	N/A
<b>OS Support</b>	<b>Notes: Please Refer to SPOCK <a href="https://www.hpe.com/storage/spock">https://www.hpe.com/storage/spock</a></b>		
<b>Storage system support</b>	HPE Primera, 3PAR StoreServ, Nimble, StoreVirtual , P9500/XP7, MSA		
<b>FC Ports</b>	48 or 96 Enabled 96 Max	24 FC Ports Enabled 24 Max	4 or 12 Enabled 12 Max
<b>Ethernet Ports</b>	N/A	16 Enabled	2 or 6 Enabled 6 Max
<b>SFP</b>	B-series	B-series	B-series
<b>Advanced Trunking</b>	Included with Power Pack+ or Optional Upgrade	Included	Included with Optional Upgrade
<b>Adaptive Networking</b>	Included	Included	NA
<b>Form factor</b>	2U	2U	1U
<b>Zoning Software</b>	Yes (Included)	Yes (Included)	Yes (Included)
<b>Hot plug, redundant power supplies</b>	Yes	Yes	Yes
<b>Hot plug fans</b>	Yes	Yes	Yes





## Technical Specifications

Features	Brocade 16Gb SAN Switch for HPE c-Class BladeSystem	Brocade 16Gb Fibre Channel SAN Switch Module for HPE Synergy	Brocade 32Gb Fibre Channel SAN Switch Module for HPE Synergy
<b>Targeted Environment</b>	Enterprise, Datacenters, Workgroups, Departments	Enterprise, Datacenters, Workgroups, Departments	Enterprise, Datacenters, Workgroups, Departments
<b>Port Bandwidth</b>	16Gbps	16Gbps	32Gbps
<b>Aggregate device bandwidth</b>	448 Gbps	576 Gbps (36 ports x 16 Gbps)	896 Gbps (36 ports x 16 Gbps)
<b>OS Support</b>	<b>Notes: Please Refer to SPOCK <a href="https://www.hpe.com/storage/spock">https://www.hpe.com/storage/spock</a></b>		
<b>Storage system Support</b>	HPE Primera, 3PAR StoreServ, Nimble, StoreVirtual , P9500/XP7, MSA		
<b>Ports</b>	12 external /16 internal	8 SFP+ external, 4 QSFP external /12 internal	8 SFP+ external, 2 QSFP external /12 internal
<b>SFP</b>	B-series	B-series	B-series
<b>Advanced Trunking</b>	Included with Power Pack+ or Optional Upgrade	Included with Power Pack+ or Optional Upgrade	Included with Power Pack+ or Optional Upgrade
<b>Adaptive Networking</b>	Included	Included	Included
<b>Form factor</b>	Embedded	Embedded	Embedded
<b>Zoning Software</b>	Yes (Included)	Yes (Included)	Yes (Included)
<b>Hot plug, redundant power supplies</b>	Yes, in BladeSystem Enclosure	Yes, in Synergy Frame	Yes, in Synergy Frame
<b>Hot plug fans</b>	Yes, in BladeSystem Enclosure	Yes, in Synergy Frame	Yes, in Synergy Frame



## Technical Specifications

### System Unit

<b>Fibre Channel ports</b>	<ul style="list-style-type: none"> <li>• <b>SN8700B</b> SAN Director: 48-port 64Gb or 32Gb FC with 48 32Gb SW or 32Gb LW SFP28 optics blade options as well as supporting the 64-port 32Gb SN8600B blade</li> <li>• <b>SN8600B</b> SAN Director: 64-port and 48-port 32Gb Fibre Channel port blade options</li> </ul>
<b>Control processor</b>	Redundant (active/standby) hot swappable control processor modules
<b>Scalability</b>	Full fabric architecture
<b>Performance</b>	<ul style="list-style-type: none"> <li>• <b>SN8700B</b> <ul style="list-style-type: none"> <li>– <b>HPE SN8700B 64Gb Blade</b> - Fibre Channel: 8.5Gbps line speed, full duplex; 10.53Gbps line speed, full duplex; 14.025Gbps line speed, full duplex; 28.05Gbps line speed, full duplex; 57.8Gbps line speed, full duplex. Autosensing of 8, 16, 32, and 64Gbps port speeds depending on SFPs used. 10Gbps port speeds with dedicated SFPs.</li> <li>– <b>HPE SN8700B 32Gb Blade</b> - Fibre Channel: 4.25Gbps line speed, full duplex; 8.5Gbps line speed, full duplex; 10.53Gbps line speed, full duplex; 14.025Gbps line speed, full duplex; 28.05Gbps line speed, full duplex. Autosensing of 4, 8, 16, and 32Gbps port speeds depending on SFPs used. 10Gbps port speeds with dedicated SFPs.</li> <li>– <b>HPE SN8600B 32Gb 64port</b> - Fibre Channel: 4.25Gbps line speed, full duplex; 8.5Gbps line speed, full duplex; 14.025Gbps line speed, full duplex; 28.05Gbps line speed, full duplex. Autosensing of 4, 8, 16, and 32Gbps port speeds depending on QSFPs used.</li> </ul> </li> <li>• <b>SN8600B</b> <ul style="list-style-type: none"> <li>– Fibre Channel:</li> <li>– 4 Gbps line speed, full duplex</li> <li>– 8 Gbps line speed, full duplex</li> <li>– 10 Gbps line speed, full duplex</li> <li>– 16 Gbps line speed, full duplex</li> <li>– 32 Gbps line speed, full duplex</li> <li>– Autosensing of 4, 8, 16, and 32 Gbps port speeds depending on SFPs used. Speed matching between 4, 8, 16, and 32 Gbps port speeds. 10 Gbps port speeds with dedicated SFPs</li> <li>– Fibre Channel over Ethernet:</li> <li>– 10Gb line speed, full duplex</li> <li>– 25Gb line speed, full duplex</li> <li>– 40Gb line speed, full duplex</li> </ul> </li> </ul>
<b>ISL Trunking</b>	<ul style="list-style-type: none"> <li>• <b>SN8700B</b> - Frame-based trunking with up to eight 64Gbps ports per ISL trunk; up to 512Gbps per ISL trunk; Exchange-based load balancing across ISLs with DPS included in FOS</li> <li>• <b>SN8600B</b> - Frame-based trunking with up to eight 32 Gbps ports per ISL trunk; up to 256 Gbps per ISL trunk. Exchange-based load balancing across ISLs with DPS included in FOS</li> </ul>
<b>Chassis Bandwidth</b>	<ul style="list-style-type: none"> <li>• <b>SN8700B 8-Slot SAN Director</b> 31Tb/s per chassis with 384 device ports + 32 UltraScale ICL connections supporting 128 ports.</li> <li>• <b>SN8700B 4-Slot SAN Director</b> 15.5Tb/s per chassis with 192 device ports + 16 UltraScale ICL connections supporting 64 ports.</li> <li>• <b>SN8600B 8-Slot SAN Director</b> 16.384 Tbps per chassis (512 ports×32 Gbps) data rate + 4.096 Tbps ICL bandwidth (32×128 Gbps)</li> <li>• <b>SN8600B 4-Slot SAN Director</b> 8.192 Tbps per chassis (256 ports×32 Gbps) data rate + 2.048 Tbps ICL bandwidth (16×128 Gbps)</li> </ul>
<b>Slot bandwidth</b>	<ul style="list-style-type: none"> <li>• <b>SN8700B</b> - 3072 Gbps (line rate)</li> <li>• <b>SN8600B</b> - 2048 Gbps (line rate)</li> </ul>



## Technical Specifications

<b>Local Switching bandwidth</b>	<ul style="list-style-type: none"> <li>• <b>SN8700B</b> <ul style="list-style-type: none"> <li>– 1536 Gbps for 32/48: 48 ports x 32Gbps (data rate)</li> <li>– 2048 Gbps for 32/64: 64 ports x 32Gbps (data rate)</li> <li>– 3072 Gbps for 64/48: 48 ports x 64Gbps (data rate)</li> </ul> </li> <li>• <b>SN8600B</b> <ul style="list-style-type: none"> <li>– 1536 Gbps for 32/48: 48 ports x 32Gbps (data rate)</li> <li>– 2048 Gbps for 32/64: 64 ports x 32Gbps (data rate)</li> </ul> </li> </ul>
<b>Maximum frame size</b>	2112-byte payload
<b>Switch latency</b>	<ul style="list-style-type: none"> <li>• <b>SN8700B</b> <ul style="list-style-type: none"> <li>– HPE SN8700B 64Gb 48-port blade at 64 Gbps speeds: : 460 ns (including FEC); any-port-to-any-port local switching and 1.4 <math>\mu</math>s blade to blade at 64Gbps, cut-through routing.</li> <li>– HPE SN8700B 32Gb 48-port blade at 32 Gbps speeds: 560 ns (including FEC); any-port-to-any-port local switching and 1.9 <math>\mu</math>s blade to blade at 32Gbps, cut-through routing.</li> </ul> </li> <li>• <b>SN8600B</b> <ul style="list-style-type: none"> <li>– HPE SN8600B 48-port blade at 32 Gbps speeds: &lt;900 ns (including FEC); any-port-to-any-port local switching and 2.7 <math>\mu</math>s blade to blade at 32 Gbps, cut-through routing</li> <li>– HPE SAN Extension blade (32Gb), Fibre Channel to Fibre Channel: &lt;900ns (including FEC) and 2.7 <math>\mu</math>s any-port-to-any-port at 32 Gbps, cut-through routing</li> </ul> </li> </ul>
<b>Frame buffers</b>	<ul style="list-style-type: none"> <li>• <b>SN8700B</b> - 24,000 per switching ASIC</li> <li>• <b>SN8600B</b> - 15,000 per switching ASIC</li> </ul>
<b>Classes of service</b>	Class 2, Class 3, Class F (inter-switch frames)
<b>Fibre Channel Port Types</b>	<ul style="list-style-type: none"> <li>• <b>SN8700B 64Gb</b> <ul style="list-style-type: none"> <li>– HPE SN8700B 64Gb 48-port 64Gb Short Wave SFP56 Integrated FC Blade: F_Port, E_Port, EX_Port, M_Port, SIM and D_Port</li> <li>– HPE SN8700B 64Gb 48-port 32Gb Short Wave SFP28 Integrated FC Blade: F_Port, E_Port, EX_Port, M_Port, SIM and D_Port</li> <li>– HPE SN8700B 32Gb 48-port 32Gb Short Wave SFP28 Integrated FC Blade: F_Port, E_Port, EX_Port, M_Port, SIM, and D_Port. (4G speed supports only F_Port connectivity.)</li> <li>– HPE SN8600B 32Gb SAN Extension Blade: F_Port, FL_Port, E_Port, SIM, and EX_Port on FC and VE_Port on GbE</li> </ul> </li> <li>• <b>SN8600B 32Gb</b> <ul style="list-style-type: none"> <li>– HPE SN8600B 32Gb 64-port FC Blade</li> <li>– HPE SN8600B 32Gb 48-port FC blade: F_Port, E_Port, EX_Port, M_Port, SIM, and D_Port</li> <li>– HPE SN8600B 32Gb SAN Extension Blade: F_Port, E_Port, and EX_Port on FC, and VE_Port on GbE</li> </ul> </li> </ul> <p><b>Notes:</b> Self-discovery is based on switch type (U_Port) with an optional port-type control.</p>
<b>Data traffic types</b>	Fabric Switches supporting unicast, multicast (255 groups), and broadcast
<b>USB</b>	<ul style="list-style-type: none"> <li>• <b>SN8700B</b> <ul style="list-style-type: none"> <li>– One USB port per control processor for firmware download, support save, and configuration upload or download</li> </ul> </li> <li>• <b>SN8600B</b> <ul style="list-style-type: none"> <li>– One USB port per control processor for firmware download, support save, and configuration upload or download</li> </ul> </li> </ul>



## Technical Specifications

Media types	<ul style="list-style-type: none"> <li>● <b>SN8700B</b> <ul style="list-style-type: none"> <li>– HPE SN8700B 64Gb 48p Blade:               <ul style="list-style-type: none"> <li>– 64G FC SFP56 LC connector: SWL</li> <li>– 32G FC SFP28 LC connector: SWL, LWL, ELWL</li> <li>– 10G FC SFP+ LC connector: SWL, LWL</li> </ul> </li> <li>– HPE SN8700B 32Gb 48p Blade:               <ul style="list-style-type: none"> <li>– 32G FC SFP28 LC connector: SWL, LWL, ELWL</li> <li>– 16G FC SFP+ LC connector: SWL, LWL, ELWL</li> <li>– 10G FC SFP+ LC connector: SWL, LWL</li> </ul> </li> <li>– The SN8700B Director Chassis will support the HPE SN8600B 32Gb 64-port FC Blade with media outlined below under the section titled “SN8600B 32Gb”.</li> </ul> </li> <li>● <b>SN8600B 32Gb</b> <ul style="list-style-type: none"> <li>– HPE SN8600B 32Gb 64-port FC Blade:               <ul style="list-style-type: none"> <li>– 4x32G FC QSFP28 MPO connector: SWL</li> <li>– 4x32G FC QSFP28 SMF LC connector: 2 km(fixed at 4x32G only)</li> <li>– 4x16G FC QSFP+ MPO connector: SWL</li> <li>– FCoE QSFP28 MPO connector: 100GBASE-SR4, 4x25GbE</li> <li>– FCoE QSFP+ MPO connector: 40GBASE-SR4, 4x10GbE</li> <li>– FCoE QSFP+ LC connector: 40GbE BiDi</li> </ul> </li> <li>– HPE SN8600B 32Gb 48-port FC blade:               <ul style="list-style-type: none"> <li>– 32G FC SFP28 LC connector: SWL, LWL</li> <li>– 16G FC SFP+ LC connector: SWL, LWL, ELWL</li> <li>– 10G FC SFP+ LC connector: SWL, LWL</li> </ul> </li> <li>– HPE SN8600B 32Gb SAN Extension Blade:               <ul style="list-style-type: none"> <li>– 32G FC SFP28 LC connector: SWL, LWL, ELWL</li> <li>– 16G FC SFP+ LC connector: SWL, LWL, ELWL</li> <li>– 10G FC SFP+ LC connector: SWL, LWL</li> </ul> </li> <li>– Ethernet QSFP+ MPO connector: 40GBASE-SR4, 40GBASE-LR4, 40GBASE-ER4</li> <li>– Ethernet QSFP+ LCconnector: 40GbE BiDi</li> <li>– 10GbE SFP+ LC connector: SR, LR, USR*</li> <li>– <b>Notes: *USR - Supported by not sold by HPE</b></li> <li>– 1GbE SFP+ LC connector: SR, LR</li> <li>– 1GbESFP+copper connector</li> <li>– Supports hot-pluggable Fibre Channel SFP28 at 32 Gbps SWL/LWL; SFP+ at 16 Gbps SWL/LWL/ELWL; SFP at 10 Gbps FC SWL/LWL and Ethernet SFP+ at 1 GbE copper, 1 GbE 1000BASE-SX/LX/CWDM, SFP+ at 10 GbE SR/LR; SFP+ at 10 GbE tunable DWDM 80 km, and QSFP at 40 GbE SR4/LR4/ER4.</li> <li>– Core Routing (CR) blades support hot-pluggable B-series Fibre Channel QSFP at 4x32 Gbps SWL, 4x16 Gbps SWL and 4x16 Gbps 2 km QSFP for ICL connections</li> </ul> </li> </ul>
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## Technical Specifications

<b>Fabric services</b>	<ul style="list-style-type: none"> <li>● <b>SN8700B</b> <ul style="list-style-type: none"> <li>– Adaptive Networking (QoS); BB Credit Recovery; Brocade Advanced Zoning (Default Zoning, Port/WWN Zoning); Dynamic Path Selection (DPS); Extended Fabrics; Fabric Congestion Notification; Fabric Vision; FDMI; FICON CUP; Flow Vision; FSPF; Integrated Routing; ISL Trunking; Management Server; N_Port Trunking; NPIV; NTP v3; Peer Zoning; Port Fencing; Registered State Change Notification (RSCN); Reliable Commit Service (RCS); Simple Name Server (SNS); Syslog; Target-Driven Zoning; Traffic Optimizer; Virtual Fabrics (Logical Switch, Logical Fabric).</li> </ul> </li> <li>● <b>SN8600B</b> <ul style="list-style-type: none"> <li>– Adaptive Networking (Traffic Isolation, QoS); BB credit recovery; Advanced Zoning (default zoning, port/WWN zoning, peer zoning, target-driven zoning, broadcast zoning); Dynamic Path Selection (DPS); Extended Fabrics; FDMI; FICON CUP; Flow Vision; Frame Redirection; FSPF; IPoFC; ISL Trunking; Management Server; Monitoring and Alerting Policy Suite (MAPS); N_Port Trunking; NPIV; NTP v3; Port Fencing; Registered State Change Notification (RSCN); Reliable Commit Service (RCS); Simple Name Server</li> </ul> </li> </ul>
<b>Extension</b>	<ul style="list-style-type: none"> <li>● <b>SN8700B</b> <ul style="list-style-type: none"> <li>– Supports DWDM, CWDM, and FC-SONET Devices; Fibre Channel; In-flight Compression (Brocade LZO) and Encryption (AES-GCM-256); BB Credit Recovery; FCIP; IP Extension; Adaptive Rate Limiting (ARL); Data Compression; Fast Write; Read/Write Tape Pipelining; QoS.</li> </ul> </li> <li>● <b>SN8600B</b> <ul style="list-style-type: none"> <li>– Supports DWDM, CWDM, and FC-SONET devices; Fibre Channel, in-flight compression (Brocade LZO) and encryption (AES-GCM-256); BB credit recovery; FCIP, IP Extension, Adaptive Rate Limiting (ARL), data compression, Fast Write, read/write Tape Pipelining, QoS</li> </ul> </li> </ul>
<b>FICON</b>	FICON cascading; support for lossless DLS; FICON CUP; Advanced Accelerator for FICON (FICON Global Mirror and XRC emulation and read/write Tape Pipelining). (FICON connectivity is not supported on the FC32-64 blade, Q2S19B.)
<b>High availability</b>	<b>SN8700 &amp; SN8600B SAN Director</b>
<b>Architecture</b>	Non-blocking shared memory; passive backplane; redundant active/passive control processor; redundant active/active core switching blades; redundant WWN cards
<b>Chassis Power</b>	<ul style="list-style-type: none"> <li>● <b>SN8700B 8-slot SAN Director</b> <ul style="list-style-type: none"> <li>– Four power supplies required for AC low-line (100 VAC to 120 VAC).</li> <li>– Two power supplies required for AC high-line (200 VAC to 240 VAC).</li> <li>– Chassis ships empty only. PSU and fans must be ordered separately. Three PSUs are required for 2+1 redundancy. Two PSUs provide system power, but four PSUs must be installed to provide power efficiency and 2+2 redundancy.</li> </ul> </li> <li>● <b>SN8700B 4-slot SAN Director</b> <ul style="list-style-type: none"> <li>– Two power supplies required for AC low-line (100 VAC to 120 VAC).</li> <li>– One power supply required for AC high-line (200 VAC to 240 VAC).</li> <li>– Chassis ships empty only. PSU and fans must be ordered separately. One PSU provides system power, but both PSUs must be installed to provide power efficiency and 1+1 redundancy</li> </ul> </li> <li>● <b>HPE SN8600B 8-slot SAN Director</b> <ul style="list-style-type: none"> <li>– Four power supplies required for AC Low Line (100 VAC to 120 VAC)</li> <li>– Two power supplies required for AC High Line (200 VAC to 240 VAC).</li> <li>– Device ships with three PSUs or empty (3 for 2+1 redundancy). Two provide system power, but four must be installed to provide power efficiency and 2+2 redundancy.</li> </ul> </li> <li>● <b>HPE SN8600 4-slot SAN Director</b> <ul style="list-style-type: none"> <li>– Two power supplies required for AC Low Line (100 VAC to 120 VAC).</li> <li>– One power supply required for AC High Line (200 VAC to 240 VAC).</li> <li>– The device ships with two power supplies. One provides system power, but both must be installed to provide power efficiency and 1+1 redundancy.</li> </ul> </li> </ul>

## Technical Specifications

Cooling	<ul style="list-style-type: none"> <li>● <b>HPE SN8700B and SN8600B 8-slot SAN Director</b> <ul style="list-style-type: none"> <li>– Requires three fan tray assemblies. A failure condition is one failed fan from any fan tray.</li> <li>– Each assembly contains two fans for a total of six. The system requires five of six functioning fans for operation in the SN8600B 8-slot Director. One fan tray assembly can be hot-swapped and should be replaced immediately in the event of a failure.</li> </ul> </li> <li>● <b>HPE SN8700B and SN8600 4-slot SAN Director</b> <ul style="list-style-type: none"> <li>– Requires two fan tray assemblies. A failure condition is one failed fan from any fan tray.</li> <li>– Each assembly contains two fans for a total of four. The system requires three of four functioning fans for operation in the SN8600 4slot Director. One fan assembly can be hot-swapped and should be replaced immediately in the event of a failure.</li> </ul> </li> </ul>
Management	<ul style="list-style-type: none"> <li>● <b>SN8700B</b> <ul style="list-style-type: none"> <li>– HTTP/HTTPS; SNMP v1/v3 (FE MIB, FC Management MIB); SSH;; Brocade Advanced Web Tools; Brocade SANnav Management Portal and SANnav Global View; Command Line Interface (CLI); SMI-S compliant; RESTful API; trial licenses for add-on capabilities.</li> </ul> </li> <li>● <b>SN8600B</b> <ul style="list-style-type: none"> <li>– HTTP, SNMP v1/v3 (FE MIB, FC Management MIB), SSH; Auditing, Syslog; Advanced Web Tools, HPE SAN Network Advisor SAN Enterprise or SAN Professional Plus; HPE SANnav Management Software, Command Line Interface (CLI); SMI-S compliant; RESTful API; trial licenses for add-on capabilities.</li> </ul> </li> </ul>
Security	<ul style="list-style-type: none"> <li>● <b>SN8700B</b> <ul style="list-style-type: none"> <li>– AES-GCM-256 encryption on ISLs; DH-CHAP (between switches and end devices); FCAP switch authentication; FIPS 140-2 compliant; HTTPS; IP filtering; LDAP with IPv6; OpenLDAP; Device</li> <li>– Connection Control (DCC); RADIUS; user-defined Role-Based Access Control (RBAC); Secure Copy (SCP); SFTP; SSH v2; TLS v1.2/v1.3; Switch Binding; TACACS+; Fabric Configuration Server (FCS); USGv6 compliant; Secure Boot</li> </ul> </li> <li>● <b>SN8600B</b> <ul style="list-style-type: none"> <li>– DH-CHAP (between switches and end devices), FCAP switch authentication, FIPS 140-2 L2-compliant, HTTPS, IPsec, IP filtering, LDAP with IPv6, OpenLDAP, Port Binding, RADIUS, user-defined Role-Based Access Control (RBAC), Secure Copy (SCP), Secure RPC, SFTP, SSH v2, SSL, Switch Binding, TACACS+, Trusted Switch.</li> </ul> </li> </ul>
Management access	<ul style="list-style-type: none"> <li>● <b>SN8700B</b> <ul style="list-style-type: none"> <li>– 10/100/1000Mb/s Ethernet (RJ-45) per control processor; serial console port (RJ-45) and one USB per control processor module; DHCP/DHCPv6; home integration enabled through HPE Insight Remote Support.</li> </ul> </li> <li>● <b>SN8600B</b> <ul style="list-style-type: none"> <li>– 10/100/1000 Ethernet (RJ-45) per control processor, in-band over Fibre Channel; serial port (RJ-45) and one USB per control processor module; DHCP/DHCPv6; call-home integration enabled through HPE Insight Remote Support</li> </ul> </li> </ul>
Diagnostics	<ul style="list-style-type: none"> <li>● <b>SN8700B</b> <ul style="list-style-type: none"> <li>– IO Insight for SCSI and NVMe monitoring (FC32-X7-48 blade (R6B01A and R6B02A and FC32-64 blade Q2S19B only); ClearLink® optics and cable diagnostics, including electrical/optical loopback, link traffic/latency/distance; built-in flow generator; POST and embedded online/offline diagnostics, including environmental monitoring, FCping, and Pathinfo (FC traceroute); flow mirroring; frame viewer; non-disruptive daemon restart; optics health monitoring; power monitoring; RASttrace logging; and Rolling Reboot Detection (RRD).</li> </ul> </li> <li>● <b>SN8600B</b> <ul style="list-style-type: none"> <li>– IO Insight for IO monitoring; ClearLink optics and cable diagnostics, including electrical/optical loopback, link traffic/latency/distance; built-in flow generator; POST and embedded online/offline diagnostics, including environmental monitoring, FCping and Pathinfo (FC</li> </ul> </li> </ul>

## Technical Specifications

	traceroute), flow mirroring, frame viewer, non-disruptive daemon restart, optics health monitoring, power monitoring, RAStrace logging, and Rolling Reboot Detection (RRD).
<b>Mechanical specifications</b>	
<b>SN8000B Ports per rack</b>	Up to 1536 ports per 42U rack Up to 1024 DC SAN Backbone Director ports per 42U rack using Patch Panels. <b>Notes: The last 16 ports require couplers when using LC-LC Patch Panels.</b>
<b>Enclosure</b>	<ul style="list-style-type: none"> <li>• <b>SN8700B</b> <ul style="list-style-type: none"> <li>– <b>HPE SN8700B 8-slot SAN Director 12-blade slots:</b> 14U rack-mountable chassis; 27 in. to 31 in. and 22 in. rail kits for the four post rack; mid-mount kit for the two-post rack.</li> <li>– <b>HPE SN8600B 4-slot SAN Director 8-blade slots:</b> 27 in. to 31 in. rail, 18 in. to 24 in. rail, and airflow diversion rack-mount kits for the four-post rack; mid-mount kit for the two-post rack.</li> </ul> </li> <li>• <b>SN8600B</b> <ul style="list-style-type: none"> <li>– <b>HPE SN8600B 8-slot SAN Director 12-blade slots:</b> 14U rack-mountable chassis; 27 in. to 31 in. and 22 in. rail kits for the four-post rack; mid-mount kit for the two-post rack</li> <li>– <b>HPE SN8600B 4slot SAN Director 8-blade slots:</b> 8U rack-mountable chassis; 27 in. to 31 in. rail, 18 in. to 24 in. rail, and airflow diversion rack mount kits for the four-post rack; mid-mount kit for the two-post rack</li> </ul> </li> </ul>
<b>Width</b>	<ul style="list-style-type: none"> <li>• <b>SN8700B</b> <ul style="list-style-type: none"> <li>– Rack-mountable in a standard 19-inch EIA cabinet</li> </ul> </li> <li>• <b>SN8600B</b> <ul style="list-style-type: none"> <li>– Rack-mountable in a standard 19-inch EIA cabinet</li> </ul> </li> </ul>
<b>Size</b>	<ul style="list-style-type: none"> <li>• <b>SN8700B 8-slot SAN Director</b> <ul style="list-style-type: none"> <li>– Height: 61.23 cm (24.11 in., 14U)</li> <li>– Width: 43.74 cm (17.23 in.)</li> <li>– Depth: 61.04 cm (24.04 in.)</li> </ul> </li> <li>• <b>SN8700B 4-slot SAN Director</b> <ul style="list-style-type: none"> <li>– Height: 34.45 cm (13.56 in., 8U)</li> <li>– Width: 43.74 cm (17.23 in.)</li> <li>– Depth: 61.04 cm (24.04 in.)</li> </ul> </li> <li>• <b>SN8700B 4-slot SAN Director with airflow diversion rack-mount kit</b> <ul style="list-style-type: none"> <li>– Height: 40.00 cm (15.75 in., 9U)</li> <li>– Width: 43.74 cm (17.23 in.)</li> <li>– Depth: 61.29 cm (24.09 in.)</li> </ul> </li> <li>• <b>SN8600B 8-slot SAN Director</b> <ul style="list-style-type: none"> <li>– Height: 61.23 cm (24.11 in., 14U)</li> <li>– Width: 43.74 cm (17.23 in.)</li> <li>– Depth: 61.04 cm (24.04 in.)</li> </ul> </li> <li>• <b>SN8600B 4-slot SAN Director</b> <ul style="list-style-type: none"> <li>– Height: 34.45 cm (13.56 in., 8U)</li> <li>– Width: 43.74 cm (17.23 in.)</li> <li>– Depth: 61.04 cm (24.04 in.)</li> </ul> </li> <li>• <b>SN8600B 4-slot SAN Director with airflow diversion rack-mount kit</b> <ul style="list-style-type: none"> <li>– Height: 40.00 cm (15.75 in., 9U)</li> <li>– Width: 43.74 cm (17.23 in.)</li> <li>– Depth: 61.29 cm (24.09 in.)</li> </ul> </li> </ul>





## Technical Specifications

<b>Size</b>	<b>Weight</b>	<b>SN8700B 8-slot SAN Director</b>	35.61 kg (78.5 lb) for chassis 145.8 kg (321.5 lb) maximum fully populated configuration
		<b>SN8700B 4-slot SAN Director</b>	24.5 kg (54 lb) for chassis 68.95 kg (152.0 lb) maximum fully populated configuration
		<b>SN8600B 8-slot SAN Director</b>	35.61 kg (78.5 lb) for chassis 145.8 kg (321.5 lb) for 384-port configuration, fully populated
		<b>SN8600B 4-slot SAN Director</b>	24.5 kg (54 lb) for chassis 68.95 kg (152.0 lb) for 192-port configuration, fully populated
<b>Environment</b>			
<b>Temperature</b>	<b>Operating</b>	<b>SN8700B and SN8600B</b> 32° to 104° F (0° to 40° C )	
	<b>Non-operating</b>	<b>SN8700B and SN8600B</b> -25° to 70° C (-13° to 158° F)	
<b>Humidity</b>	<b>Operating</b>	<b>SN8700B and SN8600B</b> 5% to 93% RH non-condensing at 40°C (104°F) with a maximum gradient of 10% per hour	
	<b>Non-operating</b>	<b>SN8700B and SN8600B</b> 10% to 93% RH non-condensing at 70°C (158°F)	
<b>Altitude</b>	Up to 3000 meters (9800 feet)		
<b>Shock</b>	20 g, 6 ms, half sine		
<b>Vibration</b>	<b>Operating</b>	<ul style="list-style-type: none"> <li>• <b>SN8700B</b> <ul style="list-style-type: none"> <li>– Operating: 5 Hz to 10 Hz at +5 dB/oct; 10 Hz to 200 Hz at 0.0005 grms; 200 Hz to 500 Hz at -5 dB/oct; scale 0.05 grms.</li> </ul> </li> <li>• <b>SN8600B</b> <ul style="list-style-type: none"> <li>– 10 g, 11 ms, half sine wave</li> </ul> </li> </ul>	
	<b>Non-operating</b>	<ul style="list-style-type: none"> <li>• <b>SN8700B</b> <ul style="list-style-type: none"> <li>– Non-operating: 3 Hz to 10 Hz at +5 dB/oct; 10 Hz to 200 Hz at 0.0065 grms; 200 Hz to 500 Hz at -5 dB/oct; scale 1.12 grms.</li> </ul> </li> <li>• <b>SN8600B</b> <ul style="list-style-type: none"> <li>– 20 g, 11 ms, half sine wave</li> </ul> </li> </ul>	
<b>Heat Dissipation</b>	<b>SN8700B 8-slot SAN Director</b>	64Gb 384 port configuration, including ICLs : Typical 10,953 Btu/hr ; Max 15,530 Btu/hr Power Consumed : Typical : 3210W ; Max 4550  <b>Notes:</b> Input power is at 200 VAC with full PSU redundancy.	
	<b>SN8700B 4-slot SAN Director</b>	64Gb 192 port configuration, including ICLs : Typical 5,596 Btu/hr ; Max 7,523 Btu/hr Power Consumed : Typical : 1640W ; Max 2204  <b>Notes:</b> Input power is at 200 VAC with full PSU redundancy.	
	<b>SN8600B 8-slot SAN Director</b>	384-port configuration: Typical: 8,836 BTU/hr; Max: 14,485 BTU/hr Power consumed: Typical: 2,589 W; Max: 4,244 W <b>Notes:</b> Input power is at 200 VAC with full PSU redundancy.	
	<b>SN8600B 4-slot SAN Director</b>	192-port configuration: Typical: 4,696 BTU/hr; Max: 8,139 BTU/hr Power consumed: Typical: 1,376 W; Max: 2,385 W <b>Notes:</b> Input power is at 200 VAC with full PSU redundancy.	

## Technical Specifications

<b>Power</b>	<b>SN8700B</b>	<b>Supported power range</b>	<ul style="list-style-type: none"> <li>• <b>Input voltage</b> <ul style="list-style-type: none"> <li>– Standard AC input:</li> <li>– Range: 90 VAC to 264 VAC auto-volt</li> <li>– Nominal: 100 VAC to 240 VAC</li> </ul> </li> <li>• <b>Power</b> <ul style="list-style-type: none"> <li>– 85 VAC to 132 VAC: 1450W</li> <li>– 180 VAC to 264 VAC: 2870W</li> </ul> </li> </ul>
		<b>In-rush current</b>	35 Amps maximum, peak
		<b>Frequency</b>	50 Hz to 60 Hz (Nominal: 50 Hz to 60 Hz)
	<b>SN8600B</b>	<b>Supported power range</b>	<ul style="list-style-type: none"> <li>• <b>Input voltage</b> <ul style="list-style-type: none"> <li>– Standard AC input:</li> <li>– Range: 85 VAC to 264 VAC Auto-volt</li> <li>– Nominal: 100 VAC to 240 VAC</li> </ul> </li> <li>• <b>Power</b> <ul style="list-style-type: none"> <li>– 85 to 132 VAC: 1,450 W</li> <li>– 180 to 264 VAC: 2,870 W</li> </ul> </li> </ul>
		<b>In-rush current</b>	35 Amps maximum, peak
		<b>Frequency</b>	50 Hz to 60 Hz (Nominal: 50 Hz to 60 Hz)

### Certified maximum

Please Refer to SAN Design Guide at the following URL: <https://support.hpe.com/hpsc/doc/public/display?docId=c00403562>



## Summary of Changes

Date	Version History	Action	Description of Change
06-Feb-2023	Version 78	Changed	Service and Support, Configuration Information and Technical Specifications sections were updated
01-Aug-2022	Version 77	Changed	Added 32Gb and 64Gb LW & ELW optics
05-Jul-2022	Version 76	Changed	Updated with 4x50 2km ICL offering
01-Nov-2021	Version 75	Changed	Removed duplicate blade references
04-Oct-2021	Version 74	Changed	Service and Support section was updated Obso SKU was removed
15-Sep-2021	Version 73	Changed	Configuration Information sections was updated.
02-Aug-2021	Version 72	Changed	Service and Support and Configuration Information sections were updated.
07-Jun-2021	Version 71	Changed	Overview, Standard Features, Configuration Information and Technical Specifications sections were updated.
06-Apr-2021	Version 70	Changed	Overview, Standard Features, Configuration Information and Technical Specifications sections were updated.
18-Jan-2021	Version 69	Changed	Configuration Information section was updated.
07-Dec-2020	Version 68	Changed	SN8700B solution specifications added
05-Oct-2020	Version 67	Changed	Updated physical software licenses
06-Jul-2020	Version 66	Changed	QuickSpecs layout was updated and Branding Refresh was applied.
18-May-2020	Version 65	Changed	Configuration Information section was updated.
06-Apr-2020	Version 64	Changed	Standard Features and Configuration Information sections were updated.
03-Feb-2020	Version 63	Changed	Standard Features, Configuration Information and Technical Specifications sections were updated.
03-Sep-2019	Version 62	Changed	Standard Features, Service and Support and Configuration Information sections were updated.
02-Apr-2019	Version 61	Changed	Overview, Service and Support, Configuration Information, Technical Specifications sections were updated.
01-Oct-2018	Version 60	Changed	Product Highlights, HPE Support Services, Configuration Information and Technical Information sections were updated. SKU descriptions were updated. Obsolete SKUs were removed. Overview, Product Highlights, HPE Support Services, Configuration Information sections were updated. SKUs were updated
07-May-2018	Version 59	Changed	Added 64-port 32Gb blade for SN8600B SAN Director. Overview, Product Highlights, Configuration Information, and Technical Specifications were revised.
04-Dec-2017	Version 58	Changed	Configuration Information was revised.
23-Oct-2017	Version 57	Changed	Care Pack naming and Service and Support- Parts and Materials updated.
25-Sep-2017	Version 56	Changed	Changes made throughout the QuickSpecs.
03-Apr-2017	Version 55	Changed	Added optics and cables along with minor content edits
13-Feb-2017	Version 54	Changed	Cosmetic Update
16-Dec-2016	Version 53	Changed	Added a 32Gb SFP+ SKU
28-Nov-2016	Version 52	Changed	Added content for SN8600B 32Gb SAN Director
29-Jul-2016	Version 51	Changed	Changes made to the Configuration Information section.
07-Jun-2016	Version 50	Changed	Changes made throughout the QuickSpecs
08-Apr-2016	Version 49	Changed	Changes made to the Services Sections
16-Feb-2016	Version 48	Changed	Content Updated on the entire document
30-Mar-2015	Version 47	Changed	Changes made throughout the QuickSpecs.
13-Feb-2015	Version 46	Changed	Change the version to match Product Bulletin. It was not synched up
09-Feb-2015	Version 45	Added	Added the HPE B-series 4x16Gb Fibre Channel 2Km Inter-chassis Link QSFP Transceiver
14-Nov-2014	Version 44	Changed	Changes made throughout the QuickSpecs.

## Summary of Changes

Date	Version History	Action	Description of Change
03-Oct-2014	Version 43	Changed	Changes made to the Configuration Information, Service and Support and Product Highlights Sections.
21-Jul-2014	Version 42	Changed	Changes were made in Overview, Product Highlights and Configuration Information sections.
10-Jun-2014	Version 41	Changed	Carepack description updated on the Basic Care-Minimum recommended support Updated some products highlights Configuration Updates
28-Feb-2014	Version 40	Changed	Updated the following: Configuration Information Step 1, added Fabric Vision to description for QK710B, QK711B, AK857C, AR479B, Step 2 - added note to TC513A; removed "for Core 2/64" from the description for 325887-B21 and 325886-B21;
20-Dec-2013	Version 39	Added	HPE B-series 16b Long Wave 25km Fibre Channel SFP+ 1 Pack to Fibre Channel Switches were added.
09-Dec-2013	Version 38	Changed	Product descriptions were revised throughout Configuration Information HPE 8/40 SAN Switch and 8/40 SAN Switch Power Pack+ was removed from Family Information
15-Oct-2013	Version 37	Changed	Fabric Vision was added to Product Highlights 2408 FCoE CN Switch and 2408 FCoE CN Switch Power Pack+ was removed from Family Information chart
30-Sep-2013	Version 36	Changed	Optional Software was revised.
01-Apr-2013	Version 35	Changed	Changes made to update Step 2 of the Configuration Information section.
25-Mar-2013	Version 34	Changed	Changes made throughout document in sections What's New, Product Highlights, Configuration Information and Technical Specifications.
22-Feb-2013	Version 33	Changed	Changes were made to Product Highlights Section as well as Configuration Information section.
16-Nov-2012	Version 32	Changed	Changes were made Configuration Information section.
14-Sep-2012	Version 29	Changed	Changes were made in Overview, Product Highlights and Configuration Information sections.
13-Aug-2012	Version 28	Changed	Changes made in Configuration Information.
22-Jun-2012	Version 27	Changed	Changes made in Configuration Information.
16-May-2012	Version 26	Changed	Updated the following: Product Highlights - removed "CUP" from the FICON Accelerator Upgrade LTU name; updated NOTE for 10GbE and 10Gb FC Performance Upgrade; Configuration Information - Step 2 Additional Port Configurations - updated NOTE for 10GbE performance upgrade and removed one NOTE and update another for HPE Extension Blade FICON Accelerator Upgrade and updated NOTE for HPE FICON; Step3 - Additional Options - updated NOTE for Fibre Channel Optical Transceivers
06-Apr-2012	Version 25	Changed	Cabinet Support was revised.
26-Mar-2012	Version 24	Changed	Changes made throughout the QuickSpecs.
02-Dec-2011	Version 23	Changed	HPE Encryption FC Blade was revised in Additional Port Configurations.
14-Nov-2011	Version 21	Changed	HPE 16GB Long Wave B-series 10km FC SFP+ 1 Pack was added and HPE LC-SC Optical Cables were removed from Step 3 in Configuration Information.

## Summary of Changes

Date	Version History	Action	Description of Change
28-Oct-2011	Version 20	Changed	Updated the following: Overview; What's New; DC SAN Director Highlights; DC SAN Director Performance; SAN Scalability (typo); Web Tools; FICON Support (typo); ISL Trunking; SAN Network Advisor; SAN Network Advisor Enterprise and Professional+; HPE DC SAN Director 8 Inter-Chassis Link LTU; HPE B-series SAN Director FICON CUP Active License; 10GbE and 10Gb FC Performance Upgrade; Family Comparison Table-Aggregate device bandwidth for the SN6000B 16Gb FC Switches; Family Comparison Table-Hot plug, redundant power supplies for the SN8000G 8-Slot SAN Director; Configuration Information - Step 3-additional options; added Note; Technical Specifications - DC SAN Director Chassis Bandwidth changed from 3Tbps to 4Tbps
26-Sep-2011	Version 19	Changed	SN8000B Performance, DC SAN Director Highlights, Cabinet Support, Frame Filtering and ISL Trunking were revised in Product Highlights Family Information was completely revised Configuration Information was updated DC SAN Director Performance was revised in Technical Specifications
22-Jul-2011	Version 18	Changed	Note for HPE Encryption FC Blade was revised in Step 2.
20-Jun-2011	Version 17	Changed	Changes were made throughout, including changing the title.
09-Jun-2011	Version 16	Removed	Removed "StorageWorks" throughout the document.
18-Mar-2011	Version 15	Changed	Part number for HPE StorageWorks DC04 SAN Director Switch Integrated Routing LTU in Step 2.
27-Sep-2010	Version 14	Added	PremierFlex Cable was added to Step 3.
21-Jun-2010	Version 13	Changed	Added 64-port 8Gb FC Blade provides the highest director port density on the market was added to Key Features and Benefits FICON CUP and FICON Accelerator were added to FICON Support HPE DC SAN Director Switch Multiprotocol Ext Blade FICON CUP Accelerator Upgrade LTU was added to Optional Software NOTE was added to HPE StorageWorks Encryption Blade Performance Upgrade High Density Cables, LC-MiniSFP Cables and Recommended Patch Panels for the High Density Cables were added to Optional Cables Changed DC SAN Backbone Director was increased to 512 ports and DC04 SAN Director was increased to 256 ports Service and Support, HPE Pointnext operational, and Warranty Information was completely revised 1 Gb/s SAN Switches was removed Remote Monitoring of entire data center via Instant Support Enterprise Edition (ISEE) was removed from High-availability features
29-Mar-2010	Version 12	Added	HPE Extension Blade FICON CUP Accelerator Upgrade and HPE StorageWorks B-series DCFM Professional Plug Upgrade LTU were added throughout the QuickSpecs, NOTE was added to HPE StorageWorks 10/24 Blade for DC SAN Directors, HPE StorageWorks Data Center Fabric Manager Enterprise and Fabric Manager Professional Plus were added to Management.
14-Sep-2009	Version 11	Changed	Changes were made throughout the entire QuickSpecs, except in the Service and Support, HPE Pointnext operational and Warranty Information section.



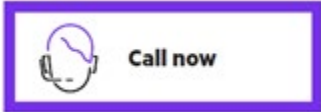
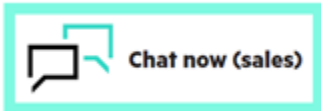
## Summary of Changes

Date	Version History	Action	Description of Change
20-Apr-2009	Version 10	Changed	Revised the Warranty information for the DC SAN Backbone Director in the Service and Support, HPE Pointnext operational and Warranty Information section Completely revised the chart for Recommended Services and added a chart to Related Services in the Service and Support, HPE Pointnext operational and Warranty Information section Updated the Part number for the HPE StorageWorks DC SAN Backbone Director Power Pack + in Step 1 and part numbers throughout Step 2, excluding the Encryption FC Blade and Software in the Configuration Information section
02-Mar-2009	Version 9	Changed	Added Encryption throughout the QuickSpecs, excluding the Family Information and Technical Specifications sections. Changed Warranty section of Service and Support, HPE Pointnext operational and Warranty Information and corrected some spacing issues in the Technical Specifications section.
13-Feb-2009	Version 8	Changed	Reformatted the Warranty section of the Service and Support, HPE Pointnext operational and Warranty Information.
26-Jan-2009	Version 7	Changed	Changes were made throughout the entire QuickSpecs. Note the title has changed.
17-Nov-2008	Version 6	Added	Support with M-Series M-EOS and B-Series FOS based SAN Fabrics to the Overview section Enhanced Group Management and Data Center Fabric Manager throughout the QuickSpecs HPE 8Gb Long Wave B-Series 10Km FC SFP +1 Pack to Optical Transceivers in Step 3 of the Configuration Information section
01-Aug-2008	Version 5	Changed	Minor formatting changes occurred in Steps 1 and 3 of the Configuration Information section.
25-Jul-2008	Version 4	Added	HPE B-Series SAN Backbone Director Integrated Routing LTU to Optional Software in the Product Highlights section and Step 2 of the Configuration Information section.
11-Jul-2008	Version 3	Changed	Added 1 2Gb USB Device to Steps 1 and 3 in the Configuration Information section. Changed Family Information Charts were rewritten and Optical Transceivers were updated in Step 3 of the Configuration Information section.
11-Apr-2008	Version 2	Changed	Changes were made in the Overview and Configuration Information section.
31-Mar-2008	Version 1	New	New QuickSpecs



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