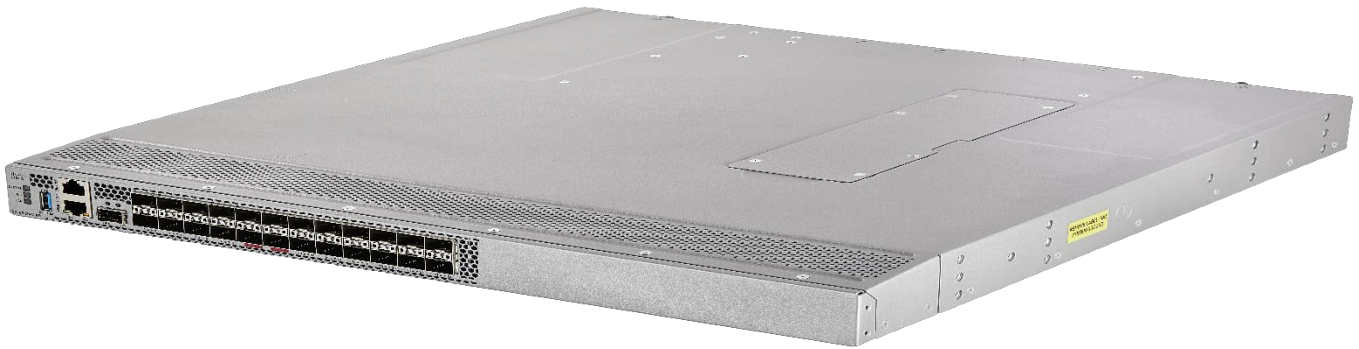


### Overview

#### HPE Storage Fibre Channel Switch C-Series SN6710C

The HPE Storage Fibre Channel Switch C-Series SN6710C (MDS 9124V) is the next generation 24-port 64Gbps Fibre Channel Switch providing high-speed Fibre Channel connectivity from the server rack to the SAN core. It empowers small, midsize, and large enterprises that are rapidly deploying cloud-scale applications providing the benefits of greater bandwidth, scale, and consolidation. The switch allows seamless transition to Fibre Channel Non-Volatile Memory Express (FC-NVMe) workloads whenever available without any hardware upgrade in the SAN. The HPE Storage Fibre Channel Switch C-Series SN6710C is offered with 24 ports partially or fully populated with either 32Gb or 64Gb transceivers. For ultimate flexibility, the HPE SN6710C Switch scales from eight to twenty-four ports.

The HPE Storage Fibre Channel Switch C-Series SN6710C can be provisioned, managed, monitored, and troubleshoot using Nexus Dashboard Fabric Controller (NDFC) (previously called Data Center Network Manager (DCNM)) which currently manages the entire suite of Cisco data center products. Powered by C-series MDS 9000 NX-OS Software, it includes storage networking features and functions and is compatible with C-series SN8700C (MDS 9700) Series Multilayer Directors, C-series SN6610C (MDS 9132T), C-series SN6620C (MDS 9148T) Multilayer Fabric Switches, C-series SN6630C (MDS 9396T) Multilayer Fabric Switches, C-series SN6720C (MDS 9148V) Multilayer Fabric Switches, C-series SN6730C (MDS 9396V) Multilayer Fabric Switches, and C-series SN6640C (MDS 9220i) Multi-service Fabric Switches, providing transparent, end-to-end service delivery in core-edge deployments.



**HPE Storage Fibre Channel Switch C-Series SN6710C**

## Standard Features

### Key Features and Benefits

- **High Performance for AFA and virtualized workloads**
    - Up to 1536 Gbps of aggregate bandwidth in a 1 rack unit (RU)
    - Up to 24 autosensing Fibre channel ports capable of speeds of 8/16/32/64 Gbps
    - Offered partially or fully populated with either 32Gb or 64Gb optics. This switch is also offered with 8 active ports without optics.
    - Offering ultimate flexibility, from eight to twenty-four ports in 8-port increments, and configurable with 16, 32, or 64 Gb FC SFP+ optics.
  - **Intelligent network services for modern SAN**
    - N-Port ID Virtualization (NPIV) technology to provide independent management for each virtual machine
    - N-Port Virtualization (NPV) and fabric-port (F-port) channeling features to enable scaling of SANs without reaching Fibre Channel domain ID limits
    - Representational State Transfer (REST) and NX-API capabilities to enable flexible and rapid programming of utilities for the SAN.
  - **High Availability Platform**
    - Designed for environments in which downtime is unacceptable
    - Non-disruptive software upgrades, dual hot swappable power supplies, and back to front port-side exhaust hot swappable fans
    - VSANs for fault isolation and PortChannels for Inter-Switch Link (ISL) resiliency
  - **Simplified Management**
    - Supports SAN plug and play capability
    - Centralized management tool with task-based wizards that simplifies management of a standalone switch or multiple switches and fabrics. Reduced total cost of ownership
- 

### Industry leading 64-Gb Performance Capability

The switch offers full non-blocking 64-Gbps Fibre Channel performance on 24 non-oversubscribed line-rate ports and an aggregate bandwidth of 1536 Gbps in each direction in a 1 Rack unit form factor.

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### Scalability

The HPE Storage Fibre Channel Switch C-Series SN6710C is offered in either 32Gb or 64Gb partially or fully populated options. The HPE Storage Fibre Channel Switch C-Series SN6710C comes in five preconfigured models; 8 ports active with 0 SFPs, 8-ports with 32Gb SFPs bundled, 8-ports with 64Gb SFPs bundled, 24-ports with 32Gb SFPs bundled, or 24-ports with 64Gb SFPs bundled. The SN6710C model can grow by 8 ports, up to 24-ports by installing the 8-port FC Upgrade License (additional SFPs required).

---

### Cost Effective Intelligent Storage Networking

The HPE Storage Fibre Channel Switch C-Series SN6710C comes standard in a compact, extremely cost-effective design that simplifies deployment and administration of small and medium-scale storage-area networks (SANs) and as an edge switch in a larger enterprise.

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### N-Port ID Virtualization (NPIV)

N-Port ID Virtualization (NPIV), a standard Fibre Channel protocol feature, individual virtual machines assume a full identity on the SAN so that Fibre Channel services such as zoning, Quality of Service (QoS), performance monitoring, and security can be provided to each virtual machine.

---



## Standard Features

### VSANs

VSAN, an industry standard for fabric virtualization capabilities, enables more efficient storage network use by creating hardware-based isolated environments within a single physical SAN fabric or switch. Up to 29 VSANs are supported per switch. Each VSAN can be zoned as a typical SAN and maintains its own fabric services for added scalability and resilience. VSANs allow the cost of SAN infrastructure to be shared among more users, while helping ensure segregation of traffic and retaining independent control of configuration on a VSAN-by-VSAN basis.

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### PortChannels

PortChannels allow users to aggregate up to 16 physical ISLs into a single logical bundle, providing optimized bandwidth use across all links. The bundle can consist of any port from the switch, helping ensure that the bundle remains active even in the event of a port failure.

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### High Availability

The HPE Storage Fibre Channel Switch C-Series SN6710C is designed for environments in which downtime is unacceptable. It offers:

- Non-disruptive software upgrades, In-Service Software Upgrade (ISSU)
  - Process monitoring and stateful process restart
  - Per-VSAN fabric services
  - Hot-swappable C-series SFP+ optics
  - Hot-swappable, dual redundant power supplies
  - Hot-swappable fan tray with switch integrated temperature and power management
  - Any port configuration for port channels
  - Port tracking
- 

### Simplified Storage Management

#### Single-pane management

The HPE Storage Fibre Channel Switch C-Series SN6710C can be provisioned, managed, monitored, and troubleshot using Nexus Dashboard Fabric Controller (NDFC<sup>\*</sup>) (previously called Data Center Network Manager (DCNM)), which currently manages the entire suite of Cisco data center products.

**Notes:** <sup>\*</sup>Please note that NDFC is fully integrated with Nexus Dashboard (ND) as of ND 3.2.1.

#### Interoperability

Offers compatibility with a broad range of Hewlett Packard Enterprise servers and operating systems, as well as disk and tape storage devices; see current compatibility matrix. Please refer to the Single Point of Connectivity Knowledge (SPOCK) website below for more details: <https://h20272.www2.hpe.com/spock/>

#### Diagnostics

- Embedded diagnostics
  - Online Diagnostics
  - Link diagnostics (E Port and F Port)
  - Fibre Channel traceroute
- 



## Standard Features

### Software Components, Included

#### NX-OS

HPE Storage Fibre Channel Switch C-Series SN6710C includes the Cisco MDS 9000 NX-OS Software operating system version 9.3(1) or higher, and a set of configuration, maintenance, and diagnostics tools. It also includes VSAN support, PortChannels, extended fabrics, and hardware-enforced zoning.

Advanced traffic management features, such as zone-based quality of service (QoS) and Inter-VSAN Routing (IVR), among others, are included with the optional HPE SN6710C/SN6720C Advantage and Premier Licenses.

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### Software Components, Optional

#### HPE SN6710C 8-Port Upgrade E-LTU

The flexibility of the HPE Storage Fibre Channel Switch C-Series SN6710C is provided by the SN6710C 64Gb 8-port FC Upgrade license which enables upgrades from 8- to 24- ports in 8-port increments.

#### Cisco Smart Licensing and Subscription Licenses

Starting from Cisco NX-OS 9.2(2), Smart Licensing Using Policy is available for HPE C-Series switches. This enables the customer to purchase subscription-based licenses for a period of time.

For more information, refer to Cisco MDS Licensing Guide, Smart Licensing Using Policy:

<https://www.cisco.com/c/en/us/td/docs/dcn/mds9000/sw/9x/configuration/licensing/cisco-mds-9000-nx-os-licensing-guide-9x/smart-licensing-using-policy.html?dtid=osscdc000283>

#### Cisco Nexus Dashboard Fabric Controller

Cisco Data Center Network Manager (DCNM) is renamed as Cisco Nexus Dashboard Fabric Controller (NDFC<sup>\*</sup>) from Release 12.0.1a. Cisco NDFC is designed with an HTML-based web User Interface (UI), which is the main interface for the product. There is also a fully integrated device manager used for visualizing and managing each individual switch or director. Customers having an existing DCNM license, or the HPE SN6710C/SN6720C Advantage License below may use these features.

**Notes:** <sup>\*</sup>NDFC is fully integrated with Nexus Dashboard (ND) as of ND 3.2.1; this comment extends throughout this document.

The day-to-day SAN operations, such as In-Service Software Upgrades (ISSU), Zoning, Event management, Port Monitoring (PMON), etc., are managed and maintained from the simplified web UI. The application is a platform providing historical data that can be used to help during day-to-day troubleshooting, viewing analytics data, and looking for SAN congestion through slow-drain analysis. NDFC is also critically important for reviewing event data, SNMP traps, syslogs, and consolidated auditing and reporting.

These features are available with the HPE SN6710C/SN6720C Advantage and Premier License.

#### HPE SN6710C/SN6720C Advantage E-LTU

The HPE SN6710C/SN6720C Advantage E-LTU (for the SN6710C and SN6720C Fabric Switches) is a combination of Nexus Dashboard Fabric Controller (NDFC) and Enterprise Package licenses. It comes with 1-, 3- or 5-year terms and is provisioned through Cisco Smart Licensing.

NDFC includes advanced features such as historical performance data collection for network traffic hot-spot analysis, centralized management services and advanced application integration. NDFC is available for download from the **HPE Support Center**. The Enterprise Package license includes a set of advanced traffic engineering and advanced security features that are recommended for all Enterprise SANs.



## Standard Features

### **HPE SN6710C/SN6720C Premier E-LTU**

The HPE SN6710C/SN6720C Premier E-LTU (for the Storage Switch C-series SN6710C and SN6720C Fabric Switches) is a combination of Nexus Dashboard Fabric Controller (NDFC), Enterprise Package, and SAN Insights license features. This Premier License is offered in 1-, 3- or 5-year terms and is provisioned through Cisco Smart Licensing.

NDFC and Enterprise Package license features are described above. SAN Insights offers end-to-end visibility into Fibre Channel block storage traffic. The solution is natively available on the storage area network due to its integrated-by-design architecture with the HPE Storage Switch C-series SN6710C. SAN Insights delivers deep visibility into I/O traffic between the compute and the storage infrastructure. This information is in addition to the already-available visibility obtained from individual ports, switches, servers, virtual machines, and storage arrays that are integrated with Nexus Dashboard Fabric Controller (NDFC).

**Notes:** Starting from 12.0.1a, DCNM is renamed Nexus Dashboard Fabric Controller (NDFC). Read more at: <https://www.cisco.com/c/en/us/products/collateral/cloud-systems-management/prime-data-center-network-manager/san-innovation-ndfc-so.html>

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## Service and Support

### Warranty

(1-1-1) Hardware Warranty; 1-year parts; 1-year on-site (8x5, next business day response) and 1-year labor.

**Notes:** The hardware warranty covers firmware and embedded non-saleable software. Hardware or Software product installation is not included in the warranty but is available and highly recommended.

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### HPE Services

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

<https://www.hpe.com/services>

### Consulting services

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

<https://www.hpe.com/services/consulting>

### SAN Fabric Integration and Migration service

HPE Data Storage Services - SAN Fabric Integration and Migration simplifies the introduction of and migration to new HPE C-series SAN fabric devices. It helps maximize the value of your investment in your new HPE C-series SAN fabric devices by leveraging HPE Services expertise and best practices.

<https://www.hpe.com/psnow/doc/a50011015enw>

### HPE Managed Services

HPE runs your IT operations, providing services that monitor, operate, and optimize your infrastructure and applications, delivered consistently and globally to give you unified control and let you focus on innovation.

[HPE Managed Services | HPE](#)

### Operational services

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

<https://www.hpe.com/services/operational>

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## Recommended Services

### HPE Tech Care Service

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

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



## Service and Support

### HPE Complete Care Service

HPE Complete Care Service is a modular, edge-to-cloud IT environment service designed to help optimize your entire IT environment and achieve agreed upon IT outcomes and business goals through a personalized experience. All delivered by an assigned team of HPE Services experts. HPE Complete Care Service provides:

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

<https://www.hpe.com/services/complecare>

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### Other related services from HPE Services

#### HPE Lifecycle Services

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

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

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

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

#### HPE SAN Deployment Service

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

Learn more: [https://www.hpe.com/psnow/doc/5981-8527enw?jumpid=in\\_lit-psnow-red](https://www.hpe.com/psnow/doc/5981-8527enw?jumpid=in_lit-psnow-red)

#### HPE Installation Service

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

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

#### HPE Education Services

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

<https://www.hpe.com/services/training>



## Service and Support

### Defective Media Retention

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

Consult your HPE Sales Representative or Authorized Channel Partner of choice for any additional questions and services options.

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### Parts and Materials

HPE will provide HPE-supported replacement parts and materials necessary to maintain the covered hardware product in operating condition, including parts and materials for available and recommended engineering improvements.

Parts and components that have reached their maximum supported lifetime and/or the maximum usage limitations as set forth in the manufacturer's operating manual, product QuickSpecs, or the technical product data sheet will not be provided, repaired, or replaced as part of these services.

### How to purchase services

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

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

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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 digital and data driven customer experience.

Sign into the HPE Support Center experience, featuring streamlined self-serve case creation and management capabilities with inline knowledge recommendations. You will also find personalized task alerts and powerful troubleshooting support through an intelligent virtual agent with seamless transition when needed to a live support agent.

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

### Consume IT on your terms

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

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

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

For more information: <http://www.hpe.com/services>





## Configuration Information

The HPE Storage Fibre Channel Switch C-Series SN6710C comes preconfigured with a maximum of 24 autosensing Fibre Channel ports capable of 64, 32, 16, and 8Gb in a compact 1RU form factor chassis. Customers can choose between partially or fully populated with 64Gb or 32Gb SFPs. The SN6710C switch comes in five preconfigured models; 8 ports active with 0 SFPs, 8-ports with 32Gb SFPs bundled, 8-ports with 64Gb SFPs bundled, 24-ports with 32Gb SFPs bundled, or 24-ports with 64Gb SFPs bundled. The SN6710C model can grow by 8 ports, up to 24 ports by installing the 8-port FC Upgrade License (additional SFPs required).

### Step 1 - Base Configuration (Select one)

#### Description

#### SKU

#### HPE SN6710C 64Gb 24/8 Fibre Channel Switch

HPE SN6710C 64Gb 24/8 Fibre Channel Switch

S1V06A

- 24-Port Fabric Switch with 8 active ports, Dual Power Supplies, Power Cords (configurable by ship-to country) and 4 Fans, VSANs, PortChannels, firmware, accessory kit, and documentation. SFPs not included; please refer to the supported transceivers listed below.

#### HPE SN6710C 64Gb 24/8 32Gb Short Wave SFP+ Fibre Channel Switch

HPE SN6710C 64Gb 24/8 32Gb Short Wave SFP+ Fibre Channel Switch

S1V09A

HPE SN6710C 64Gb 24/8 32Gb Short Wave SFP+ Fibre Channel v2 Switch

S1V09B\*

- 24-Port Fabric Switch with 8 active ports with 8x32Gb SW SFP+, Dual Power Supplies, Power Cords (configurable by ship-to country) and 4 Fans, VSANs, PortChannels, firmware, accessory kit, and documentation

#### HPE SN6710C 64Gb 24/8 64Gb Short Wave SFP+ Fibre Channel Switch

HPE SN6710C 64Gb 24/8 64Gb Short Wave SFP+ Fibre Channel Switch

S1V10A

HPE SN6710C 64Gb 24/8 64Gb Short Wave SFP+ Fibre Channel v2 Switch

S1V10B\*

- 24-Port Fabric Switch with 8 active ports with 8x64Gb SW SFP+, Dual Power Supplies, Power Cords (configurable by ship-to country) and 4 Fans, VSANs, PortChannels, firmware, accessory kit, and documentation

#### HPE SN6710C 64Gb 24/24 32Gb Short Wave SFP+ Fibre Channel Switch

HPE SN6710C 64Gb 24/24 32Gb Short Wave SFP+ Fibre Channel Switch

S0W92A

HPE SN6710C 64Gb 24/24 32Gb Short Wave SFP+ Fibre Channel v2 Switch

S0W92B\*

- 24-Port Fabric Switch with 24 active ports with 24x32Gb SW SFP+, Dual Power Supplies, Power Cords (configurable by ship-to country) and 4 Fans, VSANs, PortChannels, firmware, accessory kit and documentation

#### HPE SN6710C 64Gb 24/24 64Gb Short Wave SFP+ Fibre Channel Switch

HPE SN6710C 64Gb 24/24 64Gb Short Wave SFP+ Fibre Channel Switch

S0W93A

HPE SN6710C 64Gb 24/24 64Gb Short Wave SFP+ Fibre Channel v2 Switch

S0W93B\*

- 24-Port Fabric Switch with 24 active ports with 24x64Gb SW SFP+, Dual Power Supplies, Power Cords (configurable by ship-to country) and 4 Fans, VSANs, PortChannels, firmware, accessory kit, and documentation.

**Notes:** \*S1V09B, S1V10B, S0W92B, & S0W93B include built-in discounts. No additional cost relief available.



## Configuration Information

### Step 2 - Optional Software

| Description | SKU |
|-------------|-----|
|-------------|-----|

#### On Demand Port Activation License

|                                                     |          |
|-----------------------------------------------------|----------|
| HPE SN6710C 64Gb 8-port Fibre Channel Upgrade E-LTU | S1X20AAE |
|-----------------------------------------------------|----------|

**Notes:** SFPs not included with Port Activation License. Supported transceivers listed below.

#### Management Software

|                                            |          |
|--------------------------------------------|----------|
| HPE SN6710C/SN6720C Advantage 1-year E-LTU | SOX06AAE |
| HPE SN6710C/SN6720C Advantage 3-year E-LTU | SOX07AAE |
| HPE SN6710C/SN6720C Advantage 5-year E-LTU | SOX08AAE |
| HPE SN6710C/SN6720C Premier 1-year E-LTU   | SOX03AAE |
| HPE SN6710C/SN6720C Premier 3-year E-LTU   | SOX04AAE |
| HPE SN6710C/SN6720C Premier 5-year E-LTU   | SOX05AAE |

**Notes:** Advantage License is a combination of Nexus Dashboard Fabric Controller (NDFC) and Enterprise Package license features. Premier License is a combination of Nexus Dashboard Fabric Controller (NDFC), Enterprise Package, and SAN insights license features. HPE Premier and HPE Advantage Licenses are offered with a bundle of software maintenance and support including access to software updates for the duration of the license; customers will not be able to purchase additional software support for these configurations. At the end of the license period, the customer will need to purchase a new software license to continue using the software. Software support renewal via HPE Services is not allowed/supported.

### Step 3 - Options

Supported transceivers are listed below:

#### Description

##### 64Gb FC Transceivers\*

|                                                                    |        |
|--------------------------------------------------------------------|--------|
| HPE C-series 64Gb SFP+ Short Wave Fibre Channel Transceiver        | S0W91A |
| HPE Storage C-series 64Gb SFP+ Long Wave Fibre Channel Transceiver | S6G53A |

##### 32Gb FC Transceivers\*

|                                                              |        |
|--------------------------------------------------------------|--------|
| HPE C-series 32 Gb Fibre Channel Short Wave SFP+ Transceiver | Q9D30A |
| HPE C-series 32 Gb Fibre Channel Long Wave SFP+ Transceiver  | Q9D31A |

**Notes:** \*Compatible with SFP28 MSA spec

##### 16Gb FC Transceivers

|                                                      |        |
|------------------------------------------------------|--------|
| HPE C-series 16 Gb Fibre Channel SW SFP+ Transceiver | C8S72A |
| HPE C-series 16 Gb Fibre Channel LW SFP+ Transceiver | C8S73A |

**Notes:** Current bundles are only configured with short wave SFP optical transceivers. Please use only the above Cisco SFP optical transceivers; no substitutions allowed. Using other transceivers may void product warranty.

### Installation and Deployment Services

For complete design and implementation of Fibre Channel connectivity components, select **HPE SAN Deployment Service**

<http://h20195.www2.hpe.com/V2/GetPDF.aspx/5981-8527ENW.pdf>

For basic hardware installation, select **HPE Installation Service**

<https://h20195.www2.hpe.com/v2/Getdocument.aspx?docname=5981-9356enw>



Configuration Information

Recommended Cables

| Description                                                        | SKU    |
|--------------------------------------------------------------------|--------|
| <b>HPE PremierFlex OM4+ Fiber Optic Cables</b>                     |        |
| 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 |
| <b>HPE OM3 LC-LC Optical Cables</b>                                |        |
| 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 |
| <b>HPE PremierFlex MPO to 4xLC Splitter Cables</b>                 |        |
| 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 |



## Technical Specifications

### Family Information

|                                                          | Switch Type              | Maximum ports                                                                                                                                             | Number of slots per chassis      |
|----------------------------------------------------------|--------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|
| <b>HPE Storage Director Switch C-series SN8700C</b>      | Multilayer Director      | 4-slot:<br>192 16/32/64 Gbps Fibre Channel ports<br>8-slot:<br>384 16/32/64 Gbps Fibre Channel ports<br>16-slot:<br>768 16/32/64 Gbps Fibre Channel ports | Four/Eight/Sixteen               |
| <b>HPE Storage Fibre Channel Switch C-series SN6730C</b> | Multilayer Fabric Switch | Ninety-six 64 Gbps Fibre Channel ports                                                                                                                    | One fixed                        |
| <b>HPE Storage Fibre Channel Switch C-series SN6720C</b> | Multilayer Fabric Switch | Forty-eight 64 Gbps Fibre Channel ports                                                                                                                   | One fixed                        |
| <b>HPE Storage Fibre Channel Switch C-series SN6710C</b> | Multilayer Fabric Switch | Twenty-four 64 Gbps Fibre Channel ports                                                                                                                   | One fixed                        |
| <b>HPE Storage Multiservice Switch C-series SN6640C</b>  | Multilayer Fabric Switch | Twelve 32-Gbps Fibre Channel ports, four 1/10-, two 25-, and one 40- Ethernet IP storage services ports                                                   | One fixed                        |
| <b>HPE Storage Fibre Channel Switch C-series SN6630C</b> | Multilayer Fabric Switch | Ninety-six 32 Gbps Fibre Channel ports                                                                                                                    | One fixed                        |
| <b>HPE Storage Fibre Channel Switch C-series SN6620C</b> | Multilayer Fabric Switch | Forty-eight 32 Gbps Fibre Channel ports                                                                                                                   | One fixed                        |
| <b>HPE Storage Fibre Channel Switch C-series SN6610C</b> | Multilayer Fabric Switch | Thirty-two 32 Gbps Fibre Channel ports                                                                                                                    | One fixed and one expansion slot |

**Notes:** For additional switch support information, refer to the C-series FC Switch Connectivity Stream on the Single Point of Connectivity Knowledge (SPOCK) website at: <https://h20272.www2.hpe.com/spock/>. You must sign up for a Hewlett Packard Enterprise Passport to enable access. Once logged in, click Switches under Other Hardware in the last navigation panel of the window to access the Fibre Channel Switch Streams. Click on the C-Series FC Switch Connectivity Stream to open the document.

### Minimum software requirements

MDS 9000 NX-OS Software Release 9.3(1)

### Performance and port configuration

- Port speed: 64, 32, 16 and 8 Gbps autosensing with 64 Gbps of dedicated bandwidth per port
- Buffer credits: Up to 24000 for a group of 24 ports, with a default of 1000 buffer credits per port and a maximum of 16000 buffer credits for a single port in the group
- Ports per chassis: Up to 24 64-Gbps ports
- Base configuration with 8-ports; additional configurations up to 24 ports.
- PortChannel: Up to 16 load balanced physical links in a PortChannel

### Security

- VSANs fabric isolation
- Intelligent packet inspection at port level
- Hardware zoning by Access Control Lists (ACLs)
- FC-SP for host-to-switch and switch-to-switch authentication
- Port security



## Technical Specifications

### Fabric Services

- Name server
- Registered state change notification (RSCN)
- Login services
- Fabric Configuration Server (FCS)
- Broadcast
- In-order delivery

---

### Compatibility

#### Fibre Channel protocols

- FC-PH, Revision 4.3 (ANSI INCITS 230-1994)
- FC-PH, Amendment 1 (ANSI INCITS 230-1994/AM1-1996)
- FC-PH, Amendment 2 (ANSI INCITS 230-1994/AM2-1999)
- FC-PH-2, Revision 7.4 (ANSI INCITS 297-1997)
- FC-PH-3, Revision 9.4 (ANSI INCITS 303-1998)
- FC-PI, Revision 13 (ANSI INCITS 352-2002)
- FC-PI-2, Revision 10 (ANSI INCITS 404-2006)
- FC-PI-3, Revision 4 (ANSI INCITS 460-2011)
- FC-PI-4, Revision 8 (ANSI INCITS 450-2008)
- FC-PI-5, Revision 6 (ANSI INCITS 479-2011)
- FC-PI-6 (INCITS 512-2015)
- FC-PI-7 (INCITS 543-2019)
- FC-FS, Revision 1.9 (ANSI INCITS 373-2003)
- FC-FS-2, Revision 1.01 (ANSI INCITS 424-2007)
- FC-FS-2, Amendment 1 (ANSI INCITS 424-2007/AM1-2007)
- FC-FS-3, Revision 1.11 (ANSI INCITS 470-2011)
- FC-FS-4 (INCITS 488-2016)
- FC-FS-5 (INCITS 545-2019)
- FC-LS, Revision 1.62 (ANSI INCITS 433-2007)
- FC-LS-2, Revision 2.21 (ANSI INCITS 477-2011)
- FC-LS-3, Includes revision 3.53
- FC-SW-2, Revision 5.3 (ANSI INCITS 355-2001)
- FC-SW-3, Revision 6.6 (ANSI INCITS 384-2004)
- FC-SW-4, Revision 7.5 (ANSI INCITS 418-2006)
- FC-SW-5, Revision 8.5 (ANSI INCITS 461-2010)
- FC-SW-6 (INCITS 511-2016)
- FC-SW-7 (INCITS 547-2020)
- FC-GS-3, Revision 7.01 (ANSI INCITS 348-2001)
- FC-GS-4, Revision 7.91 (ANSI INCITS 387-2004)
- FC-GS-5, Revision 8.51 (ANSI INCITS 427-2007)
- FC-GS-6, Revision 9.4 (ANSI INCITS 463-2010)
- FC-GS-7, Includes revision 10.8
- FC-GS-7 (INCITS 510-2017)
- FC-GS-7 (INCITS 548-2020)
- NVMe/FC (INCITS 540-2018)
- NVMe/FC (INCITS 556-2020)
- FCP, Revision 12 (ANSI INCITS 269-1996)
- FCP-2, Revision 8 (ANSI INCITS 350-2003)



## Technical Specifications

- FCP-3, Revision 4 (ANSI INCITS 416-2006)
- FCP-4, Revision 2b (ANSI INCITS 481-2011)
- FC-SB-2, Revision 2.1 (ANSI INCITS 349-2001)
- FC-SB-3, Revision 1.6 (ANSI INCITS 374-2003)
- FC-SB-3, Amendment 1 (ANSI INCITS 374-2003/AM1-2007)
- FC-SB-4, Revision 3.0 (ANSI INCITS 466-2011)
- FC-SB-5, Revision 2.00 (ANSI INCITS 485-2014)
- FC-BB-2, Revision 6.0 (ANSI INCITS 372-2003)
- FC-BB-3, Revision 6.8 (ANSI INCITS 414-2006)
- FC-BB-4, Revision 2.7 (ANSI INCITS 419-2008)
- FC-BB-5, Revision 2.0 (ANSI INCITS 462-2010)
- FC-BB-6, Revision 2.00 (ANSI INCITS 509-2014)
- FC-VI, Revision 1.84 (ANSI INCITS 357-2002)
- FC-SP, Revision 1.8 (ANSI INCITS 426-2007)
- FC-SP-2, Revision 2.71 (ANSI INCITS 496-2012)
- FAIS, Revision 1.03 (ANSI INCITS 432-2007)
- FAIS-2, Revision 2.23 (ANSI INCITS 449-2008)
- FC-IFR, Revision 1.06 (ANSI INCITS 475-2011)
- FC-FLA, Revision 2.7 (INCITS TR-20-1998)
- FC-PLDA, Revision 2.1 (INCITS TR-19-1998)
- FC-Tape, Revision 1.17 (INCITS TR-24-1999)
- FC-MI, Revision 1.92 (INCITS TR-30-2002)
- FC-MI-2, Revision 2.6 (INCITS TR-39-2005)
- FC-MI-3, Revision 1.03 (INCITS TR-48-2012)
- FC-DA, Revision 3.1 (INCITS TR-36-2004)
- FC-DA-2, Revision 1.06 (INCITS TR-49-2012)
- FC-MSQS, Revision 3.2 (INCITS TR-46-2011)
- Fibre Channel classes of service: Class 2, Class 3, and Class F
- In-band management using IP over Fibre Channel (RFC 2625)
- IPv6, IPv4, and Address Resolution Protocol (ARP) over Fibre Channel (RFC 4338)
- Extensive IETF-standards-based TCP/IP, Simple Network Management Protocol Version 3 (SNMPv3), and Remote Monitoring (RMON) MIBs

### Fibre Channel ports

- Supports 64G, 32G and 16G Optics
- Fibre Channel standard port types: E and F
- Fibre Channel enhanced port types: SD, ST, TE, TF, NP, and TNP

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## Advanced Services

Please note that some services require the optional HPE SN6710C/SN6720C Advantage or Premier License.

- NPIV
- VSAN
- PortChannels
- NPV mode
- Flow-based and zone-based QoS
- IVR (in Cisco MDS 9000 NX-OS Software Release 8.3(1) or later)



## Technical Specifications

### Diagnostic and Troubleshooting

- SPAN
  - POST (Power-on-Self-Test) diagnostics
  - Online Health Management System (OHMS) diagnostics
  - Internal loopbacks
  - Fibre Channel traceroute
  - Fibre Channel ping
  - Syslog
  - Port-level statistics
  - Link diagnostics (E-port and F-port links)
  - Read Diagnostic Parameter
- 

### Management

- Access methods
    - Out-of-band 10/100/1000 Ethernet port
    - RS-232 serial console port
    - USB power-on auto-provision port
  - Access protocols
    - Command-Line Interface (CLI) using the console and Ethernet port
    - SNMPv3 implementing AES using the Ethernet port and in-band IP over Fibre Channel access
    - NX-API for HTTP/HTTPS Full Programmability
  - Security
    - Per-VSAN RBAC using LDAP, RADIUS, and TACACS+-based AAA functions
    - VSAN-based roles
    - SSHv2 implementing AES
    - SNMPv3 implementing AES
    - Secure File Transfer Protocol (SFTP)
- 

### Management Applications

- Cisco MDS 9000 Family CLI
  - C-series Nexus Dashboard Fabric Controller (optional; requires license which includes Nexus Dashboard Fabric Controller features)
- 

### Availability

- Non-disruptive software upgrades
  - Process monitoring and stateful process restart
  - Per-VSAN fabric services
  - Hot-swappable SFP+ optics
  - Up to 16 load balanced physical links in a PortChannel
  - Any port configuration for port channels
- 



## Technical Specifications

### Safety

- CE Marking
  - UL 60950
  - CAN/CSA-C22.2 No. 60950
  - EN 60950
  - IEC 60950
  - TS 001
  - AS/NZS 3260
  - IEC 60825
  - EN 60825
  - 21 CFR 1040
- 

### EMC

- FCC Part 15 (CFR 47) Class A
  - ICES-003 Class A
  - EN55022 Class A
  - CISPR22 Class A
  - AS/NZS 3548 Class A
  - VCCI Class A
  - EN55024
  - EN50082-1
  - EN61000-3-2
  - EN61000-3-3
  - EN61000-6-1
- 

### Serviceability

- Configuration file management
  - Port beaconing (Link Cable Beaconing)
  - System LEDs
  - SNMP traps for alerts
- 

### Environmental

- Physical dimensions (H x W x D) of 1RU: 1.72 x 17.3 x 18 in. [4.37 x 43.94 x 45.72 cm]) excluding Power Supply Unit (PSU) and fan-tray handles)
  - Weight of fully configured chassis: 18.73 lb (8.5 kg)
  - Ambient operating temperature: 32 to 104°F (0 to 40°C)
  - Ambient non-operating temperature: -40 to 158°F (-40 to 70°C)
  - Humidity (RH), ambient (noncondensing) operating: 10 to 90%
  - Humidity (RH), ambient (noncondensing) non-operating and storage: 10 to 95%
  - Operating altitude: -197 to 6500 ft (-60 to 2000 m)
- 





## Technical Specifications

### Power and Cooling

- Power supplies (500W AC) (maximum of 2 per switch)
  - AC Input: 100 to 240 VAC nominal (+/-10% for full range)
  - Frequency: 50 to 60 Hz nominal (+/-3 Hz for full range)
  - Typical power consumption:
    - 146W for 24-Port switch with 24 64G SW optics modules under 50% line rate
    - Airflow: Rear to front (toward ports)
  - HPE recommends maintaining a minimum air space of 2.5 in. (6.4 cm) between walls and chassis air vents and a minimum horizontal separation of 6 in. (15.2 cm) between two chassis to prevent overheating
- 



## Summary of Changes

| Date        | Version History          | Action  | Description of Change                                                                                                                                                                                                                                                                                                                                                                                           |
|-------------|--------------------------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 02-Sep-2025 | <b><u>Version 10</u></b> | Changed | Overview and Standard Features sections were updated - Added new 64Gb LW SFP, added 2 splitter cables, updated notes on NDFC / ND<br>Configuration information section was updated - New SKUs for 64Gb FC Transceivers and HPE PremierFlex MPO to 4xLC Splitter Cables were added.<br>Technical Specifications section was updated - HPE Storage Fibre Channel Switch C-series SN6610C information was removed. |
|             |                          | Added   | New SKUs were added - S6G53A, K2Q46A, K2Q47A                                                                                                                                                                                                                                                                                                                                                                    |
| 04-Nov-2024 | <b><u>Version 9</u></b>  | Changed | Overview, Standard Features, Configuration Information and Technical Specifications sections were updated.<br>Configuration Notes updated. General Maintenance                                                                                                                                                                                                                                                  |
| 03-Sep-2024 | <b><u>Version 8</u></b>  | Changed | Service and Support section was updated                                                                                                                                                                                                                                                                                                                                                                         |
| 15-Apr-2024 | <b><u>Version 7</u></b>  | Changed | Rebranding Series Name applied                                                                                                                                                                                                                                                                                                                                                                                  |
| 08-Jan-2024 | <b><u>Version 6</u></b>  | Changed | Standard Features, Configuration Information and Technical Specifications sections were updated.<br>Added SN6710C/SN6720C Premier Licenses                                                                                                                                                                                                                                                                      |
| 13-Nov-2023 | <b><u>Version 5</u></b>  | Changed | HPE Service Rebranding                                                                                                                                                                                                                                                                                                                                                                                          |
| 02-Oct-2023 | <b><u>Version 4</u></b>  | Changed | HPE Re-branding - Series name and HPE Services information updated                                                                                                                                                                                                                                                                                                                                              |
| 07-Aug-2023 | <b><u>Version 3</u></b>  | Changed | Overview, Standard Features, Configuration Information and Technical Specifications sections were updated.<br>Added new program PNs                                                                                                                                                                                                                                                                             |
| 05-Jun-2023 | <b><u>Version 2</u></b>  | Changed | Overview, Service and Support, Configuration Information and Technical Specifications sections were updated.<br>Updates/Added Volume Program PNs                                                                                                                                                                                                                                                                |
| 06-Mar-2023 | <b><u>Version 1</u></b>  | New     | New QuickSpecs                                                                                                                                                                                                                                                                                                                                                                                                  |



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