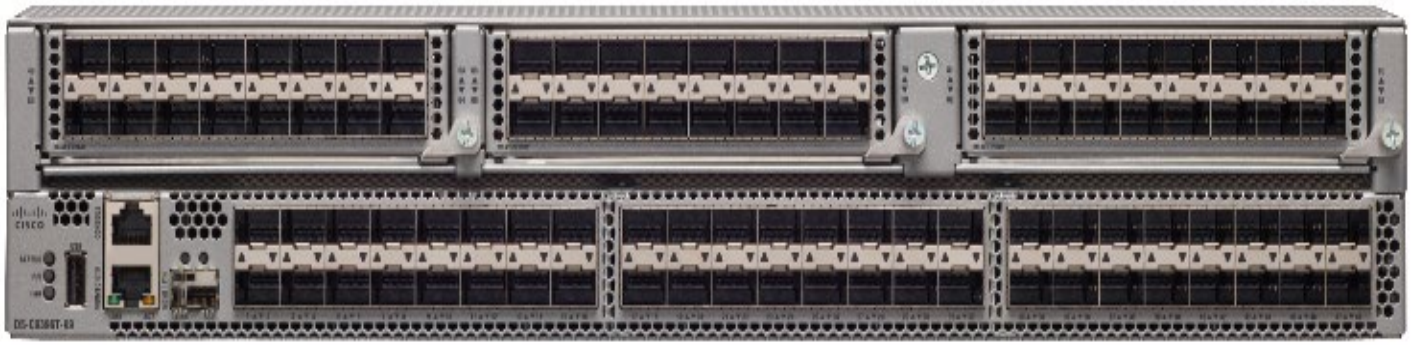
Overview

HPE C-series SN6630C Fibre Channel Switch

The HPE C-series SN6630C 32Gb 96-port Fibre Channel Switch (MDS 9396T) is the next generation 96-port 32Gbps Fibre Channel Switch providing high-speed Fibre Channel connectivity from the server rack to the SAN core. This switch offers state-of-art analytics and telemetry capability built into its next-generation Application-Specific Integrated Circuit (ASIC) platform. The Non-Volatile Memory express (NVMe)-ready switch allows seamless transition to Fibre Channel Non-Volatile Memory Express (FC-NVMe) workloads whenever available without any hardware upgrade in the SAN. This high-density, highly reliable and scalable, enterprise class switch is ideal for medium to large departmental SANs. For flexibility, the HPE C-series SN6630C 32Gb 96-port Fibre Channel Switch scales from 48-96 ports. Additionally, investing in this switch for the lower-speed (8 or 16 Gbps) server rack gives you the flexibility to upgrade to 32 Gbps performance in the future.

The SN6630C can be provisioned, managed, monitored, and troubleshot using Cisco 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/SN8500C (MDS 9700) Series Multilayer Directors, C-series SN6610C (MDS 9132T) Multilayer Fabric Switches, C-series SN6620C (MDS 9148T) Multilayer Fabric Switches, C-series SN6010C (MDS 9148S) Multilayer Fabric Switches and C-series SN6500C (MDS 9250i) Multi-service Fabric Switches, providing transparent, end-to-end service delivery in core-edge deployments.



HPE C-series SN6630C Fibre Channel Switch

Standard Features

Key Features and Benefits

- **High Performance for AFA and virtualized workloads**
  - Up to 3 Tbps of aggregate bandwidth in a 2 rack unit (RU)
  - Up to 96 autosensing Fibre channel ports capable of speeds of 4/8/16/32 Gbps
  - Pay as you grow flexibility in increments of 16 ports with on-demand port activation licenses
  - Allow users to deploy them with 32Gb, 16Gb or 8Gb optics to accommodate their budget while being fully prepared for tomorrow.
- **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 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 32-Gb Performance Capability

The switch offers full non-blocking 32-Gbps Fibre Channel performance on 48 line-rate ports and an aggregate bandwidth of 3 Tbps in each direction in a 2 Rack unit form factor.

Scalability

The HPE C-series SN6630C 32Gb 96-port Fibre Channel Switch provides an option to deploy as few as forty-eight 32-Gbps Fibre Channel ports in the entry-level variant, which can grow in increments of 16 ports to 96 ports.

Cost Effective Intelligent Storage networking

The SN6630C switch 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. Please note that some services listed require the optional SN6630C Enterprise Package License.

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.

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. Each VSAN can be zoned as a typical SAN and maintains its own fabric services and management domains 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.

Standard Features

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.

FlexAttach
The FlexAttach feature gives SN6630C switch customers the flexibility to add, move, or replace servers easily without the need to reconfigure SAN switches or storage arrays. It provides this flexibility by virtualizing the SAN identity of a server, which enables a server to retain its SAN identity even if the server is moved or replaced.

Quality of Service (QoS)
The Quality of Service (QoS) feature allows traffic to be classified into four distinct levels for service differentiation. QoS can be applied to help ensure that Fibre Channel data traffic for latency-sensitive applications receives higher priority over throughput-intensive applications such as data warehousing.

F-port trunking and channeling
The F-port trunking feature enables multiple VSANs to be transported on the uplink from a SN6630C switch operating in NPV mode to the core switch. This feature will allow the consolidation of uplinks ports necessary for extending VSAN connectivity to the NP device.
The F-port channeling feature enables up to 16 physical uplinks between a SN6630C switch operating in NPV mode and the core switch to be bundled into a PortChannel.
Advanced traffic management features, such as fabric-wide quality of service (QoS) and Inter-VSAN Routing (IVR), among others, are included with the optional HPE SN6630C Enterprise Package License.

IVR (MDS 9000 NX-OS Software Release 8.3(1) or later)
VSANs and Inter-VSAN routing (IVR) enable deployment of large-scale multisite and heterogeneous SAN topologies. Integrated VSANs in port-level hardware allow any port in a system or in a fabric to be partitioned into any VSAN. Integrated IVR provides line-rate routing between any of the ports in a system or in a fabric without the need for external routing appliances.

High Availability
The SN6630C switch is designed for environments in which downtime is unacceptable. It offers:

- Non-disruptive software upgrades
- Process monitoring and stateful process restart
- Per-VSAN fabric services
- Hot-swappable C-series SFP and SFP+ optics
- Optional redundancy on all major components such as the power supply and fan
- PortChannels for Inter-Switch Link (ISL) resiliency
- F-port Channeling for resiliency on uplinks from a SN6630C switch operating in NPV mode
- Online diagnostics

Standard Features

Product Family Models

- **HPE SN8500C/SN8700C 8-slot 16/32/64Gb FC Director (MDS 9710)**
  - Intelligent, multi-protocol 8-slot Director with up to 384 32/16/8/4 Gb Fibre Channel ports in a single chassis. Also, the HPE SN8500C/SN8700C 48-port 32Gb FC Module (2 separate modules) provide up to 384 ports of full 32Gbps line-rate performance across all ports or 384 10GbE FCoE ports in a single chassis or up to 1152 FCoE ports in a single rack with the use of the SN8500C FCoE module. In either case, the appropriate number of Fabric-1 or Fabric-3 modules must be configured to support full line rate across all ports.
- **HPE SN8500C/SN8700C 4-slot 16/32/64Gb FC Director (MDS 9706)**
  - Intelligent, multi-protocol 4-slot Director with up to 192 32/16/8/4 Gb Fibre Channel ports in a single chassis. Also, the HPE SN8500C/SN8700C 48-port 32Gb FC Module (2 separate modules) provide up to 192 ports of full 32 Gbps line-rate performance across all ports or 192 10GbE FCoE ports in a single chassis. In either case, the appropriate number of Fabric-1 or Fabric-3 modules must be configured to support full line rate across all ports.
- **HPE SN6500C 16Gb Multi-service Switch (MDS 9250i)**
  - Intelligent multi-protocol Fabric Switch with twenty active fixed 16Gb Fibre Channel ports, two fixed 1/10 Gigabit Ethernet FCIP ports, and eight fixed 10 Gigabit Ethernet FCoE ports. Provides up to forty active 16/8/4 Gb Fibre Channel ports through a port upgrade license.
- **HPE SN6010C 16Gb Fabric Switch (MDS 9148S)**
  - With up to 48 Auto-Sensing 16/8/4 Gb Fibre Channel ports
  - "Pay as you grow" scalability starting at 12 ports
- **HPE SN6610C 32Gb Fabric Switch (MDS 9132T)**
  - With up to 32 Auto-Sensing 32/16/8/4 Gb Fibre Channel ports
  - "Pay as you grow" scalability starting at 8 ports
- **HPE SN6620C 32Gb Fabric Switch (MDS 9148T)**
  - With up to 48 Auto-Sensing 32/16/8/4 Gb Fibre Channel ports
  - "Pay as you grow" scalability starting at 24 ports
- **HPE SN6630C 32Gb Fabric Switch (MDS 9396T)**
  - With up to 96 Auto-Sensing 32/16/8/4 Gb Fibre Channel ports
  - "Pay as you grow" scalability starting at 48 ports

Simplified Storage Management

Single-pane management:
The SN6630C can be provisioned, managed, monitored, and troubleshot using Cisco Data Center Network Manager, which currently manages the entire suite of Cisco data center products.

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 Spock website below for more details.

Diagnostics

- Embedded diagnostics
- Network analysis

Standard Features

Software Components, Included

NX-OS

SN6630C includes the Cisco MDS 9000 NX-OS Software operating system version 8.3(1) or higher, Cisco Data Center Network Manager (Essentials Edition), and a set of configuration, maintenance and diagnostics tools. It also includes VSAN support, PortChannels, extended fabrics, and hardware-enforced zoning.

Cisco Data Center Network Manager

Cisco Data Center Network Manager (Essentials Edition) is a responsive, easy-to-use Java application that simplifies management across multiple switches and fabrics. Cisco Data Center Network Manager enables administrators to perform vital tasks such as topology discovery, fabric configuration and verification, LUN security, monitoring, and fault resolution. All functions are available through a secure interface, which enables remote management from any location. Cisco Data Center Network Manager may be used independently or in conjunction with third-party management applications. Cisco provides an extensive API for integration with third-party and user developed management tools. Additional advanced features are available with HPE's DCNM SN6630C license mentioned below.

Software Components, Optional

HPE SN6630C 16-Port Upgrade E-LTU

The flexibility of the SN6630C switch is provided by the C-series SN6630C 16-port 32Gb FC Upgrade license, which allows the addition of sixteen 32-Gbps ports.

HPE SN6630C Data Center Network Manager E-LTU

The "Standard" Cisco Data Center Network Manager (Essentials Edition) software that is included at no charge with the SN6630C Switch provides basic switch configuration and troubleshooting capabilities. The HPE C-series Data Center Network Manager (DCNM) License extends Cisco Data Center Network Manager by advanced features such as historical performance data collection for network traffic hot-spot analysis, centralized management services and advanced application integration. By default, a 30-day trial license (with advanced features) is enabled on the switch. Customers must purchase the HPE SN6630C DCNM Switch E-LTU (switch-based license) to continue to utilize the advanced DCNM features.

HPE SN6630C Enterprise Package E-LTU

The HPE C-series MDS switches have a set of advanced traffic engineering and advanced security features that are recommended for all Enterprise SANs. These features are bundled together in a management application called the HPE SN6630C Enterprise Package. Please refer to the Cisco MDS Enterprise Package Data Sheet for more information:
http://www.cisco.com/c/en/us/products/collateral/storage-networking/mds-9000-software-licensing/product_data_sheet09186a00801ca6ac.html

HPE C-series SAN Insights (Cisco SAN Analytics) E-LTU

Cisco SAN Analytics solution 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 SN6630C 32Gb FC Switch. Cisco SAN Analytics 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 Cisco Data Center Network Manager. Cisco SAN Analytics, once enabled via the feature analytics CLI command, provides a 120-day trial license. To continue the use of these features after the trial period ends, customers must purchase the HPE SN6630C SAN Insights 1-year/3-year/5-year term E-LTU (switch-based-license) for on-board Analytics, Streaming Telemetry and SAN Insights on Data Center Network Manager and other telemetry receivers.

To utilize the features of the HPE SAN Insights license and visualize the available Analytics and Telemetry data through the DCNM interface, customers must have both the HPE DCNM and HPE SAN Insights licenses installed, and be using DCNM version 11.1(1) or later and NX-OS 8.4(1) or later.

Notes: HPE C-series SAN Insights (Cisco SAN Analytics) Software 3-year term License-to-Use (LTU/E-LTU) includes maintenance and support for the term duration of the license. At the end of the term license period, customer needs to purchase a new license to continue using the software. Software renewal via HPE Pointnext Services is not allowed/supported.

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.
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 HPE 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 HPE in the country in which you obtained the software.

Service and Support

Achieve maximum return from your IT investment

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

Connect your devices

Unlock all of the benefits of your technology investment by connecting your products to Hewlett Packard Enterprise. Reduce down time, increase diagnostic accuracy and have a single consolidated view of your environment. By connecting, you will receive 24x7monitoring, pre-failure alerts, automatic call logging, and automatic parts dispatch. HPE Proactive Care Service and HPE Datacenter Care Service customers will also benefit from proactive activities to help prevent issues and increase optimization. All of these benefits are already available to you with your server storage and networking products, securely connected to HPE support. Learn more about getting connected at **http://www.hpe.com/services/getconnected**

Consume IT on your terms

HPE GreenLake Flex Capacity

Combines the simplicity, agility, and economics of public cloud with the security and performance benefits of on-premises IT. You determine your own “Right Mix” of Hybrid IT and workload placement without having to use.

With its agile pay-per-use service, HPE GreenLake Flex Capacity can help your IT organization:

- Avoid IT expenses stemming from overprovisioning
- Improve time to market by maintaining a safe buffer of capacity, ready for use when you need it
- Keep capacity ahead of demand with regular monitoring—and a simple change order to replenish
- Pay for only the capacity used, not the capacity deployed
- Reduce IT risk with tailored support

Free up resources with Operational Services from HPE Pointnext

Choose from the recommended services for customers purchasing from Hewlett Packard Enterprise or an authorized reseller are quoted using Hewlett Packard Enterprise order configuration tools.

Service and Support

HPE Datacenter Care

Helps customers to address the pressing needs of IT today and smoothly transform to a more agile cloud-like IT operations model. We help run and monitor your IT by offloading the day to day routine tasks, helping customers be more predictive and proactive, and saving time with one place to call with for all of their IT. Datacenter Care is available as both tailored statement of work and as a packaged service for 3, 4, and 5 year terms.

For HPE SN6630C SAN Insights Software with the 1-year term LTU, Datacenter Care is available as a tailored statement of work service. For HPE SN6630C SAN Insights Software with the 3-years, or 5-years term LTUs, Datacenter Care is available as both a tailored statement of work, and also as a 3-years, or 5-years term packaged service (matching the SW LTU term).

Partner with an assigned account team backed by local and global experts, access HPE enhanced call experience with priority access, use specialized support for complex, technologies, choose hardware and software support for your devices, implement proactive monitoring to stay ahead of issues , and access HPE IT best practices and IP. HPE Datacenter Care advantage options are available to add to your agreement to give you specialized expertise for performance, security, back up analysis, and much more.

HPE Proactive Care

Gives customers an enhanced call experience. When your products are connected to HPE, Proactive Care helps prevent problems and maintains IT stability by utilizing personalized proactive reports with recommendations and advice.

For HPE SN6630C SAN Insights Software with the 3-years, or 5-years term LTUs, Proactive Care is available as a 3-years, or 5-years term packaged service (matching the SW LTU term).
https://www.hpe.com/h20195/v2/GetPDF.aspx/4AA3-8855ENW.pdf

HPE Proactive Care Advanced

Incorporates all the deliverables of HPE Proactive Care plus includes personalized support from a local, assigned Account Support Manager who will share best practice advice and personalized recommendations designed to help improve availability and performance to help increase stability and reduce unplanned downtime. Leverage your system's ability to connect to HPE for pre-failure alerts, automatic call logging and parts dispatch. For business critical incidents, Proactive Care Advanced offers critical event management to help reduce mean time to resolution. HPE Service Credits are included to redeem for technical and operational services. For HPE SN6630C SAN Insights Software with the 3-years, or 5-years term LTUs, Proactive Care Advanced is available as a 3-years, or 5-years term packaged service (matching the SW LTU term).

https://www.hpe.com/h20195/v2/getdocument.aspx?docname=4AA5-3259ENW

Notes: HPE Proactive Care and HPE Proactive Care Advanced require that the customer connect their devices to HPE to help make the most of these services and receive all the deliverables.

HPE Foundation Care – (choose the response level that meets your needs)

HPE Foundation Care helps to simplify your support experience and make HPE your first call to help resolve hardware or software problems.

For HPE SN6630C SAN Insights Software with the 3-years, or 5-years term LTUs, Foundation Care is available as a 3-years, or 5-years term packaged service (matching the SW LTU term).

https://www.hpe.com/h20195/V2/GetDocument.aspx?docname=4AA4-8876ENW&cc=us&lc=en

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Service and Support

Other related services from HPE Pointnext

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 Service Credits

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

HPE Education Services

Keep your IT staff trained making sure they have the right skills to deliver on your business outcomes. Book on a class today and learn how to get the most from your technology investment. **http://www.hpe.com/ww/learn**

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

Defective Media Retention is an option available with HPE Datacenter Care, HPE Proactive Care, Proactive Care Advanced, and HPE Foundation Care and applies only to Disk or eligible SSD/Flash Drives replaced by HPE due to malfunction.

HPE Support Center

The HPE Support Center is a personalized online support portal with access to information, tools and experts to support HPE business products. Submit support cases online, chat with HPE experts, access support resources or collaborate with peers.

Learn more **https://support.hpe.com/hpesc/public/home**

Hewlett Packard Enterprise Support Center Mobile App* allows you to resolve issues yourself or quickly connect to an agent for live support. Now, you can get access to personalized IT support anywhere, anytime.
HPE Insight Remote Support and HPE Support Center are available at no additional cost with a HPE warranty, HPE Support Service or HPE contractual support agreement.
Notes: *HPE Support Center Mobile App is subject to local availability

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For more information

http://www.hpe.com/services
https://www.hpe.com/us/en/services/operational.html

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

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

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

Configuration Information

The SN6630C Switch comes preconfigured with 48 or 96 autosensing Fibre Channel ports capable of 32, 16, 8Gb and 4Gb in a compact 2RU form factor chassis. An On-Demand Port Activation license is available for "pay as you grow" expansion in 16-port increments for up to 96 Fibre Channel ports. Customers can choose between standalone models or 32Gb SFPs bundled configuration.

Step 1 - Base Configuration (Select one)

Description	SKU
HPE C-series SN6630C 96/48 32Gb Fibre Channel Switch	
HPE C-series SN6630C 32Gb 96-port/48-port Fibre Channel Switch	R4D90A
96-Port Fabric Switch with 48 active ports, Dual Power Supplies, Power Cords (configurable by ship-to country) and 2 Fans, VSANs, PortChannels, Cisco Data Center Network Manager, firmware, accessory kit and documentation.	
HPE C-series SN6630C 32Gb 48-port 32Gb SFP+ Fibre Channel Switch	
HPE C-series SN6630C 32Gb 96-port/48-port 32Gb SFP+ Fibre Channel Switch	R4D91A
96-Port Fabric Switch with 48 active ports bundled with 48x32Gb SW SFP+, Dual Power Supplies, Power Cords (configurable by ship-to country) and 2 Fans, VSANs, PortChannels, Cisco Data Center Network Manager, firmware, accessory kit and documentation.	
HPE C-series SN6630C 32Gb 96-port 32Gb SFP+ Fibre Channel Switch	
HPE C-series SN6630C 32Gb 96-port/96-port 32Gb SFP+ Fibre Channel Switch	R4D92A
96-Port Fabric Switch with 96 active ports bundled with 96x32Gb SW SFP+, Dual Power Supplies, Power Cords (configurable by ship-to country) and 2 Fans, VSANs, PortChannels, Cisco Data Center Network Manager, firmware, accessory kit and documentation.	

Step 2 - Optional Software

On Demand Port Activation License	
HPE C-series SN6630C 32Gb 16-port Fibre Channel Upgrade E-LTU	R4G95AAE
Management Software	
HPE C-series SN6630C SAN Insights 1yr E-LTU	R5Z92AAE
HPE C-series SN6630C DCNM Switch E-LTU	R4G96AAE
HPE C-series SN6630C SAN Insights 5yr E-LTU	R5Z93AAE
HPE C-series SN6630C Enterprise Package E-LTU	R4G98AAE
HPE C-series SN6630C SAN Insights 3yr E-LTU	R4G97AAE

Step 3 - Options

Select each required option with quantities specified:

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

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

Configuration Information

Description	SKU
8Gb FC Transceivers	
HPE MDS 9000 8Gb FC SFP+ Short Range Transceiver	AJ906A
HPE MDS 9000 8Gb FC SFP+ Long Range Transceiver	AJ907A

Notes: Each port on the SN6630C may be configured to accept Short or Long Wave SFP optical transceivers. There are two SN6630C switch bundles available: one populated with 48 32Gb SW SFPs and one populated with 96 32Gb SW SFPs. For the standalone switch, 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

Recommended 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 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

Technical Specifications

Family Information

	Switch Type	Maximum ports	Number of slots per chassis
HPE C-series SN8500C/SN8700C 4-slot/8-slot 16/32/64Gb FC Director	Multilayer Director	4-slot: 192 16/32/64 Gbps Fibre Channel ports, 192 FCoE ports 8-slot: 384 16/32/64 Gbps Fibre Channel ports, 384 FCoE ports	Four/Eight
HPE C-series SN6630C 32Gb Fabric Switch	Multilayer Fabric Switch	Up to 96 32 Gbps Fibre Channel ports	One fixed
HPE C-series SN6620C 32Gb Fabric Switch	Multilayer Fabric Switch	Up to 48 32 Gbps Fibre Channel ports	One fixed
HPE C-series SN6610C 32Gb Fabric Switch	Multilayer Fabric Switch	Up to 32 32 Gbps Fibre Channel ports	One fixed and one expansion slot
HPE C-series SN6010C 16Gb Fabric Switch	Multilayer Fabric Switch	Up to 48 16 Gbps Fibre Channel ports	One fixed
HPE C-series SN6500C 16Gb Multi-service Switch	Multilayer Fabric Switch	Up to 40 16 Gbps FC ports, 2 fixed 10GbE FCIP ports, 8 fixed 10GbE FCoE ports	Two fixed

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.

Fabric Services

- Name server
- Registered state change notification (RSCN)
- Login services
- 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 (ANSI INCITS 512-2015)
- 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)

Technical Specifications

- FC-FS-4
- 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
- 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
- FCP, Revision 12 (ANSI INCITS 269-1996)
- FCP-2, Revision 8 (ANSI INCITS 350-2003)
- 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-6, Revision 2.00 (ANSI INCITS 509-2014)
- 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-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
- Fibre Channel standard port types: E, F, and B
- Fibre Channel enhanced port types: SD, ST, and TE
- FC-NVMe
- In-band management using IP over Fibre Channel (RFC 2625)
- IPv6, IPv4, and Address Resolution Protocol (ARP) over Fibre Channel (RFC 4338)

Technical Specifications

- Extensive IETF-standards-based TCP/IP, Simple Network Management Protocol Version 3 (SNMPv3), and Remote Monitoring (RMON) MIBs

Advanced Services

Diagnostic and Troubleshooting

Please note that some services require the optional Enterprise Package license to be activated.

- NPIV
- VSAN
- PortChannels
- NPV mode
- FlexAttach
- F-port trunking and channeling
- Flow-based and zone-based QoS
- IVR (in Cisco MDS 9000 NX-OS Software Release 8.3(1) or later)
- SPAN
- POST diagnostics
- Online diagnostics
- Internal loopbacks
- Fibre Channel traceroute
- Fibre Channel ping
- Fibre Channel debug
- Cisco Fabric Analyzer
- Syslog
- Port-level statistics

Management

- Access methods
  - Out-of-band 10/100/1000 Ethernet port
  - EIA/TIA-232 serial console port
  - In-band Fibre Channel over IP (FCIP)
- Access protocols
  - CLI
  - SNMP
  - SMI-S
- Security
  - RBAC using RADIUS or TACACS+ authentication, authorization, and accounting (AAA) functions
  - VSAN-based roles
  - SSHv2
  - SNMPv3

Management Applications

- Zero-touch deployment with DHCP (in Cisco MDS 9000 NX-OS Software Release 6.2.9 or later)
- Cisco MDS 9000 Family CLI
- Cisco Data Center Network Manager
- C-series Data Center Network Manager (optional; requires C-series Data Center Network Manager license)

Technical Specifications

Availability

- Non-disruptive software upgrades
- Process monitoring and stateful process restart
- Per-VSAN fabric services
- Hot-swappable SFP and SFP+ optics
- PortChannels aggregating up to 16 ports
- F-port Channeling
- Online diagnostics

Safety

- CE Marking
- UL 60950 -1
- CAN/CSA-C22.2 No. 60950 -1
- EN 60950 -1
- IEC 60950 -1
- 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
- System LEDs
- SNMP traps for alerts

Technical Specifications

Environmental

- Dimensions: 3.39 x 17.42 x 22.28 in. (8.61 x 44.25 x 56.59 cm), 2RU
- Rack-mountable in standard 19-inch Electronic Industries Alliance (EIA) rack
- Weight of fully configured chassis: 41.62 lb (18.88 kg)
- Temperature, ambient operating: 32° to 104°F (0° to 40°C)
- Temperature, ambient non-operating and storage: -40° to 158°F (-40° to 70°C)
- Relative humidity, ambient (noncondensing) operating: 10 to 90%
- Relative humidity, ambient (noncondensing) non-operating and storage: 10 to 95%
- Altitude, operating: -197 to 6500 ft (-60 to 2000m)

Power and Cooling

- 80 Plus Platinum certified power supplies
- Power supply
- 1200W AC/ HVAC/ HVDC Bidirectional airflow (2 per switch)
- Power grid redundancy (1+1)
- Two power cords (both are required)
- Standard CAB-HVAC-C14-2M IEC C14 to Saf-d-grid connector on the power supply receptacle
- Localized AC power cords that connect to AC sockets specific to regions
- AC input: 90V to 305V
- DC input: 192V to 400V
- Frequency: 50 to 60 Hz (nominal)
- Typical power consumption
- 246W for Idle 96-port switch with (1+1) PSU redundancy without optics modules
- 330W for 96-port switch with 48 32G optics modules under typical conditions
- 555W for 96-port switch with 96 32G optics modules under typical conditions
- Airflow
- 2 fan trays as standard configuration
- Back to front (toward ports) using port-side exhaust fans
- Maximum 255 Cubic Feet per Minute (CFM)
- Nominal 110 CFM (25C)

Summary of Changes

Date	Version History	Action	Description of Change
17-Aug-2020	Version 4	Changed	Added SN8700C product family information
03-Aug-2020	Version 3	Changed	QuickSpecs layout was updated and Branding Refresh was applied.
04-May-2020	Version 2	Changed	Added SAN Insights 1-yr and 5-yrs licenses
02-Mar-2020	Version 1	New	New QuickSpecs

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