

### Overview

#### HPE M-series SN2410M 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, zero packet loss network becomes paramount. The HPE SN2410M switches offer a 100GbE-based network platform capable of delivering unbelievable networking speed and agility to keep pace with the most intense workloads small- to large-scale enterprises can produce. With port speeds spanning from 1Gb/s to 100 Gb/s and a switching capacity of 4Tb/s. All this enables the M-Series to deliver a landmark 2.97Bpps processing capacity and an uncompromising 300ns cut-through latency in a compact 1RU form factor. The M-series are perfect for Top-Of-Rack (TOR) deployments and optimized for virtualized environments, hyperconverged infrastructure, and storage deployments.

With HPE M-Series Ethernet switches gives 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**— utilize 1/10/40Gbps Ethernet connectivity for existing workloads and enhance connectivity utilizing built-in 25/50/100Gbps capabilities to respond quickly to business needs and to stay on the leading edge of Ethernet switching technology.

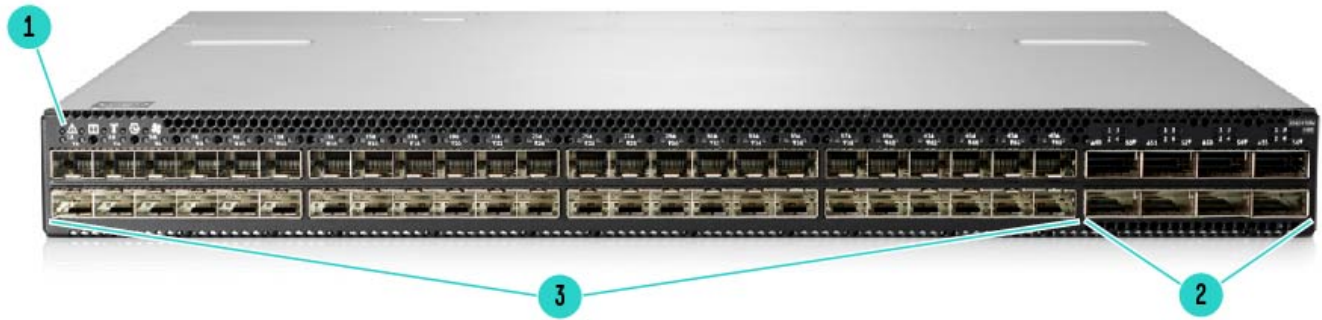
The HPE M-Series SN2410M Ethernet switch is a top-of-rack data center switch offering two form factor configurations: a 1U 48-port 1/10/25GbE SFP28 with 8-port 100GbE QSFP28, and a 1U 48-port 10GbE SFP+ with 8-port 100GbE QSFP28. Each switch offers cost-effective options with entry at 24-ports and a pay as you grow with a software license. With unique break-out cables that can fan out individual QSFP28 switch ports to multiple device ports to increase density; Odd numbered QSFP28 ports breakout into four 10 or 25GbE ports. An odd numbered QSFP28 port configured in x4 breakout un-maps the use of adjacent even numbered QSFP28 port.

#### SN2410M is available in following models

- HPE SN2410M 25GbE 48SFP28 8QSFP28 Switch
- HPE SN2410M 25GbE 24SFP28 4QSFP28 Switch
- HPE SN2410bM 10GbE 48SFP+ 8QSFP28 Switch
- HPE SN2410bM 10GbE 24SFP+ 4QSFP28 Switch
- HPE SN2410M 25GbE 24p Upgrade E-LTU
- HPE SN2410bM 10GbE 24p Upgrade E-LTU

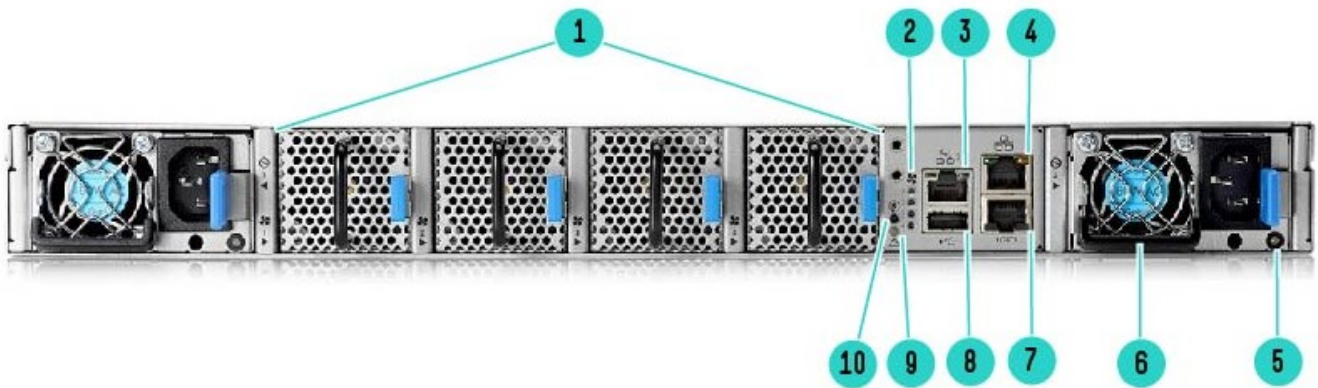
SN2410M and SN2410bM half ports activated models offer cost-effective options for entry and capability for doubling active ports with a license, so you can pay for ports as growth requires.

## Overview



**HPE M-Series SN2410M & SN2410bM Front View**

- 1. System Status LEDs
- 2. QSFP+/QSFP28 Ports (1-8)
- 3. SFP+/SFP28 Ports (1-48)



**M-Series SN2410M & SN2410bM Rear View**

- 1. Fans (4 Units)
- 2. Fans Status LEDs
- 3. MGMT0 Port
- 4. MGMT1 Port
- 5. Power Supply
- 6. Power Supply
- 7. Serial Console Port (115200 BAUD rate)
- 8. USB Port
- 9. System Health LED
- 10. Reset button



## Overview

### Models

#### Description

#### SKU

#### HPE M-Series SN2410M Ethernet Switch Models

HPE SN2410M 25GbE 48SFP28 8QSFP28 Switch	Q2F22A
HPE SN2410M 25GbE 48SFP28 8QSFP28 Power to Connector Airflow TAA-compliant Switch	R0P73A
HPE SN2410M 25GbE 48SFP28 8QSFP28 Connector to Power Airflow TAA-compliant Switch	R0P74A
HPE SN2410M 25GbE 48SFP28 8QSFP28 ONIE Power to Connector Airflow Switch	R0P81A
HPE SN2410M 25GbE 48SFP28 8QSFP28 ONIE Power to Connector Airflow DC Switch	R3B07A
HPE SN2410M 25GbE 48SFP28 8QSFP28 ONIE Connector to Power Airflow DC Switch	R3B08A
HPE SN2410M 25GbE 48SFP28 8QSFP28 ONIE Connector to Power Airflow Switch	R3B09A
HPE SN2410M 25GbE 24SFP28 4QSFP28 Switch	Q6M27A
HPE SN2410bM 10GbE 48SFP+ 8QSFP28 Switch	Q6M28A
HPE SN2410bM 10GbE 24SFP+ 4QSFP28 Switch	Q6M29A
HPE SN2410M 25GbE 24-port Upgrade E-LTU	Q6J40AAE
HPE SN2410BM 10GbE 24-port Upgrade E-LTU	Q6J41AAE

**Notes:** A fixed Rack Mount kit is included in the box with each switch model.



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## Standard Features

### Key Features and Benefits

- HPE M-Series SN2410M offers cost-effective options with entry at 24-ports and a pay as you grow with a software license. It offers more flexibility to add capacity when needed for diverse deployment and tighter budgets.
- SN2410M switches are ideal for modern server and storage networks, supporting two form factor configurations: a 1U 48-port 1/10/25GbE SFP28 with 8-port 100GbE QSFP28, or a 1U 48-port 10GbE SFP+ with 8-port 100GbE QSFP28 delivering predictable performance and zero packet loss at line-rate across each port and packet size.
- SN2410M with unique break-out cables that can fan out individual QSFP28 switch ports to multiple device ports to increase density. QSFP28 ports breakout into four 10 or 25GbE ports.
- Optimized port configuration enables high-speed rack connectivity to the server at 10GbE or 25GbE speeds with 100GbE uplink ports that allow for a variety of blocking ratios that suit specific application requirements.
- SN2410M provides ultra-low latency of under 300ns port-to-port. This is advantageous for flash storage which moved the latency bottleneck from storage media to the network, as well as for the bursty nature of today's software-defined and cloud-driven data center traffic.
- Provides wire-rate performance with zero packet loss across all frame sizes, avoiding any negative impact on applications that could occur with frame loss as unexpected packet loss is unacceptable in modern data centers, especially within a storage network.
- Capable of forwarding 100% capacity wire rate performance with zero packet loss across all ports while transferring data across both Layer 2 and Layer 3 networks.
- Designed to use less electric power than competing switches, with less than 6 watts per port, providing one of the industry's lowest power draws, producing less heat than competing products, and allowing reduced OpEx cost.
- Provides enough internal bandwidth to carry all ports at line-rate concurrently. This allows the switches to avoid head-of-line blocking which can reduce a switches overall performance and throughput.

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### M-Series SN2410M

- SN2410M supports two configurations:
  - 1U 48-port 10/25GbE SFP28 with 8-port 100GbE QSFP28
  - 1U 48-port 10GbE SFP+ with 8-port 100GbE QSFP28
- Offers cost-effective options with entry at 24-ports and a pay as you grow with a software license.
- Extremely Flexible. QSFP28 ports breakout into four 10 or 25GbE ports.
- Ultra-low latency with true cut through performance, Zero packet loss performance with DCBX, PFC, and ECN support

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### 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 - WebUI that accepts inputs and provides outputs by generating webpages which can be viewed by the user using a web browser for configuration, monitoring, and troubleshooting.
  - 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
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## Standard Features

### System Management

#### Management Interface

Management interfaces are used in order to provide access to switch management user interfaces (e.g. CLI, WebUI). HPE Switch Management supports out-of-band (OOB) dedicated interfaces (e.g. mgmt0, mgmt1) and in-band dedicated interfaces. In addition, HPE M-Series Switches feature a standard 115200 baud rate RJ45 serial port that provides access to the CLI.

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#### 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.

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#### 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.

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### Software Management

#### Configuration Management

Onyx's built-in automation infrastructure reduces operational expenses and time to service by minimizing manual operations and eliminating configuration and provisioning errors. Automation tools such as Ansible, SaltStack, ZTP and Puppet enable you to automate fabric configuration and large scale deployments.

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### Saving, Loading & restore to factory defaults of the Configuration Files

#### HPE Network Orchestrator

The HPE Network Orchestrator validates the integrity, interoperability and compliance of HPE storage, servers and network fabric infrastructures before or during deployment, eliminating human errors during any configurations update or adding new devices. The pre-upgrade check option verifies and reports what components in your SAN need an update to meet the specified version requirement, further assisting in keeping the SAN and fabric infrastructure in ideal health by making informed decisions with better supportability and predictability. The Single Point of Connectivity Knowledge (SPOCK) checks are done against the HPE SPOCK database. Checks are easy, with simple mouse-hover colored indicators for the components. Note: HPE Network Orchestrator for M-series requires NEO®, both optional applications are customer installable.

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#### Logging

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

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### End-to-end Fabric management with NEO®

NEO™ management platform extends management throughout the entire fabric, with end-to-end capabilities for both switches and NICs. Use NEO to enable even greater visibility into the complete data transport path, from the server, through the network fabric and to the server/client.

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#### Debugging

Support save sysdmp file collects configuration, status, counters, log files, What-Just-Happened, and WireShark traces for Ethernet modules to enable timely review of problems and facilitate service support. There are 31 per port packet counters and an additional 22 discard packet classification counters to help you identify why there are packet processing problems, should they occur.

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## Standard Features

### What Just Happened (WJH)

As an innovative network telemetry technology, 'What Just Happened' (WJH) monitors and alerts on data plane anomalies to reduce system downtime. With built-in capabilities to inspect packets across all ports at line-rate, multi-terabit speeds, WJH avoids time-consuming data collection and manual searches for network problems. In addition, a streaming WJH telemetry application, supported by NEO™ and other management applications, can be installed as a Docker container.

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### Link Diagnostic Per Port

Enables an insight into the physical layer components - see information such as a cable status (plugged/unplugged), speed mismatch, auto-negotiation failures, signal quality failures, link training failures, forward error code mismatch, etc.

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### Signal Degradation Monitoring

A system can monitor the bit error rate (BER) in order to ensure a quality of the link and take an automatic action to disable offending ports.

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### 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.

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### 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
  - USA Department of Defense certification – UC APL
  - Storm Control
  - Access Control Lists (ACLs L2-L4 & user defined)
  - 802.1X - Port Based Network Access Control
  - SSH server strict mode – NIST 800-181A
  - CoPP (IP filter)
  - Port isolation
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### Cryptographic (X.509, IPSec) and Encryption

- Configuring, generating and modifying x.509 certificates used in the system.
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### 802.1x Protocol

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

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### Network Management Interfaces SNMP, JSON & XML

#### Puppet Agent

Built-in agent for the open-source "Puppet" configuration change management system

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## Standard Features

### Additional Management & Automation Features

- Zero Touch Provisioning
- Ansible, SALT Stack
- FTP \ TFTP \ SCP
- AAA , RADIUS \ TACACS+ \ LDAP
- JSON & CLI , Enhanced Web UI
- SNMP v1,2,3
- In-band Management
- DHCP, SSHv2, Telnet
- SYSLOG
- Dual ONYX™ Software images
- Events history

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### Linux Docker Containers

Run your applications as a Linux docker image embedded in the switch flash:

- Full SDK access through the container
- Persistent container & shared storage.

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### 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

Rapid Spanning Tree Protocol (RSTP) provides for rapid recovery of connectivity following the failure of a bridge/bridge port or a LAN. The following are supported: BPDU Filter, BPDU Guard, Loop Guard, Root Guard, MSTP and RPVST



## Standard Features

### Virtual routing and forwarding functions (VRFs)

Virtual routing and forwarding (VRF) is a technology included in IP (Internet Protocol) network routers that allows multiple instances of a routing table to exist in a router and work simultaneously. This increases functionality by allowing network paths to be segmented without using multiple devices. Because traffic is automatically segregated, VRF also increases network security.. Currently, Onyx™ supports 64 VRF instances.

### 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

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## 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

#### Other QOS features:

- 802.3X Flow Control
- WRED, Fast ECN & PFC
- 802.1Qbb Priority Flow Control
- 802.1Qaz Enhanced Transmission Selection
- DCBX and Application TLV support
- Advanced QoS- qualification, Rewrite, Policers
- 802.1AB Station and Media Access Control Connectivity Discovery

Advanced and user-mode Shared buffer management

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## Port Mirroring

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

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## 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.

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## Standard Features

### 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. Simplified RoCEv2 switch configuration automation supported by just one command: `roce {lossy | semi-lossless | lossless}`.

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### 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.

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### 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.

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### 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

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### 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.

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.

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## 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).



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## Standard Features

### BFD Infrastructure

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

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### 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.

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### 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.

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### Multicast (IGMP and PIM)

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.

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### 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.

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### 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.

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### 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.

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## Standard Features

### Feature Summary

#### Layer 3 Feature Set

- 64 VRFs supported
- IPv4 & IPv6 Routing and Route maps:
- BGP4, MP-BGP, OSPFv2, route maps
- PIM-SM and PIM-SSM (PIM-SM over MLAG)
- User and management VRFs
- BFD (BGP, OSPF, static routes)
- VRRP, Multi Active Gateway Protocol (MAGP)
- DHCPv4/v6 Relay
- Router Port, int Vlan, NULL Interface for Routing
- ECMP, 64-way
- IGMPv2/v3 Snooping Querier
- Consistent/Resilient Hashing

#### Network Virtualization

- VXLAN EVPN
- VXLAN Hardware VTEP – L2 Gateway
- L2 stretch use case
- Integration with VMware NSX & OpenStack, etc
- Onyx™ certified NSX scale of 1000 VNIs

#### Quality of Service (QoS)

- 802.3X Flow Control
- WRED with Fast ECN
- 802.1Qbb Priority Flow Control
- 802.1Qaz ETS
- DCBX – Application TLV support
- Advanced QoS – Qualification, Rewrite, Policers – 802.1AB
- Simplified (one command) RoCE configuration

#### Security

- Storm control
- Access Control Lists (ACLs L2-L4 & user defined)
- 802.1X - Port Based Network Access Control
- Strict Security mode for DoD Apps & NIST 800 181A compliance
- Port Isolation

#### Synchronization

- NTP
- PTP IEEE-1588

#### Docker Container

- Full SDK access through the container
- Persistent container & shared storage
- Container-secured mode of work:
- Limited CPU/memory/SSD usage

#### Software Defined Network (SDN)

- OpenFlow 1.3
- Supported controllers: ODL, ONOS, FloodLight, RYU, etc.
- NAT
- True hybrid mode with programmable pipeline



## Standard Features

### Layer 2 Feature Set

- Multi Chassis LAG (MLAG), MLAG with STP support
- Jumbo Frames (9216 Bytes)
- IGMP V2/V3, Snooping, Querier
- VLAN 802.1Q (4K)
- 256K forwarding entries that can be flexibly shared across ACL, LPM routes, Host routes, MAC, ECMP and Tunnel applications
- Q-In-Q
- 802.1W Rapid Spanning Tree
- BPDU Filter, Root Guard
- Loop Guard, BPDU Guard
- 802.1s Multiple STP
- Rapid Per VLAN STP and PVRST
- 802.3ad Link Aggregation (LAG) & LACP
- 32 Ports/Channel
- 64 Groups Per System
- Port Isolation
- 802.1AB Link Layer Discovery Protocol (LLDP)
- Store & Forward / Cut-through switching modes
- Head of Queue Life Time Limit (HLL)
- 1/10/25/40/50/100GbE

### Monitoring & Telemetry

- High Resolution Streaming Telemetry
- What Just Happened (WHJ) Root Cause Analysis
- sFLOW
- Real Time queue depth histograms & thresholds
- Port mirroring (SPAN & ERSPAN)
- Enhanced Link & phy monitoring
- BER degradation monitoring
- User mode - simplified and advanced shared buffer configuration

### Management and Automation

- ZTP
- Ansible, Puppet, SaltStack
- FTP/TFTP/SCP
- AAA, RADIUS / TACACS+ / LDAP
- JASON & CLI, WEB UI
- SNMP v1/v2/v3
- In0band and OOB management
- DHCP, SSHv2, Telnet
- SYSLOG
- USB
- 10/100/1000 Mb/s Ethernet RJ45 mgmt port
- RJ45 Serial console mgmt port (115200 BAUD)
- Dual software images, each in separate flash partitions
- Events history
- Open Network Install Environment (ONIE switch models)



## Service and Support

### Warranty

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

**Notes:** The hardware warranty covers firmware. For extended hardware support and installation information, please see the “Services and Support” Section.

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### 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 HPE 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.

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### 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
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### 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>

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### 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.

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### 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.

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.

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## Service and Support

### **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.

HPE Proactive Care is available in 3, 4 and 5 year terms with a choice of response levels: Next Business day (NBD), 24x7 with a 4 hour response, and 24x7 with 6 hour call to repair (CTR). This service combines both reactive support when there is a problem with an enhanced call experience and start to finish case management with proactive reporting and advice.

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

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### **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. HPE Proactive Care Advanced is offered in 3, 4, and 5 year terms with a choice of response levels: Next Business day (NBD), 24x7 with a 4 hour response, and 24x7 with 6 hour call to repair (CTR).

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

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**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.

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

HPE Foundation Care helps when there is a problem and is available in 3, 4, and 5 year terms with a choice of response levels: Next Business day (NBD), 24x7 with a 4 hour response, and 24x7 with 6 hour call to repair (CTR). NOTE that Call-To-Repair Service connects you to HPE 24 hours a day, seven days a week for assistance on resolving issues -this includes our highest level commitment to repair hardware within six hours after opening your case and respond to software questions within two 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&cc=us&lc=en>

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## **Other related services from HPE Pointnext**

### **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 Installation and Start-up Service**

Provides for the hardware installation and startup of HPE branded M-series switches with ONYX™ OS, according to the product specifications. The HPE service delivery technician will 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>

### **HPE Hardware Installation**

Provides for the basic hardware installation of HPE branded M-series ONIE switches to assist you in bringing your new hardware into operation in a timely and professional manner.

### **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.



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## Service and Support

### HPE Education Services

Provides comprehensive training designed to expand the skills of your IT staff and keep them up to speed with the latest technologies.

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

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### Parts and Materials

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

The defective media retention service feature option applies only to Disk or eligible SSD/Flash Drives replaced by Hewlett Packard Enterprise due to malfunction.

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### 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>

The 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](#)

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

- Services for customers purchasing from HPE or an enterprise reseller are quoted using HPE order configuration tools.

Customers purchasing from a commercial reseller can find HPE Support Services at <https://ssc.hpe.com/portal/site/ssc/>

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## Configuration Information

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

Description	SKU
HPE SN2410M 25GbE 48SFP28 8QSFP28 Switch	Q2F22A
HPE SN2410M 25GbE 48SFP28 8QSFP28 Power to Connector Airflow TAA-compliant Switch <ul style="list-style-type: none"> <li>(ONYX™, P2C airflow, TAA-compliant, AC)</li> </ul>	R0P73A
HPE SN2410M 25GbE 48SFP28 8QSFP28 Connector to Power Airflow TAA-compliant Switch <ul style="list-style-type: none"> <li>(ONYX™, C2P airflow, TAA-compliant, AC)</li> </ul>	R0P74A
HPE SN2410M 25GbE 48SFP28 8QSFP28 ONIE Power to Connector Airflow Switch	R0P81A
HPE SN2410M 25GbE 48SFP28 8QSFP28 ONIE Power to Connector Airflow DC Switch	R3B07A
HPE SN2410M 25GbE 48SFP28 8QSFP28 ONIE Connector to Power Airflow DC Switch	R3B08A
HPE SN2410M 25GbE 48SFP28 8QSFP28 ONIE Connector to Power Airflow Switch	R3B09A
HPE SN2410M 25GbE 48SFP28 8QSFP28 Switch <ul style="list-style-type: none"> <li>2 x 460w Power Supply with Intake Fan</li> <li>4 x Intake Fan Tray</li> <li>1 x Fixed Rack Mount Kit</li> <li>2 x Power cord, 1.83m, C13-C14</li> <li>1 x Serial cable (DB9 to RJ45)</li> <li>2 x PSU CABEL RETAINER KIT</li> <li>1 x HPE Warranty and Installation instructions</li> <li>1x HPE Quick Start Guide</li> </ul>	Q2F22A
<b>Notes:</b> Requires optical transceivers listed below.	
HPE SN2410M 25GbE 24SFP28 4QSFP28 Switch <ul style="list-style-type: none"> <li>2 x 460w Power Supply with Intake Fan</li> <li>4 x Intake Fan Tray</li> <li>1 x Fixed Rack Mount Kit</li> <li>2 x Power cord, 1.83m, C13-C14</li> <li>1 x Serial cable (DB9 to RJ45)</li> <li>2 x PSU CABEL RETAINER KIT</li> <li>1 x HPE Warranty and Installation instructions</li> <li>1x HPE Quick Start Guide</li> </ul>	Q6M27A
<b>Notes:</b> Requires optical transceivers listed below.	
HPE SN2410bM 10GbE 48SFP+ 8QSFP28 Switch <ul style="list-style-type: none"> <li>2 x 460w Power Supply with Intake Fan</li> <li>4 x Intake Fan Tray</li> <li>1 x Fixed Rack Mount Kit</li> <li>2 x Power cord, 1.83m, C13-C14</li> <li>1 x Serial cable (DB9 to RJ45)</li> <li>2 x PSU CABEL RETAINER KIT</li> <li>1 x HPE Warranty and Installation instructions</li> <li>1x HPE Quick Start Guide</li> </ul>	Q6M28A
<b>Notes:</b> Requires optical transceivers listed below.	





## Configuration Information

HPE SN2410bM 10GbE 24SFP+ 4QSFP28 Switch

Q6M29A

- 2 x 460w Power Supply with Intake Fan
- 4 x Intake Fan Tray
- 1 x Fixed Rack Mount Kit
- 2 x Power cord, 1.83m, C13-C14
- 1 x Serial cable (DB9 to RJ45)
- 2 x PSU CABEL RETAINER KIT
- 1 x HPE Warranty and Installation instructions
- 1x HPE Quick Start Guide

**Notes:** Requires optical transceivers listed below.

HPE SN2410M 25GbE 24-port Upgrade E-LTU

Q6J40AAE

HPE SN2410M 25GbE 24SFP28 4QSFP28 Switch

Q6M27A

HPE SN2410BM 10GbE 24-port Upgrade E-LTU

Q6J41AAE

HPE SN2410bM 10GbE 24SFP+ 4QSFP28 Switch

Q6M29A

**Notes:**

- For 24 SFP port/4 QSFP28 port SN2410M and SN2410bM switch models, upgrade licenses (Q6J40AAE & Q6J41AAE) allow activation of the additional 24 SFP ports and 4 QSFP28 ports with Q6M27A & Q6M29A respectively.
- For M-series SN2410M ONIE SKUs, refer to the Transceivers & Cables supported by the NOS used.
- An odd numbered QSFP28 port configured in x4 breakout un-maps use of the adjacent even numbered QSFP28 port.

## Step 2 - Options

### Transceivers – for M-series SN2410M ONYX™ switches

**Notes:** Refer to HPE M-series **SPOCK** Connectivity Stream for latest M-series ONYX™ interconnect support matrix

Note #	Description	SKU
13	HPE 25Gb SFP28 Short Wave 1-pack Pull Tab Optical Transceiver	Q2P64A
13	HPE 25Gb SFP28 Short Wave Extended Temperature 1-pack Pull Tab Optical Transceiver	Q2P64B
	HPE M-series 10GbE SFP+ SR MM 300m Transceiver	Q6M30A
	Aruba AP-324 802.11n/ac 4x4:4 MU-MIMO Dual Radio Antenna Connectors AP	JW184A
	HPE 10Gb SFP+ Short Wave 1-pack Pull Tab Optical Transceiver	Q2P65A
	HPE M-series 100GbE QSFP28 SR4 100m Transceiver	Q2F19A
	HPE M-series 100GbE QSFP28 1310nm PSM4 500m Transceiver	Q8J73A
	Mellanox MMA1L10-CR 100Gb LR4 10km SMF LC-LC 1310nm	R4G20A
	HPE M-series 40GbE QSFP28 SR4 100m Transceiver	Q7F11A
10	HPE 100Gb QSFP28 LC SWDM4 Multi-mode 100m Transceiver	R0R40A
3, 6, 11, 12	HPE 10GBASE-T SFP+ RJ45 30m XCVR	R0R41A
3, 6, 12	HPE 10GBASE-T SFP+ RJ45 300m 1-pack Transceiver.	R0R41B
3, 6, 13	HPE 25Gb SFP28 SR 30m Transceiver	R0R42A
	HPE BladeSystem c-Class 10Gb SFP+ SR Transceiver	455883-B21
	HPE X110 100M SFP LC LX Transceiver	JD120B
	HPE X120 1G SFP LC SX Transceiver	JD118B
	HPE X120 1G SFP LC LX Transceiver	JD119B
	HPE X120 1G SFP RJ45 T Transceiver	JD089B
7	HPE BladeSystem CClass Virtual Connect 1G SFP RJ45 Transceiver	453154-B21
8	HPE 7.6m/25ft CAT5 RJ45 M/M Ethernet C/O Cable	C7539A

## Configuration Information

Note #	Description	SKU
	HPE X130 10G SFP+ LC SR Transceiver	JD092B
	HPE X130 10G SFP+ LC LR Transceiver	JD094B
	Aruba 10G SFP+ LC LR 10km SMF Transceiver	J9151E
	HPE X130 10G SFP+ LC ER 40km Transceiver	JG234A
1	HPE X130 10G SFP+ LC LH 80km Transceiver	JG915A
	HPE X140 40G QSFP+ MPO MM 850nm CSR4 300m Transceiver	JG709A
	HPE X140 40G QSFP+ LC LR4 SM 10km 1310nm Transceiver	JG661A
	HPE BladeSystem c-Class 40Gb QSFP+ MPO SR4 100m Transceiver	720187-B21
	HPE X140 40G QSFP+ LC BiDi 100m MM Transceiver	JL251A
	HPE 40Gb QSFP+ Bidirectional Transceiver	841716-B21
	HPE X140 40G QSFP+ LC LR4L 2km SM Transceiver	JL286A
3, 13	Aruba 25G SFP28 LC LR 10km SMF Transceiver	JL486A
3, 13	HPE X190 25G SFP28 LC SR 100m MM Transceiver	JL293A
3, 13	HPE 25Gb SFP28 Short Wave 1-pack Pull Tab Optical Transceiver	Q2P64A
3, 13	HPE 25Gb SFP28 Short Wave Extended Temperature 1-pack Pull Tab Optical Transceiver	Q2P64B
	HPE M-series 100GbE QSFP28 1310nm PSM4 500m Transceiver	Q8J73A
	HPE X130 10G SFP+ LC SR Transceiver	JD092B
	HPE X140 40G QSFP+ MPO SR4 Transceiver	JG325B
3, 13	HPE 25Gb SFP28 SR 100m Transceiver	845398-B21
	HPE M-series 10GbE SFP+ SR MM 300m Transceiver	Q6M30A
	HPE M-series 40GbE QSFP28 SR4 100m Transceiver	Q7F11A
	HPE M-series 100GbE QSFP28 SR4 100m Transceiver	Q2F19A
3	HPE QSFP28 to SFP28 Adapter	845970-B21
	HPE X150 100G QSFP28 LC LR4 10km SM Transceiver	JL275A
	HPE X150 100G QSFP28 CWDM4 2km SM Transceiver	JH673A
10	HPE X150 100G QSFP28 LC SWDM4 100m MM Transceiver	JH419A
9	HPE 100Gb QSFP28 Bidirectional Transceiver	845972-B21
9	HPE 100GB QSFP28 BIDIRECTIONAL XCVR	855817-B21
	HPE 25Gb SFP28 SR 30m Transceiver	ROR42A

### Direct Attached Cables (DAC)

4	HPE BladeSystem c-Class 40G QSFP+ to 4x10G SFP+ 3m Direct Attach Copper Splitter Cable	721064-B21
5	HPE FlexNetwork X240 10G SFP+ to SFP+ 0.65m Direct Attach Copper Cable	JD095C
5	HPE FlexNetwork X240 10G SFP+ to SFP+ 1.2m Direct Attach Copper Cable	JD096C
5	HPE FlexNetwork X240 10G SFP+ to SFP+ 3m Direct Attach Copper Cable	JD097C
5	HPE FlexNetwork X240 10G SFP+ to SFP+ 5m Direct Attach Copper Cable	JG081C
	HPE C-series 3M Passive Copper SFP+ Cable	K2Q21A
	HPE C-series 5M Passive Copper SFP+ Cable	K2Q22A
5	HPE FlexNetwork X240 10G SFP+ SFP+ 7m Direct Attach Copper Cable	JC784C
5	Aruba 10G SFP+ to SFP+ 1m Direct Attach Copper Cable	J9281D
5	Aruba 10G SFP+ to SFP+ 3m Direct Attach Copper Cable	J9283D
5	Aruba 10G SFP+ to SFP+ 7m Direct Attach Copper Cable	J9285D
5	Aruba 25G SFP28 to SFP28 0.65m Direct Attach Cable	JL487A

## Configuration Information

	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 BladeSystem c-Class 40G QSFP+ to QSFP+ 3m Direct Attach Copper Cable	720199-B21
	HPE BladeSystem c-Class 40G QSFP+ to QSFP+ 5m Direct Attach Copper Cable	720202-B21
5	HPE BladeSystem c-Class 10GbE SFP+ to SFP+ 3m Direct Attach Copper Cable	487655-B21
5	HPE BladeSystem c-Class 10GbE SFP+ to SFP+ 5m Direct Attach Copper Cable	537963-B21
	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 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
4	HPE 100Gb QSFP28 to 4x25Gb SFP28 3m Direct Attach Copper Cable	845416-B21
	HPE 100Gb QSFP28 to QSFP28 0.5m Direct Attach Copper Cable	R1N34A
	Aruba 100G QSFP28 to QSFP28 5m Direct Attach Copper Cable	ROZ26A
5, 13	HPE 25Gb SFP28 to SFP28 3m Direct Attach Copper Cable	844477-B21
5, 13	HPE M-series 25Gb SFP28 to SFP28 0.5m Direct Attach Copper Cable	R4G18A
5, 13	HPE M-series 25Gb SFP28 to SFP28 1m Direct Attach Copper Cable	R4G19A
5, 13	HPE 25Gb SFP28 to SFP28 5m Direct Attach Copper Cable	844480-B21
	HPE 100Gb QSFP28 to QSFP28 5m Direct Attach Copper Cable	845408-B21
4, 13	HPE 100GbE QSFP28 to 4x25GbE SFP28 1m Direct Attach Copper Cable	Q9S72A
	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
	Aruba 100G QSFP28 to QSFP28 1m Direct Attach Copper Cable	ROZ25A
	Aruba 100G QSFP28 to QSFP28 3m Direct Attach Copper Cable	JL307A
	HPE 100Gb QSFP28 to QSFP28 3m Direct Attach Copper Cable	845406-B21

### Active Optical Cable (AOC)

	HPE 40GbE QSFP+ to 4x10GbE SFP+ 5m Active Optical Cable	Q9S66A
13	HPE 25GbE SFP28 to SFP28 3m Smart Active Optical Cable	Q9S67A
13	HPE 25GbE SFP28 to SFP28 5m Smart Active Optical Cable	Q9S68A
13	HPE 25GbE SFP28 to SFP28 10m Smart Active Optical Cable	Q9S69A
13	HPE 25GbE SFP28 to SFP28 15m Smart Active Optical Cable	Q9S70A
	HPE 100GbE QSFP28 to QSFP28 5m Active Optical Cable	Q9S71A
	HPE BladeSystem c-Class QSFP+ to 4x10G SFP+ 15m Active Optical Cable	721076-B21
	HPE BladeSystem c-Class 40G QSFP+ to QSFP+ 15m Active Optical Cable	720211-B21



## Configuration Information

Note #	Description	SKU
	HPE 100Gb QSFP28 to QSFP28 7m Active Optical Cable	845410-B21
	HPE 100Gb QSFP28 to QSFP28 15m Active Optical Cable	845414-B21
	HPE QSFP28 to 4x25Gb SFP28 7m Active Optical Cable	845420-B21
	HPE QSFP28 to 4x25Gb SFP28 15m Active Optical Cable	845424-B21
13	HPE 25Gb SFP28 to SFP28 7m Active Optical Cable	844483-B21
13	HPE 25Gb SFP28 to SFP28 15m Active Optical Cable	845396-B21

### Configuration Rules and Notes

#### Notes:

- 1: JG915A - Storage connectivity support for this transceiver is limited to 40Km
- 2: QSA (QSFP+ to SFP+) adapter (655874-B21) is being phased out of the M-series support. Use HPE QSA28 (QSFP28 to SFP28) adapter (845970-B21) that is compatible with all M-series switches to convert a QSFP+/QSFP28 slot to a single SFP+/SFP28 slot for 1G to 25G operation.
- 3: HPE QSA28 (QSFP28 to SFP28) adapter (845970-B21) is compatible with all M-series switches and is required with this transceiver to convert a QSFP28 slot to a single SFP28 or SFP+ slot for 1G, 10G, or 25G operation with this switch model.
- 4: QSFP (+ or 28) cable end is supported in SN2010M. The SFP (+ or 28) end is not supported in the SN2010M
- 5: The SN2010M 25G DAC connectivity to another M-series switch or 3rd party switch is limited to a 0.5m DAC cable. End device connectivity may use 1m or a 3m (26 gauge) 25G DAC. 10G DAC up to 5m is supported between SN2010M switches.
- 6: This HPE transceiver is compatible and supported for use in the SFP28 slots with this M-series switch model and is not restricted to use only with a QSA28 in QSFP28 slots.
- 7: This HPE transceiver is compatible and supported for use in the SFP28 slots and also the QSFP28 slots with this M-series switch model with the QSA28 (QSFP28 to SFP28) adapter (845970-B21).
- 8: This RJ45 crossover cable is compatible and supported for use when directly connecting the two M-series switch MGMT ports. When configuring MLAG and also utilizing in-band management, the MGMT0 ports of the two switches should be connected.
- 9: The interoperable 845972-B21 and 855817-B21 HPE 100Gb QSFP28 Bidirectional XCVRs do not interoperate with the JH419A and ROR40A transceivers.
- 10: 100Gbe SWDM4 LC transceivers JH419A and ROR40A are interoperable.
- 11: 10Gbase-T SFP+ RJ45 transceiver supports maximum length 30M CAT6a cable and due to power density is limited to 6 transceivers for each group of 8 SFP28 slots. For example, SFP28 slots 17 to 22 of the SN2410M and SN2410bM can be populated with the ROR41A and slots 23 and 24 shall not be populated with ROR41A or any other transceiver, i.e., slots 23 and 24 shall not be used and instead be disabled. Per switch support is limited to 32 ROR41A transceivers in the SN2410M and SN2410bM switches
- 12: ONYX-3.8.2008 and later revisions are required for support of ROR41A and ROR41B transceivers in the SN2410M and SN2410bM switches.
- 13: SN2410bM models support 1/10GbE ports and cannot be upgraded for 25GbE support. SN2410M models support 1/10/25GbE ports. SN2410bM and SN2410M QSFP28 ports support breakout to 4x 1 or 10 or 25GbE ports.

## Configuration Information

### Supported Optical Cables for all M-series switch models

Description	SKU
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 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 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
HPE Premier Flex MPO/MPO OM4 100m (12ft) Cable	H6Z30A
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/MPO Multi-mode OM4 12 Fiber 1m Cable	Q1H63A
HPE Premier Flex MPO/MPO Multi-mode OM4 12 Fiber 2m Cable	Q1H64A
HPE Premier Flex MPO/MPO Multi-mode OM4 12 Fiber 5m Cable	Q1H65A
HPE Premier Flex MPO/MPO Multi-mode OM4 12 Fiber 15m Cable	Q1H66A
HPE Premier Flex MPO/MPO Multi-mode OM4 12 Fiber 30m Cable	Q1H67A
HPE Premier Flex MPO to 4xLC 30m Cbl	Q1H68A
HPE Premier Flex MPO to 4 x Lucent Connector 50m Cable	Q1H69A
HPE 5m Single-Mode LC/LC Fibre Channel Cable	AK346A

## Technical Specifications

### Family Information

	HPE SN2010M	HPE SN2100M	HPE SN2410bM	HPE SN2410M	HPE SN2700M
<b>Description</b>	Ideal ½ width ToR 1/10/25/40/50/100 GbE	Ideal ½ width ToR 10/25/40/50/100 GbE	1/10GbE ToR 40/50/100GbE	10/25GbE ToR 40/50/100GbE	40/50/100GbE spine and aggregation ToR
<b>Ports Speeds</b>	18 x 1/10/25GbE + 4x40/100GbE	16x40/100GbE 64x10/25GbE	48x10GbE + 8x40/100GbE	48x10/25GbE + 8x40/100GbE	32x40/100GbE 64x10/25GbE
<b>Minimum Configuration</b>	18 + 4 Ports	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
<b>Size</b>	1U ( ½ 19" wide)	1U ( ½ 19" wide)	1U	1U	1U
<b>Switching Capacity</b>	1.7Tb/s	3.2Tb/s	2.56Tb/s	4Tb/s	6.4Tb/s
<b>Processing Capacity</b>	1.26Bpps	2.38Bpps	1.93Bpps	2.97Bpps	4.76Bpps
<b>Forwarding Technology</b>	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
<b>Latency</b>	300ns	300ns	300ns	300ns	300ns
<b>Typical Power Consumption</b>	57W	94W	165W	165W	150W
<b>Energy Efficiency</b>	full load: 91.3% @ 115Vac/60Hz , 92.6% @ 230Vac/50Hz	full load: 91.3% @ 115Vac/60Hz , 92.6% @ 230Vac/50Hz	80 Plus Gold	80 Plus Gold	80 Plus Gold
<b>Supported Operating Systems**</b>	ONYX™ & ONIE	ONYX™ & ONIE	ONYX™	ONYX™ & ONIE	ONYX™ & ONIE
<b>System Memory</b>	8GB	8GB	8GB	8GB	8GB
<b>SSD Memory</b>	16GB	16GB	32GB	32GB	32GB
<b>Packet Buffer</b>	16MB	16MB	16MB	16MB	16MB
<b>1GbE Mgmt Ports</b>	1 RJ45	1 RJ45	2 RJ45	2 RJ45	2 RJ45
<b>Serial Ports</b>	1 RJ45	1 RJ45	1 RJ45	1 RJ45	1 RJ45
<b>USB Ports</b>	1 Mini USB	1 Mini USB	1	1	1
<b>Airflow</b>	Power-to-Connector and Connector-to-Power airflow	Power-to-Connector and Connector-to-Power airflow	Power-to-Connector and Connector-to-Power airflow; hot swappable	Power-to-Connector and Connector-to-Power airflow; hot swappable	Power-to-Connector and Connector-to-Power airflow; hot swappable
<b>Power Supplies</b>	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



## Technical Specifications

	HPE SN2010M	HPE SN2100M	HPE SN2410bM	HPE SN2410M	HPE SN2700M
<b>Fans</b>	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
<b>Power Supplies</b>	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
<b>Size</b>	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)
<b>Weight</b>	4.53kg (10Lb)	4.53kg (10Lb)	8.52kg (18.8Lb)	8.52kg (18.8Lb)	11.1kg (24.5Lb)

**Notes:** \*\*There are separate M-Series SKUs for ONIE and ONYX™ switch models.

### HPE M-Series SN2410 Switch Specifications

	HPE SN2410bM 10GbE 48SFP+ 8QSFP28 Switch	HPE SN2410bM 10GbE 24SFP+ 4QSFP28 Switch	HPE SN2410M 25GbE 48SFP28 8QSFP28 Switch	HPE SN2410M 25GbE 24SFP28 4QSFP28 Switch
	HPE SN2410bM	HPE SN2410bM	HPE SN2410M	HPE SN2410M
<b>Description</b>	10GbE ToR switch with 100GbE uplinks	10GbE ToR switch with 100GbE uplinks	25GbE ToR switch with 100GbE uplinks	25GbE ToR switch with 100GbE uplinks
<b>Ports Speeds</b>	<ul style="list-style-type: none"> <li>48x10GbE</li> <li>+ 8x100GbE</li> </ul>	<ul style="list-style-type: none"> <li>24x10GbE</li> <li>+ 4x100GbE</li> </ul>	<ul style="list-style-type: none"> <li>48x25GbE</li> <li>+ 8x100GbE</li> </ul>	<ul style="list-style-type: none"> <li>24x25GbE</li> <li>+ 4x100GbE</li> </ul>
<b>Minimum Configuration</b>	48x10GbE + 8x100GbE	24x10GbE + 4x100 GbE Ports – pay as you grow with upgrade license (Q6J41AAE) for 24 additional 10GbE ports option	48x25GbE + 8x100GbE	24x25 GbE + 4x100 GbE Ports - pay as you grow with upgrade license (Q6J40AAE) for 24 additional 25GbE ports option
<b>Size</b>	1U	1U	1U	1U
<b>Switching Capacity</b>	2.56Tb/s	2.56Tb/s	4Tb/s	4Tb/s
<b>Processing Capacity</b>	1.93Bpps	1.93Bpps	2.97Bpps	2.97Bpps
<b>Forwarding Technology</b>	Cut Through	Cut Through	Cut Through	Cut Through
<b>Latency</b>	300ns	300ns	300ns	300ns
<b>Typical Power Consumption</b>	165W	165W	165W	165W
<b>Supported Operating Systems</b>	ONYX™	ONYX™	ONYX™ & ONIE	ONYX™
<b>System Memory</b>	8GB	8GB	8GB	8GB
<b>SSD Memory</b>	32GB	32GB	32GB	32GB
<b>Packet Buffer</b>	16MB	16MB	16MB	16MB



## Technical Specifications

	<b>HPE SN2410bM 10GbE 48SFP+ 8QSFP28 Switch</b>	<b>HPE SN2410bM 10GbE 24SFP+ 4QSFP28 Switch</b>	<b>HPE SN2410M 25GbE 48SFP28 8QSFP28 Switch</b>	<b>HPE SN2410M 25GbE 24SFP28 4QSFP28 Switch</b>
	<b>HPE SN2410bM</b>	<b>HPE SN2410bM</b>	<b>HPE SN2410M</b>	<b>HPE SN2410M</b>
<b>1Gb Mgmt Ports</b>	2 RJ45	2 RJ45	2 RJ45	2 RJ45
<b>Serial Ports</b>	1 RJ45	1 RJ45	1 RJ45	1 RJ45
<b>USB Ports</b>	1	1	1	1
<b>Airflow</b>	Power-to-Connector and Connector-to-Power option; hot swappable	power-to-connector only option; hot swappable	Power-to-connector only; hot swappable	Power-to-connector only; hot swappable
<b>Power Supplies</b>	2 (1+1 redundant) hot-swappable	2 (1+1 redundant) hot-swappable	2 (1+1 redundant) hot-swappable	2 (1+1 redundant) hot-swappable
<b>Fans</b>	4 (N+1 redundant) hot-swappable	4 (N+1 redundant) hot-swappable	4 (N+1 redundant) hot-swappable	4 (N+1 redundant) hot-swappable

	<b>HPE SN2410M 10GbE 48SFP+ 8QSFP28 Switch</b>	<b>HPE SN2410M 10GbE 24SFP+ 4QSFP28 Switch</b>	<b>HPE SN2410bM 25GbE 48SFP28 8QSFP28 Switch</b>	<b>HPE SN2410bM 25GbE 24SFP28 4QSFP28 Switch</b>
<b>Power Supplies</b>	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
<b>Size</b>	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 17.24" x 17"(43.9mm x 438mm x 436mm)	1.72" x 17.24" x 17"(43.9mm x 438mm x 436mm)
<b>Weight</b>	8.52kg (18.8Lb)	8.52kg (18.8Lb)	8.52kg (18.8Lb)	8.52kg (18.8Lb)

## Environment

- **Operating temperature**  
0°C to 40°C
- **Non-operating temperature**  
-40°C to 70°C
- **Operating relative humidity (operational)**  
5% to 85% noncondensing
- **Operating Altitude** 0 - 3050m  
RoHS compliant

## 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





## Technical Specifications

### 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: : SN2410 – 70.9 dB(A)

### Typical power with passive cables (ATIS)

165W

### Protocols

#### Standards

- 802.1D Bridging and Spanning Tree
- 802.1p QOS
- 802.1Q VLAN Tagging
- 802.1w Rapid Spanning Tree
- 802.1s Multiple Spanning Tree Protocol
- 802.1AB Link Layer Discovery Protocol
- 802.1Qaz ETS
- 802.1Qbb PFC
- 802.3ad Link Aggregation with LACP
- 802.3ba
- 802.3x Flow Control
- 1000BASE-KX
- 802.3ae 10 Gigabit Ethernet

#### SNMP MIBs

- RFC 4001 INET-ADDRESS-MIB
- IANAifType-MIB
- RFC 2863 IF-MIB
- RFC 4318 RSTP-MIB
- LLDP-MIB 802.1AB-2005
- RFC 4363 Q-BRIDGE-MIB
- RFC 4188 BRIDGE-MIB
- RFC 4133 ENTITY-MIB
- RFC 3433 ENTITY-SENSOR-MIB
- RFC 4268 ENTITY-STATE-MIB
- RFC 2572 SNMP-MPD-MIB
- RFC 4293 IP-MIB
- RFC 4022 TCP-MIB
- RFC 4113 UDP-MIB



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## Technical Specifications

### SNMP MIBs

- RFC 4292 IP-FORWARD-MIB
  - RFC 2790 HOST-RESOURCES-MIB
  - RFC 1213
  - SNMPV2-CONF
  - RFC 2579 SNMPV2-TC MIB
  - RFC 3417 SNMPV2-TM MIB
  - RFC 3826 SNMP-USM-AES-MIB
  - Mellanox SMI MIB
  - Mellanox IF-VPI-MIB
  - Mellanox enhanced ENTITY-MIB
  - Mellanox Power-Cycle-MIB
  - Mellanox SW-Update-MIB
  - Mellanox Config-MIB
- 



## Summary of Changes

Date	Version History	Action	Description of Change
03-Aug-2020	Version 13	Changed	Overview, Standard Features and Configuration Information sections were updated
06-Jul-2020	Version 12	Changed	QuickSpecs layout was updated and Branding Refresh was applied.
16-Mar-2020	Version 11	Changed	Configuration Information and Technical Specifications sections were updated.
03-Feb-2020	Version 10	Changed	Overview, Service and Support, Family Information and Technical Specifications sections were updated.
07-Oct-2019	Version 9	Changed	Added ONIE SKUs and updated features and transceivers
05-Aug-2019	Version 8	Changed	Overview, Service and Support, Family Information and Technical Specifications sections were updated.
02-Apr-2019	Version 7	Changed	Family Information and Technical Specifications sections were updated.
07-Jan-2019	Version 6	Changed	Overview, Models, Service and Support, Family Information, Configuration Information and Technical Specifications sections were updated
15-Oct-2018	Version 5	Changed	Overview section was updated. SKUs descriptions were updated. Obsolete SKUs were removed from Configuration Information section. New SKUs were added in Configuration Information section.
02-Apr-2018	Version 4	Changed	SKU descriptions were updated. Obsolete SKUs were removed.
08-Jan-2018	Version 3	Changed	The support matrix was updated and few typos were fixed.
02-Oct-2017	Version 2	Changed	Fixed a typo on the main image.
25-Sep-2017	Version 1	New	New QuickSpecs



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