HPE StoreFabric SN2100M 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 M-Series SN2100M Ethernet 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 3.2Tb/s from 16 ports at 100GbE, the switch enable non-blocking throughput at wire-speed transfers-across all packet sizes. All this enables the SN2100M to deliver a landmark 4.76 Bpps 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.

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 25/50/100Gbps Ethernet to respond quickly to business needs and stay on the leading edge of technology.

The StoreFabric M-Series SN2100 switch provides a high density, side-by-side 100GbE switching solution which scales up to 128 ports with breakout cables in single Rack Unit (RU) for the growing demands of today's storage, database, and data center environments. The SN2100 carries a unique design to accommodate the highest rack performance. Its design allows side-by-side placement of two switches in a single, 1RU slot of a 19" rack, delivering high availably to the hosts. Available in 8 or 16 100GbE ports, the SN2100 carries a switching capacity of 3.2Tb/s with 4.76Bpps processing capacity when running 16 ports at 100GbE, and enables 6.4Tb/s and 9.52Bpps when two units are deployed side-by-side in a 1 RU space.

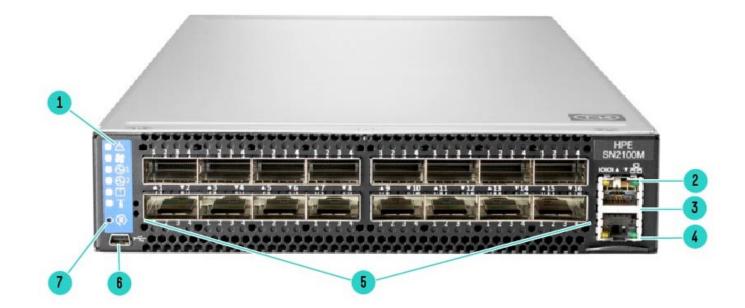
SN2100M is available in following models:

- HPE StoreFabric SN2100M 100GbE 16QSFP28
- Power-to-Connector and Connector-to-Power Airflow
- TAA SKU option
- ONIE SKU Option
- HPE StoreFabric SN2100M 100GbE 8QSFP28

SN2100M offers cost-effective options with entry at 8-ports and a pay as you grow with a software license. Offering more flexibility to customers to add capacity when needed.

HPE SN2100M 100GbE 8p Upgrade E-LTU





HPE StoreFabric M-Series SN2100M Front View

5.

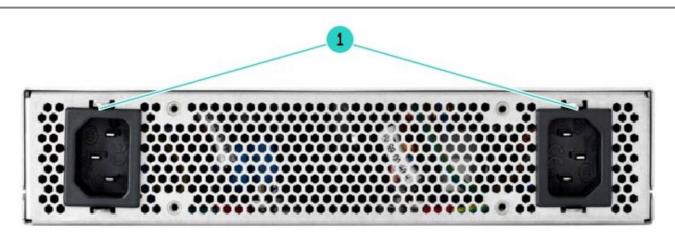
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7.

- 1. System Status LEDs
- 2. Console Port
- 3. MGMT Port

QSFP Ports (1-16)* Mini USB Port Reset Button

- 4. Inventory Information Pull-out Tab
- *Port Connectivity options, all ports support 1GbE 100GbE (100GbE QSFP28 can be configured as 100GbE or 40GbE) Each 40 GbE port can breakout (DAC/AOC) into four 10 GbE sub-ports.
- Each 100 GbE port can breakout (DAC/AOC) into four 25 GbE sub-ports



HPE StoreFabric M-Series SN2100M Rear View

1. Power Supply (non-replaceable)



Figure 3: StoreFabric M-Series SN2100M (Side View)



Figure 4: StoreFabric M-Series 2 x SN2100M (With Rack Installation Kit)

Key Features and Benefits

- HPE StoreFabric M-Series SN2100M offers cost-effective options with entry at 8-ports and a pay-as-you-grow software license. It offers more flexibility to add capacity when needed for diverse deployment and tighter budgets.
- SN2100M switches are ideal for modern server and storage networks, supporting up to 64 ports with breakout cables of 10 or 25, 32 ports of 50, or 16 ports of 40 or 100GbE. This can be doubled by deploying two units side-by-side in 1U, delivering predictable performance and zero packet loss at line-rate across each port and packet size.
- SN2100M can be deployed to support 1GbE and 10GbE ports and is designed to be able to evolve over time to support 25, 50, and 100GbE speeds. This helps future-proof your network architecture and allows for implementing significant speed upgrades to the architecture over time.
- SN2100M 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.
- It provides high port density in a single rack unit, allowing for higher capacity and efficiency, simplifying scale-out environments and saving on total cost of ownership. Unique breakout cables fan out individual switch ports to multiple device ports.
- With unique half-width form factors and port counts, these Ethernet switches allow for two HPE M-Series SN2100 units to be deployed side-by-side within 1U, allowing for increased density and making it the ideal top-of-rack switch.
- 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 concurrently at 100GbE speeds 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 100 Gb/s bandwidths concurrently. This allows the switches to avoid head-of-line blocking which can reduce a switches overall performance and throughput.

Models

HPE M-Series SN2100M Ethernet Switch Models

| HPE StoreFabric SN2100M 100GbE 16QSFP28 Half Width Switch | Q2F23A |
|--|------------------------------|
| HPE StoreFabric SN2100M 100GbE 16QSFP28 Power to Connector Airflow Half | ROP75A |
| HPE StoreFabric SN2100M 100GbE 16QSFP28 Connector to Power Airflow Half | ROP76A |
| HPE StoreFabric SN2100M 100GbE 16QSFP28 ONIE Power to Connector Airflow | ROP82A |
| HPE StoreFabric SN2100M 100GbE 8QSFP28 Half Width Switch | Q2F24A |
| HPE StoreFabric SN2100M 100GbE 8-port Upgrade E-LTU | Q2M94AAE |
| HPE StoreFabric SN2100M Rack Installation Kit | Q2F25A |
| NOTE: Only 1 Rack Mount is needed for 2x SN2100M switches within the same rack | |
| HPE StoreFabric SN2100M 100GbE 16QSFP28 Connector to Power Airflow Half HPE StoreFabric SN2100M 100GbE 16QSFP28 ONIE Power to Connector Airflow HPE StoreFabric SN2100M 100GbE 8QSFP28 Half Width Switch HPE StoreFabric SN2100M 100GbE 8-port Upgrade E-LTU HPE StoreFabric SN2100M Rack Installation Kit | ROP82A Q2F24A Q2M94AAE |

StoreFabric M-Series SN2100M

- Unique form factor of half-width allow for redundant units to be placed side-by-side in 1 rack unit with up to 128 ports with breakout cables, saving space and increasing density
- Half-width form factor with 8- or 16, 100GbE ports offers high-availability and scales up to 128 10GbE & 25GbE connections with breakout cables in 1U when deploying two units side-by-side.
- Extremely Flexible. Support for 1, 10, 25, 40, 50 and 100GbE speeds in a 1U enclosure.
- 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.

ΡΤΡ

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.

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

Standard Features

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

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.

Standard Features

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.

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 uses 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.

Standard Features

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)

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. For extended hardware support and installation information, please see the "Services and Support" Section.

Service and Support

Achieve maximum return from your IT investment

Get the expertise you need at every step of your IT journey with <u>HPE Pointnext services and support</u>. 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 <u>Advisory Services</u>, 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 <u>Professional</u> and <u>Operational Services</u> 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.

Consume IT on your terms

<u>HPE GreenLake Flex Capacity</u> 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

Connect your devices

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

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.

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.

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

<u>HPE Proactive Care Advanced</u> 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

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

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

HPE Foundation Care helps 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

Other related services from HPE Pointnext

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.

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.

http://h20195.www2.hp.com/V2/GetPDF.aspx/5981-9356EN.pdf

Service and Support

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

HPE Education Services 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.

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 HPE 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.

NOTE:*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 representative in your area can be found at <u>Contact HPE</u> 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 <u>https://ssc.hpe.com/portal/site/ssc/</u>

Family Information

| | HPE StoreFabric SN2010M | HPE StoreFabric SN2100M | HPE StoreFabric SN2410bM | HPE StoreFabric SN2410M | HPE StoreFabric SN2700M |
|---|----------------------------|---|---|--|--|
| Description Ideal ½ width ToR Ideal ½ width ToR 1/10/25/40/50/100 10/25/40/50/100GbE GbE | | 1/10GbE ToR10/25GbE ToRswitch withswitch with40/50/100GbE40/50/100GbEuplinksuplinks | | 40/50/100GbE spine Aggregation ToR | |
| Ports Speeds 18 x 1/10/25GBE 16x40/100GbE + 4 x 40/100GbE 32x50GbE 64x10/25GbE | | 48x10GbE + 8x40/100GbE | 48x10/25GbE + 8x40/100GbE | 32x40/100GbE 32x50GbE 64x10/25GbE | |
| Minimum Configuration | 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 |
| Size | 1U (½ 19" wide) | 1U (½ 19" wide) | 1U | 10 | 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 Cut Through and Cut Through | | 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 |
| Typical57WPowerConsumption | | 94W | 165W | 165W | 150W |
| Supported ONYX Operating Systems** | | ONYX & ONIE | ONYX | ONYX & ONIE | ONYX & ONIE |
| System 8GB Memory | | 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 |
| AirflowPower-to-connector and Connector to Power airflowPower-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 | |
| Power2 (1+1 redundant)2 (1+1 redundant)Suppliesnot replaceablenot replaceable | | 2 (1+1 redundant) hot-swappable | 2 (1+1 redundant) hot-swappable | 2 (1+1 redundant) hot-swappable | |

Family Information

| | HPE StoreFabric SN2010M | HPE StoreFabric SN2100M | HPE StoreFabric SN2410bM | HPE StoreFabric SN2410M | HPE StoreFabric SN2700M | |
|---|---|---|---|---|--|--|
| Fans | 2 fans not replaceable | 2 fans not 4 (N+1 redundant) replaceable 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 | |
| Size 1.72" x 7.87" x 1.72" x 7.87 20"(43.9mm x) 20"(43.9mm x) 20"(43.9mm x) | | 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) | |

Step 1 - Base Configuration

Select one Model :

| Model Description | Part Number |
|--|-------------|
| HPE StoreFabric SN2100M 100GbE 16QSFP28 Half Width Switch | Q2F23A |
| HPE StoreFabric SN2100M 100GbE 16QSFP28 Power to Connector Airflow TAA Compliant Half-width switch | R0P75A |
| HPE StoreFabric SN2100M 100GbE 16QSFP28 Connector to Power Airflow TAA Compliant Half-width switch | ROP76A |
| HPE StoreFabric SN2100M 100GbE 16QSFP28 ONIE Power to Connector Airflow | ROP82A |
| 100 GbE 16-port Switch with 16 ports active 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. | |
| HPE StoreFabric SN2100M 100GbE 8QSFP28 Half Width Switch | Q2F24A |
| 100 GbE 16-port Switch with 8 active 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. HPE StoreFabric SN2100M Rack Installation Kit | Q2F25A |
| Rack installation kit for StoreFabric SN2100M (Q2F23A & Q2F24A) NOTE: Only 1 Rack Mount is needed for 2x SN2100M switches within the same rack | QZFZSA |
| HPE StoreFabric SN2100M 100GbE 8-port Upgrade E-LTU | Q2M94AAE |
| HPE StoreFabric SN2100M 100GbE 8QSFP28 Half Width Switch | Q2F24A |
| NOTE : Upgrade licenses (Q2M94AAE) allow pay-as-you-grow model with additional 8-active-ports with Q2F24A. NOTE: For M-series SN2100M ONIE SKU (R0P82A) refer Transceivers & Cables supported by the NOS used. | |

Step 2 – Options

Refer to HPE M-series <u>SPOCK</u> Connectivity Stream for latest qualification matrix

Transceivers

Note # Model Description

| | • | |
|----|---|------------|
| | HPE M-series 100GbE QSFP28 SR4 100m Transceiver | Q2F19A |
| | HPE M-series 100GbE QSFP28 1310nm PSM4 500m Transceiver | Q8J73A |
| | HPE M-series 40GbE QSFP28 SR4 100m Transceiver | Q7F11A |
| | HPE M-series 100GbE QSFP28 SR4 100m Transceiver | Q2F19A |
| 10 | HPE 100Gb QSFP28 LC SWDM4 Multi-mode 100m | ROR40A |
| | HPE M-series 40GbE QSFP28 SR4 100m Transceiver | Q7F11A |
| 2 | HPE M-series 10GbE SFP+ SR MM 300m Transceiver | Q6M30A |
| 3 | HPE 10GBASE-T SFP+ RJ45 30m Transceiver | ROR41A |
| | HPE 25Gb SFP28 SR 30m Transceiver | ROR42A |
| 2 | HPE 10Gb SFP+ SR Transceiver | 455883-B21 |
| | | |

SKU

| 2 | HPE X110 100M SFP LC LX Transceiver | JD120B |
|----|---|------------|
| 2 | HPE X120 1Gb SFP LC SX Transceiver | JD118B |
| 2 | HPE X120 1Gb SFP LC LX Transceiver | JD119B |
| 2 | HPE X120 1Gb SFP RJ45 T Transceiver | JD089B |
| 2 | HPE 1000BaseT SFP RJ45 Transceiver | 453154-B21 |
| | CAT5e crossover cable RJ45 to RJ45 2.1m (7 ft) – 1GbE | C7539A |
| 2 | HPE X130 10Gb SFP+ LC SR Transceiver | JD092B |
| 2 | HPE X130 10Gb SFP+ LC LR Transceiver | JD094B |
| 2 | HPE X130 10Gb SFP+ LC SR Data Center Transceiver | JL437A |
| 2 | HPE X130 10Gb SFP+ LC LR Data Center Transceiver | JL439A |
| 2 | HPE X130 10Gb SFP+ LC ER 40km Transceiver | JG234A |
| 2 | HPE X130 10Gb SFP+ LC LH 80km Transceiver | JG915A |
| | HPE X140-LSWM4 QSFP+-40GBASE-CSR4 QSFP+ 40G | JG709A |
| | HPE X140 40Gb QSFP+ LC LR4 SM 10KM 1310nm | JG661A |
| | HPE BladeSystem c-Class 40Gb QSFP+ MPO SR4 100m | 720187-B21 |
| | HPE BladeSystem c-Class 40Gb QSFP+ MPO SR4 300m | 747698-B21 |
| | HPE BladeSystem c-Class 40Gb QSFP+ LC LR4 | 720190-B21 |
| | HPE X140 40G QSFP+ LC BiDi 100m MM Transceiver | JL251A |
| | HPE 40Gb QSFP+ Bidirectional Transceiver | 841716-B21 |
| 3 | HPE X190 25Gb SFP28 LC SR 100m MM Transceiver | JL293A |
| | HPE 25Gb SFP28 SW 1-pack Pull Tab XCVR | Q2P64A |
| | HPE 25Gb SFP28 SW 1-pack extended temperature Pull Tab XCVR | Q2P64B |
| | HPE M-series 100GbE QSFP28 PSM4 500m XCVR | Q8J73A |
| | HPE X130 10G SFP+ LC SR Transceiver | JD092B |
| | HPE X140-LSWM4 QSFP+-QSFP+ 40Gb SR4 850nm 100m | JG325B |
| | HPE 25GbE SFP28 SR 100m Transceiver | 845398-B21 |
| | HPE M-series 10GbE SFP+ SR 300m XCVR | Q6M30A |
| | HPE M-series 40GbE QSFP28 SR4 100m XCVR | Q7F11A |
| | HPE M-series 100GbE QSFP28 SR4 100m Transceiver | Q2F19A |
| 2 | Mellanox QSA QSFP/SFP+ Adapter | 655874-B21 |
| 3 | HPE QSA28 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 | JH419A |
| 9 | HPE 100Gb QSFP28 Bidirectional XCVR | 845972-B21 |
| 9 | HPE 100GB QSFP28 BIDIRECTIONAL XCVR | 855817-B21 |
| 3 | HPE Aruba 25G SFP28 LC LR 10km SMF Transceiver | 813874-B21 |
| 3 | HPE 10GBase-T SFP+ Transceiver | 813874-B21 |
| | | |

| Note # Direct Attach Copper Cables (DAC) | SKU |
|--|------------|
| HPE BladeSystem c-Class 40G QSFP+ to 4x10G SFP+ 3m Direct Attach Copper Splitter Cable | 721064-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 100GbE QSFP28 to 4x25GbE SFP28 1m Direct Attach Copper Cable | Q9S72A |
| 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+ 1m Direct | 720196-B21 |
| 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 |
| 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 |
| HPE 100GbE QSFP28 to 4x25GbE SFP28 1m Direct Attach Copper Cable | Q9S72A |
| HPE 100Gb QSFP28 to 4x25Gb SFP28 3m Direct Attach Copper Cable | 845416-B21 |
| 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 |
| HPE 100G QSFP28 to QSFP28 0.5m DAC | 845402-B21 |
| HPE 100G QSFP28 to QSFP28 1m DAC | 845404-B21 |
| HPE 100Gb QSFP28 to QSFP28 3m Direct Attach Copper Cable | 845406-B21 |
| Note # Active Optical Cable (AOC) | SKU |
| HPE 100GbE QSFP28 to QSFP28 5m Active Optical Cable | Q9S71A |
| HPE 40GbE QSFP+ to 4x10GbE SFP+ 5m Active Optical Cable | Q9S66A |
| 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 |
| HPE 100GbE QSFP28 to QSFP28 5m Active Optical Cable | Q9S71A |
| HPE 40G QSFP+ to 4x10G SFP+ 7m Active Optical | 721070-B21 |
| HPE 40G QSFP+ to 4x10G SFP+ 10m Active Optical | 721073-B21 |
| HPE QSFP+ to 4x10G SFP+ 15m Active Optical Cable | 721076-B21 |
| HPE 40G QSFP+ to QSFP+ 7m Active Optical Cable | 720205-B21 |
| HPE 40G QSFP+ to QSFP+ 10m Active Optical Cable | 720208-B21 |
| HPE 40G QSFP+ to QSFP+ 15m Active Optical Cable | 720211-B21 |
| HPE 100GbE QSFP28 to QSFP28 5m Active Optical Cable | Q9S71A |

| HPE 100Gb QSFP28 to QSFP28 7m Active Optical Cable | 845410-B21 |
|---|------------|
| HPE 100G QSFP28 to QSFP28 10m Active Optical Cable | 845412-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 |
| HPE 40GbE QSFP+ to 4x10GbE SFP+ 5m Active Optical Cable | Q9S66A |
| | |

NOTE 1: JG915A - Storage connectivity support for this transceiver is limited to 40Km

NOTE 2: QSA (QSFP+ to SFP+) adapter (655874-B21) is compatible with all M-series switches and is required to convert a QSFP+ slot to a single SFP+ slot for 1G or 10G operation

NOTE 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 25G or 10G operation with this switch model.

Use of 813874-B21 10Gbase-T transceiver or any 25G transceiver with QSA (QSFP+ to SFP+) adapter 655874-B21 is not supported. **NOTE** 4: QSFP (+ or 28) cable end is supported in SN2010M. The SFP (+ or 28) end is not supported in the SN2010M

NOTE 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) DAC.

NOTE 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.

NOTE 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) or the QSA (QSFP+ to SFP+) adapter (655874-B21).

NOTE 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.

NOTE 9: The interoperable 845972-B21 and 855817-B21 HPE 100Gb QSFP28 Bidirectional XCVRs do not interoperate with the JH419A and ROR40A transceivers.

NOTE 10: 100Gbe SWDM4 LC transceivers JH419A and R0R40A are interoperable.

NOTE 11: 10Gbase-T SFP+ RJ45 transceiver supports maximum length 30M CAT6a cable and due to power density is limited to transceivers for each group of 8 SFP28 slots. For example, SFP28 slots 17 to 22 of the SN2410M and SN2410bM can be populate 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 use and instead be disabled.

Supported Optical Cables for all M-series switch models Description

| Description | SKU |
|--|--------|
| HPE Premier Flex MPO/MPO Multi-mode OM4 12 Fiber 10m Cable | QK729A |
| HPE Premier Flex MPO/MPO Multi-mode OM4 12 Fiber 50m Cable | QK731A |
| HPE Premier Flex LC/LC OM4 2f 1m Multi-Mode Optical Cable | QK732A |
| HPE Premier Flex LC/LC OM4 2f 2m Multi-Mode Optical Cable | QK733A |
| HPE Premier Flex LC/LC OM4 2f 5m Multi-Mode Optical Cable | QK734A |
| HPE Premier Flex LC/LC OM4 2f 15m Multi-Mode Optical Cable | QK735A |
| HPE Premier Flex LC/LC OM4 2f 30m Multi-Mode Optical Cable | QK736A |
| HPE Premier Flex LC/LC OM4 2f 50m Multi-Mode Optical Cable | QK737A |
| HPE .5m OM3 LC/LC Multi-Mode Optical Cable | AJ833A |
| HPE 1m OM3 LC/LC Multi-Mode Optical Cable | AJ834A |
| HPE 2m OM3 LC/LC Multi-Mode Optical Cable | AJ835A |
| HPE 5m OM3 LC/LC Multi-Mode Optical Cable | AJ836A |
| HPE 15m OM3 LC/LC Multi-Mode Optical Cable | AJ837A |
| HPE 30m OM3 LC/LC Multi-Mode Optical Cable | AJ838A |
| HPE 50m OM3 LC/LC Multi-Mode Optical Cable | AJ839A |
| HPE Premier Flex MPO/MPO OM4 12 Fiber 100m Cable | H6Z30A |
| HPE Premier Flex Multi Fiber Push On to 4 x Lucent Connector 5m Cable | K2Q46A |
| HPE Premier Flex Multi Fiber Push On to 4 x Lucent Connector 15m Cable | K2Q47A |
| HPE Premier Flex MPO/MPO OM4 12f 1m Cable | Q1H63A |
| HPE Premier Flex MPO/MPO OM4 12f 2m Cable | Q1H64A |
| HPE Premier Flex MPO/MPO OM4 12f 5m Cable | Q1H65A |
| HPE Premier Flex MPO/MPO OM4 12f 15m Cable | Q1H66A |
| HPE Premier Flex MPO/MPO OM4 12f 30m Cable | Q1H67A |
| HPE Premier Flex MPO to 4xLC 30m Cable | Q1H68A |
| HPE Premier Flex MPO to 4xLC 50m Cable | Q1H69A |

Technical Specifications

| | HPE SN2100M 100GbE 16QSFP28 Switch | HPE SN2100M 100GbE 8QSFP28 Switch | | |
|--------------------------------|---|---|--|--|
| Description | Ideal 25/40/50/100GbE ½ width ToR switch | Ideal 25/40/50/100GbE ½ width ToR switch | | |
| Ports Speeds | 16x40/100GbE 32x50GbE 64x10/25GbE | 8x40/100GbE 16x50GbE 32x10/25GbE | | |
| Minimum Configuration | 16 ports | 8 Ports - pay as you grow with 8 additional ports Upgrade License (Q2M94AAE) | | |
| Size | 1U (½ 19" wide) | 1U (½ 19" wide) | | |
| Switching Capacity | 3.2Tb/s | 3.2Tb/s (halved at 8 ports) | | |
| Processing Capacity | 4.76Bpps | 4.76Bpps (halved at 8 ports) | | |
| Forwarding Technology | Cut Through | Cut Through | | |
| Latency | 300ns | 300ns | | |
| Typical Power Consumption | 94W | 94W | | |
| Supported Operating Systems | ONYX & ONIE | ONYX | | |
| System Memory | 8GB | 8GB | | |
| SSD Memory | 16MB | 16MB | | |
| Packet Buffer | 16MB | 16MB | | |
| 100/100 Mgmt Ports | 1 RJ45 | 1 RJ45 | | |
| Serial Ports | 1 RJ45 | 1 RJ45 | | |
| USB Ports | 1 Mini USB | 1 Mini USB | | |
| Airflow | Power-to-Connector Connector-to-Power | Power-to-Connector | | |
| Power Supplies | 2 (1+1 redundant); not replaceable | 2 (1+1 redundant); not replaceable | | |
| Fans | 2 fans not replaceable | 2 fans not replaceable | | |
| 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 | | |
| 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) | | |
| Weight | 4.53kg (10Lb) | 4.53kg (10Lb) | | |

Environment

Operating temperature $0^{\circ}C$ to $40^{\circ}C$

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)

Typical power with passive cables (ATIS): $94.3 \ensuremath{\mathbb{W}}$

Summary of Changes

| Date | Version History | Action | Description of Change | |
|-------------|-----------------|---------|---|--|
| 05-Aug-2019 | Version 7 | Changed | Overview, Service and Support, Family Information and Technical Specifications sections were updated. | |
| 02-Apr-2019 | Version 6 | Changed | Family Information and Technical Specifications sections were updated. | |
| 07-Jan-2019 | Version 5 | Changed | Overview, Models, Service and Support, Family Information, Configuration Information and Technical Specifications sections were update | |
| 15-Oct-2018 | Version 4 | 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 3 | Changed | SKU descriptions were updated. | |
| | | Removed | Obsolete SKUs were removed | |
| 08-Jan-2018 | Version 2 | Changed | ed The support matrix was updated and few typos were fixed. | |
| 25-Sep-2017 | Version 1 | New | New QuickSpecs | |



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