

Overview

HPE StoreFabric SN2010M Switch

With an increasing need to access data faster and accommodate growing workloads, rising levels of east-west traffic, and new storage arrays based on flash storage technologies, a high bandwidth, low-latency network becomes paramount. The HPE StoreFabric SN2010M switches are ideal for modern server and storage networks. Supporting port speeds of 1, 10, 25, 40 and 100GbE, delivering predictable performance and zero packet loss at line-rate across each port and packet size. Its unique half-width form factors and port counts, these Ethernet switches allow for two SN2010 units to be deployed side-by-side allowing for increased density, making it the ideal top-of-rack switch. Optimized for storage combined with efficient design provide enterprise-level performance with attractive economics and outstanding ROI. Networks built on the HPE SN2010M are fast, reliable, and scalable while also being affordable and easily managed. It supports all types of primary and secondary storage, providing consistently fair, fast, low-latency connectivity even under heavy workloads or a mix of different port speeds. This makes them ideal for storage, hyper converged, financial services, and media and entertainment deployments.

HPE StoreFabric M-Series Ethernet switches give you the right network bandwidth with consistent performance for high-performance and storage workloads. Delivering the highest feature set at the right price allows you to get the most out of your Ethernet infrastructure to best support a variety of use cases, including media and entertainment; streaming video, financial services industry, virtualized data centers, and next generation storage, including software-defined storage and NVMe flash. With HPE M-series switches, you can:

Optimize Storage— Modernize your network to eliminate limitations and bottlenecks that can be caused by the addition of flash storage.

Enjoy efficient network performance—Avoid packet loss, provide predictable performance with line-rate packet delivery across all ports and all packet sizes.

Realize breakthrough economics—Make better use of your data center resources with the highest port density per rack unit and the industry's lowest power consumption.

Accelerate business innovation—Support 1/10/40Gbps for existing workloads and deliver 25/100Gbps Ethernet to respond quickly to business needs and stay on the leading edge of technology.

SN2010M is available in following model:

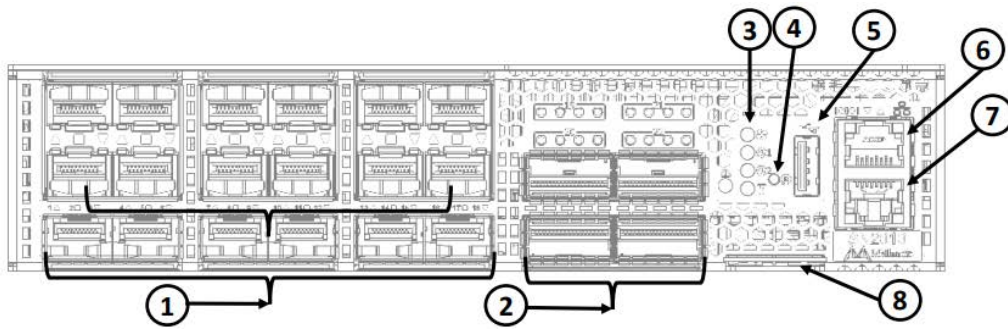
- HPE StoreFabric SN2010M 25GbE 18SFP28 4QSFP28 Half Width Switch (Q9E63A)

Overview

Figure 1 HPE StoreFabric M-Series SN2010M

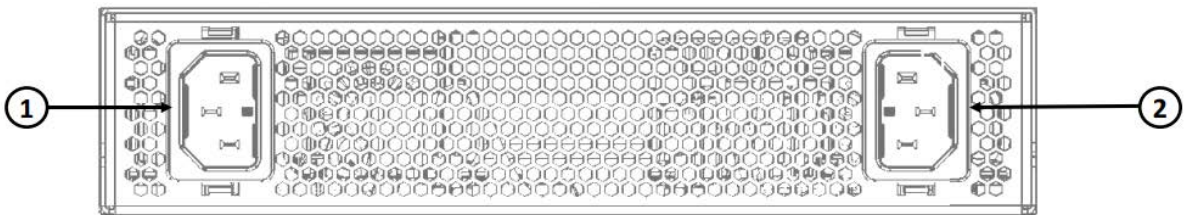


Figure 2 HPE StoreFabric M-Series SN2010M (18 x SFP28 + 4 x QSFP28)



Front View

- | | |
|-----------------------|---------------------------------------|
| 1. SFP Ports (1-18) | 5. USB Port |
| 2. QSFP Ports (19-22) | 6. Console Port |
| 3. System Status LEDs | 7. MGMT Port |
| 4. Reset Button | 8. Inventory Information Pull-out Tab |



Rear View

1. Power Supply (non-replaceable)
2. Power Supply (non-replaceable)

Features and Benefits

Key Features and Benefits

- The HPE StoreFabric SN2010M Ethernet switch is a Half-width 10/25GbE and 40/100GbE Ethernet Switch ideal for Primary, Secondary storage and Hyperconverged Infrastructures. The SN2010 switch is the ideal top of rack (ToR) solution packed with 18 ports of 10/25GbE and 4 breakable ports of 40/100GbE.
- SN2010M introduces low latency for 10/25GbE and 40/100GbE switching, features a robust implementation of data, control and management planes, and offers the most compact form factor and lowest power consumption.
- SN2010M switch provides ultra-low latency of under 300ns port-to-port. This is advantageous for flash storage which has moved latency bottlenecks from storage access to the network, as well as for the burst nature of today's software defined and cloud data centers traffic.
- The buffering architecture of the HPE SN2010M switches provides superior micro burst absorption for applications that burst data at random intervals.
- The HPE StoreFabric SN2010M switch provides a flexible combination of ports, allowing for great flexibility, efficiency, simplifying scale-out environments and saving on total cost of ownership.
- Optimized port configuration enables high-speed rack connectivity to the server at 1/10GbE or 25GbE speeds with 40/100GbE uplink ports that allow for a variety of blocking ratios that suit specific application requirements.
- SN2010M with its optimization for RoCE, full buffer utilization, and zero packet loss combined into a small form factor with low latency make it the ideal switch for ESF (Ethernet Storage Fabric).
- The HPE StoreFabric SN2010M switches provide port density in a single rack unit, allowing for higher capacity and efficiency, simplifying scale-out environments and saving on total cost of ownership.
- Its unique half-width form factors and port counts, these Ethernet switches allow for two SN2010 units to be deployed side-by-side allowing for increased density, making it the ideal top-of-rack switch.
- Designed to use less electric power than competing switches, providing one of the industry's lowest power draws, producing less heat than competing products allowing reduced OpEx cost.
- SN2010 is the best fit with a mix of 10/25GbE and 40/100GbE ports that are all designed for zero packet loss. Distributed storage, hyperconverged, analytic and database solutions require the ability to scale out without compromising performance or high availability.
- High throughput, low latency and active-active network switching capabilities are crucial when deploying clustered servers and storage. SN2010M delivers connectivity to many clients plus 40/100GbE connectivity to selected servers, storage systems or for network uplinks, and all with low latency.

Models

HPE M-Series SN2010M Ethernet Switch Models HPE StoreFabric SN2010M 25GbE 18SFP28 4QSFP28 Switch

Q9E63A

Product Highlights

StoreFabric M-Series SN2010M

- Unique form factor of half-width allow for redundant units to be placed side-by-side in 1 rack unit saving space and increasing density.
- Supporting port speeds of 1, 10, 25, 40, 50 and 100GbE, delivering predictable performance and zero packet loss at line-rate across each port and packet size.
- Ultra low latency with true cut through performance, Zero packet loss performance with DCBX, PFC, and ECN support.

User Interfaces: Command Line & Web Interface

Industry-standard command line interface (CLI). The CLI is accessed through SSH or Telnet sessions, or directly via the console serial port on the power-side panel.

The CLI can be in one of several modes, and each mode makes available a certain group (or level) of commands for execution.

Web interface - web GUI that accept input and provide output by generating webpages which can be viewed by the user using a web browser

The inventory in the switch system can be accessed through a SNMP MIB browser. These devices are indexed (entPhysicalIndex) using three levels: Module layer, Device layer & Sensor layer

System Management

Management Interface

Management interfaces are used in order to provide access to switch management user interfaces (e.g. CLI, WebUI). HPE StoreFabric Switch Management supports out-of-band (OOB) dedicated interfaces (e.g. mgmt0, mgmt1) and in-band dedicated interfaces. In addition, most HPE StoreFabric Switches feature a serial port that provides access to the CLI.

NTP, Clock & Time Zones

Network Time Protocol (NTP) is a networking protocol for clock synchronization between computer systems over packet-switched, variable-latency data networks. NTP is intended to synchronize all participating computers to within a few milliseconds of Coordinated Universal Time (UTC) and is designed to mitigate the effects of variable network latency.

PTP

IEEE Standard for a Precision Clock Synchronization Protocol for Networked Measurement and Control Systems (standard number 1588) defines the means to achieve time synchronization in the orders of sub microseconds.

Software Management

Configuration Management

Saving, Loading & restore to factory defaults of the Configuration File

Logging

Logging of system events in several severity levels and over a configurable period of time.

Debugging

Enables debug traces for Ethernet modules and protocols.

Link Diagnostic Per Port

Enables an insight into the physical layer components - see information such as a cable status (plugged/unplugged) or if Auto-Negotiation has failed, etc.

Signal Degradation Monitoring

A system can monitor the bit error rate (BER) in order to ensure a quality of the link.

Product Highlights

Telemetry

Sampling (histograms) – a network administrator can enable a sampling of the port buffer occupancy, record occupancy changes over time, and provide information for different levels of buffer occupancy, and amount of time the buffer has been occupied during the observation period.

Thresholds – thresholds may be enabled per port to record the network time when port buffer occupancy crosses the defined threshold and when buffer occupancy drops below it.

User Management and Security

- Different user account types with different privileges
- RADIUS, TACACS+ & LDAP support
- **System Secure Mode** - configures the switch system to run secure algorithms in compliance with FIPS 140-2 requirements

Cryptographic (X.509, IPSec) and Encryption

- Configuring, generating and modifying x.509 certificates used in the system.

802.1x Protocol

Authenticate hosts (or supplicants) and to allow connection only to a list of allowed hosts pre-configured on an authentication server.

Network Management Interfaces SNMP, JSON & XML

Puppet Agent

Built-in agent for the open-source “Puppet” configuration change management system.

Linux Dockers run your own applications on a Linux docker’s image embedded in the switch SW.

Software Components, Standard, Base Models

Ethernet Switching

Interface Isolation

Group interfaces in sets where traffic from each port is isolated from other interfaces in the group.

Link Aggregation Group (LAG)

Several same speed links are combined into a single logical entity with the accumulated bandwidth of the originating ports

MLAG

Extending the implementation of the LAG to more than a single device provides yet another level of redundancy that extends from the link level to the node level.

VLANs

L2 segment of the network which defines a broadcast domain and is identified by a tag added to all Ethernet frames running within the domain

Voice VLAN

Provide QoS to voice and data traffic in a scenario where a terminal is connected to an IP phone which is in turn connected to the port on the switch

QinQ

Segregate the traffic of different customers in their infrastructure, while still giving the customer a full range of VLANs for their internal use by adding a second 802.1Q VLAN tag to an already tagged frame

Spanning Tree

Product Highlights

Rapid Spanning Tree Protocol (RSTP) provides for rapid recovery of connectivity following the failure of a bridge/bridge port or a LAN

Following are supported: BPDU Filter, BPDU Guard, Loop Guard, Root Guard, MSTP & RPVST

OpenFlow - Support for OpenFlow 1.3

OpenFlow is a network protocol that facilitates direct communication between network systems via Ethernet. Software Defined Networks (SDN) allows a centralist management of network equipment. OpenFlow allows the SDN controller to manage SDN equipment. The OpenFlow protocol allows communication between the OpenFlow controller and OpenFlow agent.

VXLAN

VXLAN (Virtual eXtensible Local Area Network) addresses the requirements of the L2 and L3 data center network infrastructure in the presence of virtual networks in a multi-tenant environment. It runs over the existing networking infrastructure and provides a means to “stretch” a L2 broadcast domain over a layer 3 network.

IGMP Snooping

Snooping and updating tables based on the IGMP protocol used by hosts and adjacent routers on IP networks to establish multicast group memberships

Link Layer Discovery Protocol (LLDP)

A vendor-neutral Link Layer protocol in the Internet Protocol Suite used by network devices for advertising their identity, capabilities, and neighbors on a IEEE 802 LAN

Quality of Service (QoS)

QoS Classification, QoS ReWrite, Queuing and Scheduling, RED & ECN are supported

Access Control List

An Access Control List (ACL) is a list of permissions attached to an object, to filter or match switches packets. When the pattern is matched at the hardware lookup engine, a specified action (e.g. permit/deny) is applied

Port Mirroring

Port mirroring enables data plane monitoring functionality which allows the user to send an entire traffic stream for testing.

sFlow

sFlow (ver. 5) is a procedure used for statistical monitoring of traffic in networks. MLNX-OS supports an sFlow sampling mechanism (agent), which includes collecting traffic samples and data from counters. The sFlow datagrams are then sent to a central collector.

RDMA over Converged Ethernet (RoCE)

Remote Direct Memory Access (RDMA) is the remote memory management capability that allows server to server data movement directly between application memory without any CPU involvement.

Priority Flow Control

Provides an enhancement to the existing pause mechanism in Ethernet. The global Ethernet pause option stops all traffic on a link. PFC creates eight separate virtual links on the physical link and allows any of these links to be paused and restarted independently, enabling the network to create a no-drop class of service for virtual links.

Shared Buffers

All successfully received packets by a switch are stored on internal memory from the time they are received until the time they are transmitted. The packet buffer is fully shared between all physical ports and is hence called a shared buffer. Buffer configuration is applied in order to provide lossless services and to ensure fairness between the ports and priorities.

Product Highlights

Storm Control

Storm Control is a feature which can be enabled on L2 Ethernet ports and port-channels to monitor inbound traffic to prevent disruptions caused by a broadcast, multicast, or unicast traffic storm on the physical interfaces.

Store-and-Forward

Store-and-Forward is used to describe a functionality where a switch receives a complete packet, stores it, and only then forwards it to the destination

Since the switch makes forwarding decisions based on the destination address which is at the header of the packet, the switch can make the forwarding decision before receiving the complete packet. This process is called cut-through, as the switch forwards part of the packet before receiving the complete packet. Cut-through and store-and-forward modes are configurable as a switch global or per port option.

IP Routing

IP Interfaces

The following 3 types of IP interfaces are supported:

- VLAN interface
- Loopback interface
- Router port interface

IPv6

IP version 6 (IPv6) is a routing protocol which succeeds IPv4. With the expansion of the Internet and data bases IPv6 addresses consist of 128 bits whose purpose is to allow networks to include a significantly higher number of nodes by increasing the pool of available unique IP addresses. IPv6 packets alleviate overhead and allow for future customizability.

OSPF

Open Shortest Path First (OSPF) is a link-state routing protocol for IP networks. It uses a link state routing algorithm and falls into the group of interior routing protocols, operating within a single autonomous system (AS).

BGP

Border Gateway Protocol (BGP) is an exterior gateway protocol which is designed to transfer routing information between routers. It maintains and propagates a table of routes which designates network reachability among autonomous systems (ASs).

BFD Infrastructure

Many protocols use slow Hello mechanisms and failure is detection usually seconds after the problem occurs. The BFD goal is to provide low overhead short duration detection of failures between adjacent nodes and single mechanism that can be used for liveness detection over any media.

Policy Rules

Route Map

Route maps define conditions for redistributing routes between routing protocols. A route map clause is identified by a name, filter type (permit or deny) and a sequence number. Clauses with the same name are components of a single route map; the sequence number determines the order in which the clauses are compared to a route.

IP Prefix-List

Prefix-list is a list of entries, each of which can match one or more IP prefixes. A prefix-list is usually used to match a specific IP prefix, mostly in relation to IP route destinations

Multicast (IGMP and PIM)

Product Highlights

Protocol independent multicast (PIM) is a collection of protocols that deal with efficient delivery of IP multicast (MC) data. Those protocols are published in the series of RFCs and define different ways and aspects of multicast data distribution. PIM protocol family includes PIM dense mode (PIM-DM), PIM sparse mode (PIM-SM, which is not supported on Mellanox platforms), Bidirectional PIM (PIM-BIDIR) and Bootstrap router (BSR) protocol.

PIM builds and maintains multicast routing tables based on the unicast routing information provided by unicast routing tables that can be maintained statically or dynamically by IP routing protocols like OSPF and BGP.

VRRP

The Virtual Router Redundancy Protocol (VRRP) is a computer networking protocol that provides for automatic assignment of available IP routers to participating hosts. This increases the availability and reliability of routing paths via automatic default gateway selections on an IP subnetwork.

MAGP

Multi-active gateway protocol (MAGP) is aimed to solve the default gateway problem when a host is connected to a set of switch routers (SRs) via MLAG.

The network functionality in that case requires that each SR is an active default gateway router to the host, thus reducing hops between the SRs and directly forwarding IP traffic to the L3 cloud regardless which SR traffic comes through.

DHCP Relay

Since Dynamic Host Configuration Protocol must work correctly even before DHCP clients have been configured, the DHCP server and DHCP client need to be connected to the same network.

In larger networks, this is not always practical because each network link contains one or more DHCP relay agents. These DHCP-R agents receive messages from DHCP clients and forward them to DHCP servers thus extending the reach of the DHCP beyond the local network.

Service and Support

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

NOTE: The hardware warranty covers firmware and embedded non-saleable software. For extended hardware support and installation information, please see the “Services and Support” Section.

Service and Support

Protect your business beyond warranty with HPE Support Services

HPE Pointnext provides a comprehensive portfolio including Advisory and Transformational, Professional, and Operational Services to help accelerate your digital transformation. From the onset of your transformation journey, Advisory and Transformational Services focus on designing the transformation and creating a solution roadmap. Professional Services specializes in creative configurations with flawless and on-time implementation, and on-budget execution. Finally, operational services provides innovative new approaches like Flexible Capacity and Datacenter Care, to keep your business at peak performance. HPE is ready to bring together all the pieces of the puzzle for you, with an eye on the future, and make the complex simple.

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 24x7 monitoring, 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>

Optimized Care

HPE Proactive Care* with 6 hour call-to-repair commitment, three year Support Service

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. This Service combines three years' proactive reporting and advice with our highest level of hardware support - HPE's 24x7, six hour hardware call-to-repair. HPE is the only leading manufacturer who makes this level of coverage available as a standard service offering for your most valuable servers.

<https://www.hpe.com/h20195/v2/GetPDF.aspx/4AA3-8855ENW.pdf>

Standard Care

HPE Proactive Care* with 24x7 coverage, three year Support Service

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. This Service combines three years' proactive reporting and advice with our 24x7 coverage, four hour hardware response time when there is a problem.

<https://www.hpe.com/h20195/v2/GetPDF.aspx/4AA3-8855ENW.pdf>

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

Basic Care

HPE Foundation Care 24x7, three-year Support Service

HPE Foundation Care 24x7 gives you access to HPE 24 hours a day, seven days a week for assistance on resolving issues. This service includes need based Hardware onsite response within four hours. Simplify your support experience and make HPE your first call to help resolve hardware or software problems.

<https://www.hpe.com/h20195/v2/getdocument.aspx?docname=4AA4-8876ENW>

Service and Support

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

Related Services

HPE Installation and Start-up Service

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

<https://www.hpe.com/h20195/v2/Getdocument.aspx?docname=a00025816enw>.

Additional Services Information

HPE Datacenter Care service

HPE Datacenter Care helps improve IT stability and security, increase the value of IT, and enable agility and innovation. It is a structured framework of repeatable, tested, and globally available services “building blocks.” You can deploy, operate, and evolve your datacenter wherever you are on your IT journey. With HPE Datacenter Care, you benefit from a personalized relationship with HPE via a single point of accountability for HPE and others’ products. For more information, visit <http://www.hpe.com/services/datacentercare>

HPE Flexible Capacity, With Flexible Capacity, you get the speed, scalability, and economics of the public cloud in the privacy of your data center. Gain the advantages of the public cloud—consumption-based payment, rapid scalability without worrying about capacity constraints. Reduce the “heavy lifting” needed to operate a data center. And retain the advantages that IT provides the business (i.e., control, security). Deliver the right user experience, choose the right technology for the business, manage privacy and compliance, and manage the cost of IT. And, you have the option to use the public cloud when needed.

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

The defective media retention service feature option 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 <http://www.hpe.com/support/hpesc>

HPE's 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.

*HPE Support Center Mobile App is subject to local availability

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

Service and Support

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/>

Family Information

| | HPE StoreFabric SN2010M | HPE StoreFabric SN2100M | HPE StoreFabric SN2410bM | HPE StoreFabric SN2410M | HPE StoreFabric SN2700M |
|------------------------------------|---|---|--|---|---|
| Description | Ideal ½ width ToR 1/10/25/40/50/100 GbE | Ideal ½ width ToR 10/25/40/50/100GbE | 1/10GbE ToR switch with 40/50/100GbE uplinks | 10/25GbE ToR switch with 40/50/100GbE uplinks | 40/50/100GbE spine Aggregation ToR |
| Ports Speeds | <ul style="list-style-type: none"> • 18 x 10/25GbE + 4x40/100GbE | <ul style="list-style-type: none"> • 16x40/100GbE • 32x50GbE • 64x10/25GbE | <ul style="list-style-type: none"> • 48x10GbE + 8x40/100GbE | <ul style="list-style-type: none"> • 48x10/25GbE + 8x40/100GbE | <ul style="list-style-type: none"> • 32x40/100GbE • 32x50GbE • 64x10/25GbE |
| Minimum Configuration | | 8 Ports - pay as you grow with 8 additional port option | 24x10 GbE + 4x100 GbE Ports - pay as you grow 24/4 additional port option | 24x10/25 GbE + 4x100 GbE Ports - pay as you grow 24/4 additional port option | 16 Ports - pay as you grow with 16 additional port option |
| Size | 1U (½ 19" wide) | 1U (½ 19" wide) | 1U | 1U | 1U |
| Switching Capacity | 1.7Tb/s | 3.2Tb/s | 4Tb/s | 4Tb/s | 6.4Tb/s |
| Processing Capacity | 2.52Bpps | 4.76Bpps | 5.95Bpps | 5.95Bpps | 9.52Bpps |
| Forwarding Technology | Cut Through and Store-and-forward | Cut Through and Store-and-forward | Cut Through and Store-and-forward | Cut Through and Store-and-forward | Cut Through and Store-and-forward |
| Latency | 300ns | 300ns | 300ns | 300ns | 300ns |
| Typical Power Consumption | 57W | 94W | 165W | 165W | 150W |
| Supported Operating Systems | ONYX | ONYX | ONYX | ONYX | ONYX |
| System Memory | 8GB | 8GB | 8GB | 8GB | 8GB |
| SSD Memory | 16GB | 16GB | 32GB | 32GB | 32GB |
| Packet Buffer | 16MB | 16MB | 16MB | 16MB | 16MB |
| 100/100 Mgmt Ports | 1 RJ45 | 1 RJ45 | 2 RJ45 | 2 RJ45 | 2 RJ45 |
| Serial Ports | 1 RJ45 | 1 RJ45 | 1 RJ45 | 1 RJ45 | 1 RJ45 |
| USB Ports | 1 Mini USB | 1 Mini USB | 1 | 1 | 1 |
| Airflow | Power-to-port airflow | Power-to-port airflow | power-to-port airflow; hot swappable | Power to port airflow; hot swappable | Power to port airflow; hot swappable |
| Power Supplies | 2 (1+1 redundant) not replaceable | 2 (1+1 redundant) not replaceable | 2 (1+1 redundant) hot-swappable | 2 (1+1 redundant) hot-swappable | 2 (1+1 redundant) hot-swappable |
| Fans | 2 fans not replaceable | 2 fans not replaceable | 4 (N+1 redundant) hot-swappable | 4 (N+1 redundant) hot-swappable | 4 (N+1 redundant) hot-swappable |
| Power Supplies | Frequency: 50-60Hz Input range: 100-264 AC Input current 4.5-2.9A | Frequency: 50-60Hz Input range: 100-264 AC Input current 4.5-2.9A | Frequency: 50-60Hz Input range: 100-264 AC Input current 4.5-2.9A | Frequency: 50-60Hz Input range: 100-264 AC Input current 4.5-2.9A | Frequency: 50-60Hz Input range: 100-264 AC Input current 4.5-2.9A |
| Size | 1.72" x 7.87" x 20"(43.9mm x 200mm x 508mm) | 1.72" x 7.87" x 20"(43.9mm x 200mm x 508mm) | 1.72" x 17.24" x 17"(43.9mm x 438mm x 436mm) | 1.72" x 17.24" x 17"(43.9mm x 438mm x 436mm) | 1.72" x 16.84" x 27"(43.9mm x 427.8mm x 686mm) |
| Weight | 4.53kg (10Lb) | 4.53kg (10Lb) | 8.52kg (18.8Lb) | 8.52kg (18.8Lb) | 11.1kg (24.5Lb) |

Configuration Information

Step 1 - Base Configuration

Select one:

| Model | Model Description | Part Number |
|-------|---|-------------|
| | HPE StoreFabric SN2010M 25GbE 18SFP28 4QSFP28 Switch 18 x 1/10/25 GbE + 4 x 40/100GbE ports 2 x Power cord, 1.83m, C13-C14 1 x Serial cable (DB9 to RJ45) 1 x HPE Warranty and Installation instructions HPE Quick Start Guide NOTE: Requires Rack Installation Kit & optical transceivers listed below. | Q9E63A |
| | HPE StoreFabric SN2100M Rack Installation Kit NOTE: Rack installation kit for StoreFabric SN2010M/SN2100M. | Q2F25A |

Step 2 - Options

| | Model Description | Part Number | |
|---|---|-------------|--|
| Transceivers | HPE M-series 100GbE QSFP28 SR4 100m Transceiver | Q2F19A | |
| | HPE M-series 40GbE QSFP28 SR4 100m Transceiver | Q7F11A | |
| | HPE M-series 100GbE QSFP28 1310nm PSM4 500m Transceiver | Q8J73A | |
| | HPE X150 100G QSFP28 LC LR4 10km SM Transceiver | JL275A | |
| | HPE X150 100G QSFP28 CWDM4 2km SM Transceiver | JH673A | |
| | 10GE Transceiver | | |
| | HPE M-series 10GbE SFP+ SR MM 300m Transceiver | Q6M30A | |
| | HPE BladeSystem c-Class 10Gb SFP+ SR Transceiver | 455883-B21 | |
| | QSA adapters | | |
| | HPE QSFP/SFP+ Adapter Kit | 655874-B21 | |
| HPE QSFP28 to SFP28 Adapter | 845970-B21 | | |
| 1GbE | | | |
| HPE X115 100M SFP LC FX Transceiver | JD102B | | |
| HPE X110 100M SFP LC LX Transceiver | JD120B | | |
| HPE X110 100M SFP LC LH40 Transceiver | JD090A | | |
| HPE X120 1G SFP LC SX Transceiver | JD118B | | |
| HPE X120 1G SFP LC LX Transceiver | JD119B | | |
| HPE X125 1G SFP LC LH40 1310nm Transceiver | JD061A | | |
| HPE X120 1G SFP LC LH40 1550nm Transceiver | JD062A | | |
| HPE X125 1G SFP LC LH70 Transceiver | JD063B | | |
| HPE X120 1G SFP RJ45 T Transceiver | JD089B | | |
| 10GE compatible Transceivers, DAC, and AOC | | | |
| HPE X130 10G SFP+ LC SR Transceiver | JD092B | | |
| HPE X130 10G SFP+ LC LR Transceiver | JD094B | | |
| HPE 10GBase-T SFP+ Transceiver | 813874-B21 | | |
| HPE X130 10G SFP+ LC SR Data Center Transceiver | JL437A | | |
| HPE X130 10G SFP+ LC LR Data Center Transceiver | JL439A | | |
| HPE X130 10G SFP+ LC ER 40km Transceiver | JG234A | | |

Configuration Information

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| HPE FlexNetwork X240 40G QSFP+ to 4x10G SFP+ 1m Direct Attach Copper Splitter Cable | JG329A |
| HPE FlexNetwork X240 40G QSFP+ to 4x10G SFP+ 3m Direct Attach Copper Splitter Cable | JG330A |
| HPE FlexNetwork X240 40G QSFP+ to 4x10G SFP+ 5m Direct Attach Copper Splitter Cable | JG331A |
| HPE BladeSystem c-Class 40G QSFP+ to 4x10G SFP+ 3m Direct Attach Copper Splitter Cable | 721064-B21 |
| HPE BladeSystem c-Class 40G QSFP+ to 4x10G SFP+ 5m Direct Attach Copper Splitter Cable | 721067-B21 |
| HPE FlexNetwork X240 10G SFP+ to SFP+ 0.65m Direct Attach Copper Cable | JD095C |
| HPE FlexNetwork X240 10G SFP+ to SFP+ 1.2m Direct Attach Copper Cable | JD096C |
| HPE FlexNetwork X240 10G SFP+ to SFP+ 3m Direct Attach Copper Cable | JD097C |
| HPE FlexNetwork X240 10G SFP+ to SFP+ 5m Direct Attach Copper Cable | JG081C |
| HPE X242 10G SFP+ to SFP+ 1m Direct Attach Copper Cable | J9281B |
| HPE X242 10G SFP+ to SFP+ 3m Direct Attach Copper Cable | J9283B |
| HPE BladeSystem c-Class 10GbE SFP+ to SFP+ 3m Direct Attach Copper Cable | 487655-B21 |
| HPE BladeSystem c-Class 10GbE SFP+ to SFP+ 5m Direct Attach Copper Cable | 537963-B21 |
| 40GE compatible Transceivers, DAC, and AOC | |
| HPE X140 40G QSFP+ MPO SR4 Transceiver | JG325B |
| HPE X140 40G QSFP+ MPO MM 850nm CSR4 300m Transceiver | JG709A |
| HPE X140 40G QSFP+ LC LR4 SM 10km 1310nm Transceiver | JG661A |
| HPE X242 40G QSFP+ to QSFP+ 1m Direct Attach Copper Cable | JH234A |
| HPE X242 40G QSFP+ to QSFP+ 3m Direct Attach Copper Cable | JH235A |
| HPE X242 40G QSFP+ to QSFP+ 5m Direct Attach Copper Cable | JH236A |
| HPE BladeSystem c-Class QSFP+ to 4x10G SFP+ 7m Active Optical Cable | 721070-B21 |
| HPE BladeSystem c-Class QSFP+ to 4x10G SFP+ 10m Active Optical Cable | 721073-B21 |
| HPE BladeSystem c-Class QSFP+ to 4x10G SFP+ 15m Active Optical Cable | 721076-B21 |
| HPE BladeSystem c-Class 40G QSFP+ to QSFP+ 5m Direct Attach Copper Cable | 720202-B21 |
| HPE BladeSystem c-Class 40G QSFP+ to QSFP+ 7m Active Optical Cable | 720205-B21 |
| HPE BladeSystem c-Class 40G QSFP+ to QSFP+ 10m Active Optical Cable | 720208-B21 |
| HPE BladeSystem c-Class 40G QSFP+ to QSFP+ 15m Active Optical Cable | 720211-B21 |
| HPE BladeSystem c-Class 40Gb QSFP+ MPO SR4 100m Transceiver | 720187-B21 |
| HPE BladeSystem c-Class 40Gb QSFP+ MPO SR4 300m Transceiver | 747698-B21 |
| HPE BladeSystem c-Class 40Gb QSFP+ LC LR4 Transceiver | 720190-B21 |
| HPE FlexNetwork X240 40G QSFP+ QSFP+ 1m Direct Attach Copper Cable | JG326A |
| HPE FlexNetwork X240 40G QSFP+ QSFP+ 3m Direct Attach Copper Cable | JG327A |
| HPE FlexNetwork X240 40G QSFP+ QSFP+ 5m Direct Attach Copper Cable | JG328A |
| HPE FlexNetwork X240 40G QSFP+ to 4x10G SFP+ 1m Direct Attach Copper Splitter Cable | JG329A |
| HPE FlexNetwork X240 40G QSFP+ to 4x10G SFP+ 3m Direct Attach Copper Splitter Cable | JG330A |
| HPE FlexNetwork X240 40G QSFP+ to 4x10G SFP+ 5m Direct Attach Copper Splitter Cable | JG331A |
| HPE X240 QSFP28 4xSFP28 1m Direct Attach Copper Cable | JL282A |
| HPE X240 QSFP28 4xSFP28 3m Direct Attach Copper Cable | JL283A |
| HPE X240 QSFP28 4xSFP28 5m Direct Attach Copper Cable | JL284A |

Configuration Information

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| HPE X140 40G QSFP+ LC BiDi 100m MM Transceiver | JL251A |
| HPE 40Gb QSFP+ Bidirectional Transceiver | 841716-B21 |
| HPE 40GbE QSFP+ to 4x10GbE SFP+ 5m Active Optical Cable | Q9S66A |
| HPE 100Gb QSFP28 to 4x25Gb SFP28 3m Direct Attach Copper Cable | 845416-B21 |
| HPE 100Gb QSFP28 to 4x25Gb SFP28 5m Direct Attach Copper Cable | 845418-B21 |
| 25GE compatible Transceivers, DAC, and AOC | |
| HPE X190 25G SFP28 LC SR 100m MM Transceiver | JL293A |
| HPE 25Gb SFP28 SR 100m Transceiver | 845398-B21 |
| HPE 25Gb SFP28 Short Wave 1-pack Pull Tab Optical Transceiver | Q2P64A |
| HPE 25Gb SFP28 to SFP28 0.5m Direct Attach Copper Cable | 844471-B21 |
| 25GE AOC | |
| HPE QSFP28 to 4x25Gb SFP28 7m AOC | 845420-B21 |
| HPE QSFP28 to 4x25Gb SFP28 10m AOC | 845422-B21 |
| HPE QSFP28 to 4x25Gb SFP28 15m AOC | 845424-B21 |
| HPE 25Gb SFP28 to SFP28 7m AOC | 844483-B21 |
| HPE 25Gb SFP28 to SFP28 10m AOC | 844486-B21 |
| HPE 25Gb SFP28 to SFP28 15m AOC | 845396-B21 |
| HPE 25GbE SFP28 to SFP28 3m Smart Active Optical Cable | Q9S67A |
| HPE 25GbE SFP28 to SFP28 5m Smart Active Optical Cable | Q9S68A |
| HPE 25GbE SFP28 to SFP28 10m Smart Active Optical Cable | Q9S69A |
| HPE 25GbE SFP28 to SFP28 15m Smart Active Optical Cable | Q9S70A |
| 100GE DAC | |
| HPE 100Gb QSFP28 to QSFP28 0.5m Direct Attach Copper Cable | 845402-B21 |
| HPE 100Gb QSFP28 to QSFP28 1m Direct Attach Copper Cable | 845404-B21 |
| HPE 100Gb QSFP28 to QSFP28 3m Direct Attach Copper Cable | 845406-B21 |
| HPE 100Gb QSFP28 to QSFP28 5m DAC | 845407-B21 |
| HPE 100Gb QSFP28 to QSFP28 5m Direct Attach Copper Cable | 845408-B21 |
| HPE X240 100G QSFP28 to QSFP28 1m Direct Attach Copper Cable | JL271A |
| HPE X240 100G QSFP28 to QSFP28 3m Direct Attach Copper Cable | JL272A |
| HPE X240 100G QSFP28 to QSFP28 5m Direct Attach Copper Cable | JL273A |
| HPE 100Gb QSFP28 to QSFP28 7m Active Optical Cable | 845410-B21 |
| HPE 100Gb QSFP28 to QSFP28 10m Active Optical Cable | 845412-B21 |
| HPE 100Gb QSFP28 to QSFP28 15m Active Optical Cable | 845414-B21 |
| HPE 100GbE QSFP28 to QSFP28 5m Active Optical Cable | Q9S71A |
| 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 LC 50m Cable | Q1H69A |
| HPE Premier Flex MPO/MPO OM4 12 fiber 1m | Q1H63A |
| HPE Premier Flex MPO/MPO OM4 12 fiber 2m | Q1H64A |
| HPE Premier Flex MPO/MPO OM4 12 fiber 5m | Q1H65A |
| HPE Premier Flex MPO/MPO OM4 12 fiber 15m | Q1H66A |
| HPE Premier Flex MPO/MPO OM4 12 fiber 30m | Q1H67A |
| 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 |

Configuration Information

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| 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 MPO/MPO Multi-mode OM4 12 fiber 10m Cable | QK729A |
| HPE Premier Flex MPO/MPO Multi-mode OM4 8 fiber 50m Cable | QK731A |
| HPE Premier Flex MPO/MPO OM4 100m (12ft) Cable | H6Z30A |
| 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

| | HPE StoreFabric SN2010M 25GbE 18SFP28 4QSFP28 Half Width Switch |
|------------------------------------|---|
| Description | Ideal ½ width ToR switch supporting 1/10/25/40/50/100 GbE connectivity |
| Ports Speeds | 18 x 1/10/25 GbE + 4 x 40/100 GbE |
| Minimum Configuration | 18 + 4 ports |
| Size | 1U (½ 19" wide) |
| Switching Capacity | 1.7Tb/s |
| Processing Capacity | 2.52Bpps |
| Forwarding Technology | Cut Through |
| Latency | 300ns |
| Typical Power Consumption | 57W |
| Supported Operating Systems | ONYX |
| System Memory | 8GB |
| SSD Memory | 16GB |
| Packet Buffer | 16MB |
| 100/100 Mgmt Ports | 1 RJ45 |
| Serial Ports | 1 RJ45 |
| USB Ports | 1 Mini USB |
| Reversible Airflow | No |
| Power Supplies | 2 (1+1 redundant); not replaceable |
| Fans | 2 fans not replaceable |
| Power Supplies | Frequency: 50-60Hz Input range: 100-264 AC Input current 4.5-2.9A |
| Size | 1.72" x 7.87" x 20"(43.9mm x 200mm x 508mm) |
| Weight | 4.53kg (10Lb) |

Technical Specifications

Environment

| | |
|--|---------------------------|
| Operating temperature | 0°C to 40°C |
| Operating relative humidity (operational) | 10% to 85%, noncondensing |

Electrical characteristics

| | |
|------------------|------------|
| Frequency | 50/60 Hz |
| Voltage | 90-264 VAC |

Safety

EN 60950-1:2006+A11:2009+A1:2010+A12:2011+AC:2011+A2:2013, IEC 60950-1:2005 (Second Edition) + Am 1:2009 + Am 2:2013 and EN 60950-1:2006 + A11:2009 + A1:2010 + A12:2011 + AC:2011 + A2:2013, UL 60950-1:2007, CAN/CSA C22.2 60950-1:2007+A1:2011+A2:2014, IEC 60950-1 Ed. 2.0 :2005 + Am 1:2009+ Am 2:2013, LV CU TR 004/2011 and EMC CU TR 020/2011 Technical Regulation, DSTU EN 55032:2014 and DSTU EN 60950-1:2014

EMC

EN 55032:2012 class A, EN 55024:2010, EN 61000-3-2:2014, EN 61000-3-3: 2013, EN 61000-4-2: 2002, EN 61000-4-3: 2006+A1(08)+A2(10), EN 61000-4-4: 2004+A1(10), EN 61000-4-5: 2006, EN 61000-4-6: 2014
EN 61000-4-11:2004, FCC 47 CFR, Part 15:2017, Sub-part B, Class A, ICES-003, Issue 6: 2016 Class A, VCCI V-3/2015.04 Class A, AZ/NZS CISPR 32:2015 Class A, KN22:2009 class A/ KN24:2009

| | |
|------------------|---------------------------|
| Acoustic: | High-speed fan: 73.7dB(A) |
|------------------|---------------------------|

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|--|-----|
| Typical power with passive cables (ATIS): | 57W |
|--|-----|

Summary of Changes

| Date | Version History | Action | Description of Change |
|------------|-----------------|---------|-----------------------|
| 4-Jun-2018 | Version 1 | Created | All content created. |



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