

Overview

HPE Virtual Connect SE 40Gb F8 Module for HPE Synergy

The HPE Virtual Connect SE 40Gb F8 Module, master module, based on composable fabric is designed for Composable Infrastructure. Its disaggregated, rack-scale design uses a master/satellite architecture to consolidate data center network connections, reduce hardware and scales network bandwidth across multiple HPE Synergy Frames.

The master module contains intelligent networking capabilities that extend connectivity to satellite frames through Interconnect Link Modules. This eliminates top of rack switch need and substantially reduces cost. The reduction in components also simplifies fabric management at scale while consuming fewer ports at the data center aggregation layer.

The HPE VC SE 40Gb F8 modules eliminate up to 95% of network sprawl at the compute module edge with one device that converges traffic inside frames and directly connects to external LANs. Each redundant pair of Virtual Connect modules provide 4 adjustable downlinks connections (three Ethernet and one Fibre Channel) on each compute module. A Fibre Channel Upgrade license needs to be purchased separately to enable the Fibre channel functionality. Up to six uplinks using QSFP+ interfaces are available for connection to upstream Ethernet switches. Up to 24 uplinks are available for connection to upstream Ethernet and Fibre Channel are available with splitter cables. The HPE VC SE 40Gb F8 Modules reduce the number of components required compared to traditional and other converged network solutions by eliminating the need for separate Ethernet and Fibre Channel switches and cables. Also, Virtual Connect wire-once connection management is built-in enabling compute modules adds, moves and replacement in minutes instead of days or weeks. The Master/Satellite disaggregated architecture removes fixed ratios of interconnects in every frame and allows extending networking resources pool for Virtual Connect to satellite frames.

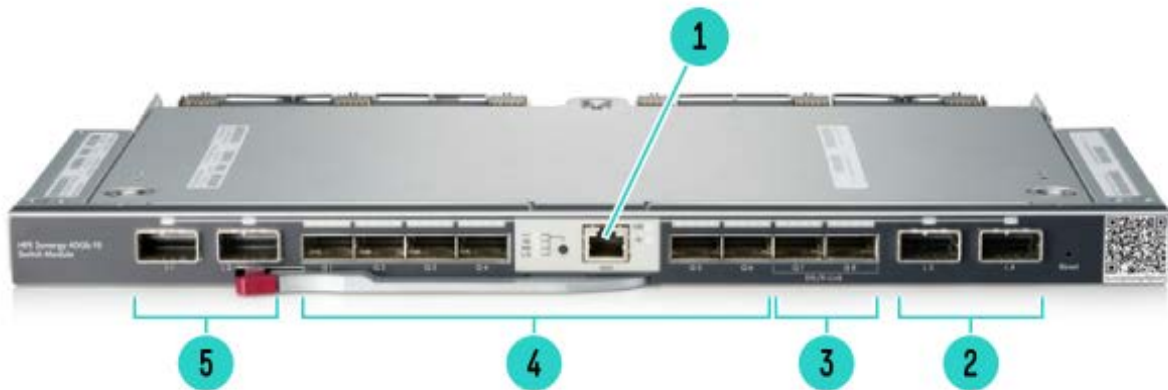


Figure 1 HPE Virtual Connect SE 40GB F8 Module for HPE Synergy Bezel

- | | |
|----------------------------|----------------------------|
| 1. For future use | 4. 40Gb QSFP+ uplink ports |
| 2. Interconnect link ports | 5. Interconnect link ports |
| 3. ICM Cluster ports | |

Platform Information

Models

HPE Virtual Connect SE 40Gb F8 Module for Synergy
(Trade Agreement Act (TAA) compliant SKU same as above)

794502-B23

NOTE: HPE offers multiple Trade Agreement Act (TAA) compliant configurations to meet the needs of US Federal Government customers. These products are either manufactured or substantially transformed in a designated country.

Compatibility

HPE Virtual Connect SE 40Gb F8 Module for HPE Synergy Module support the following hardware.

HPE Compute Modules

HPE Synergy Compute Modules

- HPE Synergy 480 Gen9 Compute Module
- HPE Synergy 620 Gen9 Compute Module
- HPE Synergy 660 Gen9 Compute Module
- HPE Synergy 680 Gen9 Compute Module
- HPE Synergy 480 Gen10 Compute Module
- HPE Synergy 660 Gen10 Compute Module

HPE Interconnect Link Modules

HPE Interconnect Link Modules

- HPE Synergy 20Gb Interconnect Link Module
- HPE Synergy 10Gb Interconnect Link Module

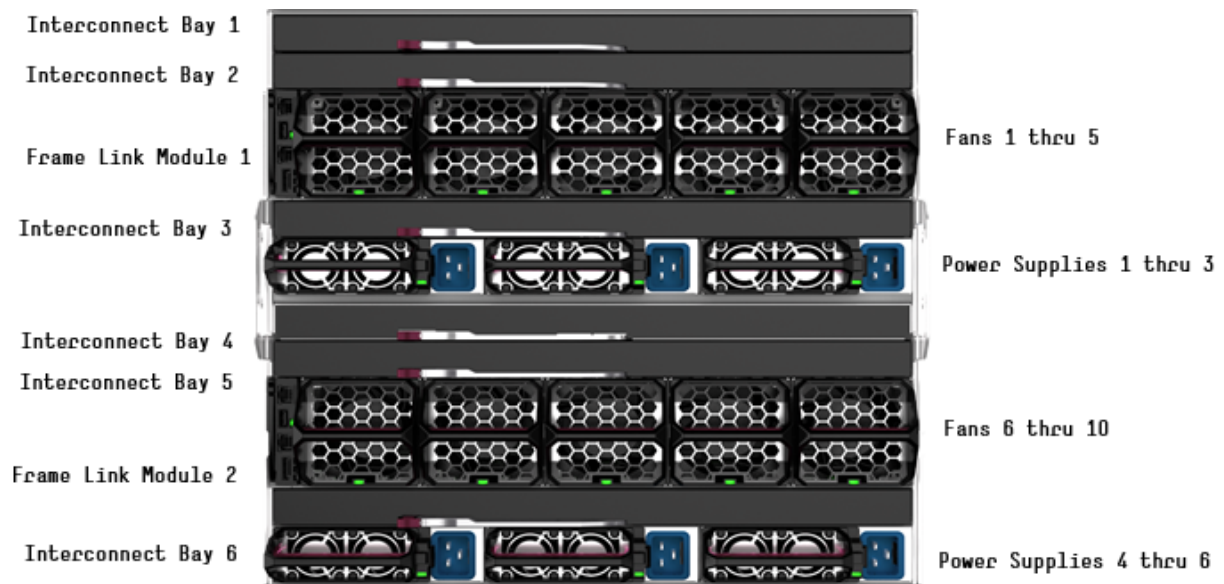
HPE Network Adapters

Converged Network Adapter:

- HPE Synergy 3820C 10/20Gb Converged Network Adapter
- HPE Synergy 2820C 10Gb Converged Network Adapter

NOTE: Consult individual compute module QuickSpecs for specific adapter support.

Supported Configurations



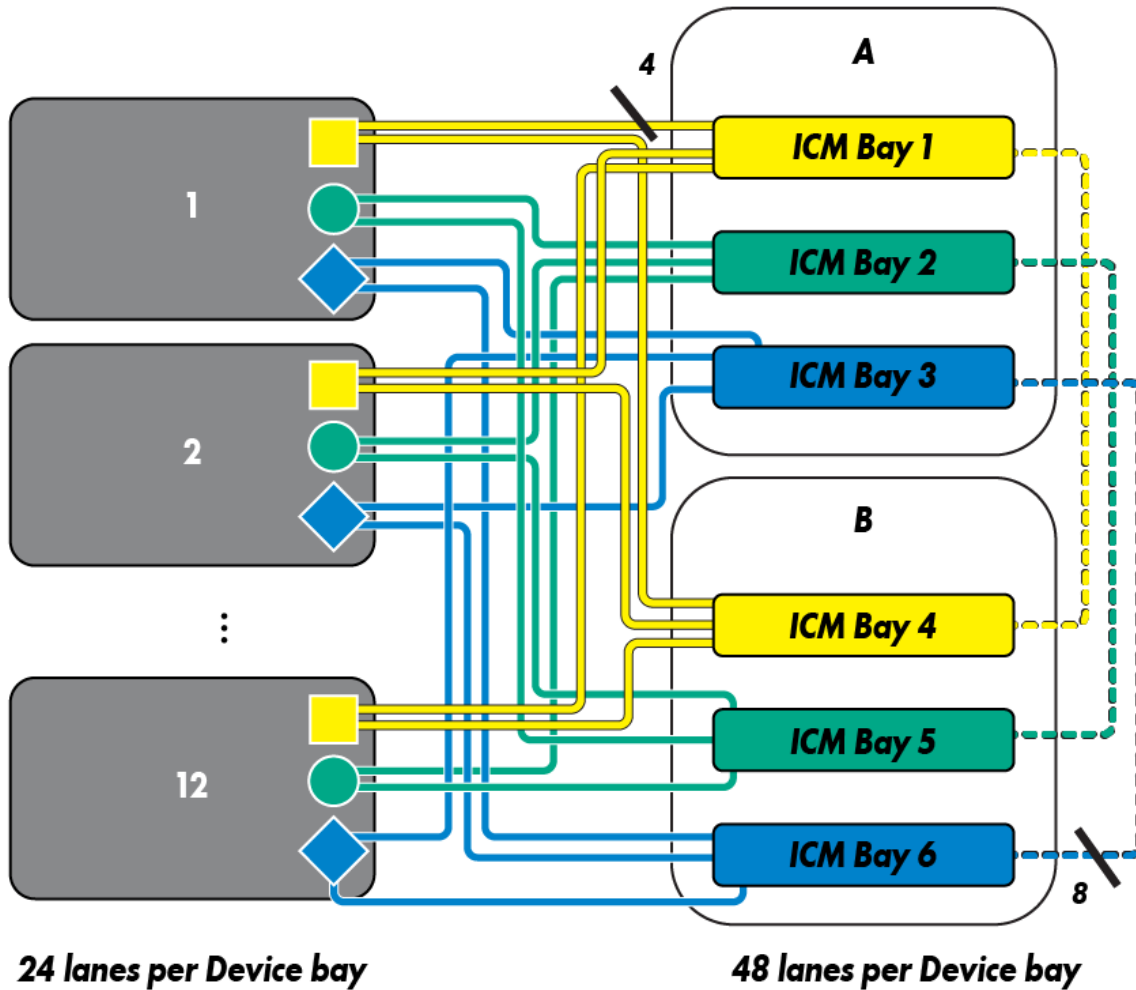
Platform Information

HPE Synergy 12000 Frame - Rear View

Mezzanines to Interconnect Port Mapping

The first interconnect in an ICM bay set is connected to Port 1 of the mezzanine card and the second interconnect in an ICM bay set is connected to Port 2 of that mezzanine card. If the two interconnects in an ICM bay set are of the same type, they provide redundant connectivity to the two mezzanine ports.

NOTE: Dotted lines in the figure below indicate paired Interconnect Bay (ICB).



HPE 12000 Synergy Frame

NOTE: For ease of representation and understanding paired Interconnect Bay (ICB) are shown adjacent rather than vertically as in the real-frame. Interconnect frames are formed between ICB 1 with ICB 4, ICB 2 with ICB 5, and ICB 3 with ICB 6.

NOTE: Hence the below representation. Up to 3 Synergy frames can be deployed with the HPE VC SE 40Gb module when paired with the HPE 20Gb ILM. Up to 5 Synergy frames can be deployed with the HPE VC SE 40Gb module when paired with the HPE 10Gb ILM. Shown below is a 2 frame example with different combinations of slot placements.

Interconnect Module Configurations	Compute Module Network Adapters Used
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Platform Information

Frame 1

[ICB 1]	Empty/Interconnect	->	Empty/Interconnect	[ICB 4]	Empty/Adapter
[ICB 2]	Empty/Interconnect	->	Empty/Interconnect	[ICB 5]	Empty/Adapter
[ICB 3]	HPE VC SE 40Gb F8	->	HPE 10/20Gb ILM	[ICB 6]	HPE Synergy 10/20 CNA

Frame 2

[ICB 1]	Empty/Interconnect	->	Empty/Interconnect	[ICB 4]	Empty/Adapter
[ICB 2]	Empty/Interconnect	->	Empty/Interconnect	[ICB 5]	Empty/Adapter
[ICB 3]	HPE 10/20Gb ILM	->	HPE VC SE 40Gb F8	[ICB 6]	HPE Synergy 10/20 CNA

Frame 1

[ICB 1]	Empty/Interconnect	->	Empty/Interconnect	[ICB 4]	Empty/Adapter
[ICB 2]	HPE VC SE 40Gb F8	->	HPE 10/20Gb ILM	[ICB 5]	HPE Synergy 10/20 CNA
[ICB 3]	Empty/Interconnect	->	Empty/Interconnect	[ICB 6]	Empty/Adapter

Frame 2

[ICB 1]	Empty/Interconnect	->	Empty/Interconnect	[ICB 4]	Empty/Adapter
[ICB 2]	HPE 10/20Gb ILM	->	HPE VC SE 40Gb F8	[ICB 5]	HPE Synergy 10/20 CNA
[ICB 3]	Empty/Interconnect	->	Empty/Interconnect	[ICB 6]	Empty/Adapter

Frame 1

[ICB 1]	HPE VC SE 40Gb F8	->	HPE 10/20Gb ILM	[ICB 4]	HPE Synergy 10/20 CNA
[ICB 2]	Empty/Interconnect	->	Empty/Interconnect	[ICB 5]	Empty/Adapter
[ICB 3]	Empty/Interconnect	->	Empty/Interconnect	[ICB 6]	Empty/Adapter

Frame 2

[ICB 1]	HPE 10/20Gb ILM	->	HPE VC SE 40Gb F8	[ICB 4]	HPE Synergy 10/20 CNA
[ICB 2]	Empty/Interconnect	->	Empty/Interconnect	[ICB 5]	Empty/Adapter
[ICB 3]	Empty/Interconnect	->	Empty/Interconnect	[ICB 6]	Empty/Adapter

Frame 1

[ICB 1]	HPE VC SE 40Gb F8	->	HPE 10/20Gb ILM	[ICB 4]	HPE Synergy 10/20 CNA
[ICB 2]	HPE VC SE 40Gb F8	->	HPE 10/20Gb ILM	[ICB 5]	HPE Synergy 10/20 CNA
[ICB 3]	Empty/Interconnect	->	Empty/Interconnect	[ICB 6]	Empty/Adapter

Frame 2

[ICB 1]	HPE 10/20Gb ILM	->	HPE VC SE 40Gb F8	[ICB 4]	HPE Synergy 10/20 CNA
[ICB 2]	HPE 10/20Gb ILM	->	HPE VC SE 40Gb F8	[ICB 5]	HPE Synergy 10/20 CNA
[ICB 3]	Empty/Interconnect	->	Empty/Interconnect	[ICB 6]	Empty/Adapter

Platform Information

Frame 1

[ICB 1]	HPE VC SE 40Gb F8	->	HPE 10/20Gb ILM	[ICB 4]	HPE Synergy 10/20 CNA
[ICB 2]	Empty/Interconnect	->	Empty/Interconnect	[ICB 5]	Empty/Adapter
[ICB 3]	HPE VC SE 40Gb F8	->	HPE 10/20Gb ILM	[ICB 6]	HPE Synergy 10/20 CNA

Frame 2

[ICB 1]	HPE 10/20Gb ILM	->	HPE VC SE 40Gb F8	[ICB 4]	HPE Synergy 10/20 CNA
[ICB 2]	Empty/Interconnect	->	Empty/Interconnect	[ICB 5]	Empty/Adapter
[ICB 3]	HPE 10/20Gb ILM	->	HPE VC SE 40Gb F8	[ICB 6]	HPE Synergy 10/20 CNA

Frame 1

[ICB 1]	Empty/Interconnect	->	Empty/Interconnect	[ICB 4]	Empty/Adapter
[ICB 2]	HPE VC SE 40Gb F8	->	HPE 10/20Gb ILM	[ICB 5]	HPE Synergy 10/20 CNA
[ICB 3]	HPE VC SE 40Gb F8	->	HPE 10/20Gb ILM	[ICB 6]	HPE Synergy 10/20 CNA

Frame 2

[ICB 1]	Empty/Interconnect	->	Empty/Interconnect	[ICB 4]	Empty/Adapter
[ICB 2]	HPE 10/20Gb ILM	->	HPE VC SE 40Gb F8	[ICB 5]	HPE Synergy 10/20 CNA
[ICB 3]	HPE 10/20Gb ILM	->	HPE VC SE 40Gb F8	[ICB 6]	HPE Synergy 10/20 CNA

Frame 1

[ICB 1]	HPE VC SE 40Gb F8	->	HPE 10/20Gb ILM	[ICB 4]	HPE Synergy 10/20 CNA
[ICB 2]	HPE VC SE 40Gb F8	->	HPE 10/20Gb ILM	[ICB 5]	HPE Synergy 10/20 CNA
[ICB 3]	HPE VC SE 40Gb F8	->	HPE 10/20Gb ILM	[ICB 6]	HPE Synergy 10/20 CNA

Frame 2

[ICB 1]	HPE 10/20Gb ILM	->	HPE VC SE 40Gb F8	[ICB 4]	HPE Synergy 10/20 CNA
[ICB 2]	HPE 10/20Gb ILM	->	HPE VC SE 40Gb F8	[ICB 5]	HPE Synergy 10/20 CNA
[ICB 3]	HPE 10/20Gb ILM	->	HPE VC SE 40Gb F8	[ICB 6]	HPE Synergy 10/20 CNA

Standard Features

Product Features

Performance

- 6xQSFP+ external uplink ports configurable as 1x40Gb or 4x10Gb Ethernet or 4x8Gb FC connected to external LAN/SAN switches
- 12 x 20Gb or 12x10Gb Ethernet downlinks to compute module Converged Network Adapters
- Each FlexHBA can be configured to transport either Fiber Channel over Ethernet/CEE or Accelerated iSCSI protocol.
- Each FlexNIC and FlexHBA is recognized by the compute module as a PCIe physical function device with adjustable speeds from 200Mb to 20Gb in 100Mb increments when connected to a 2-port Converged Network Adapter or any Flex-10/20 NIC and from 1Gb to 20Gb in 200Mb increments when connected to a Dual-Port 10/20Gb Converged Network Adapter
- Extended list of direct attach copper cable connections supported
- Low latency (1.0 μ s Ethernet ports) throughput provides switch-like performance.
- Line-rate, full-duplex 2.56 Tbps bridging fabric
- MTU up to 9216 Bytes - Jumbo Frames
- Supports up to 288K L2 MAC entries
- VLAN Tagging, Pass-Thru and Link Aggregation supported on all uplinks

Management

- Integrated composer based HPE OneView included with every frame, providing out-of-the-box for individual Virtual Connect configuration and management.
- Pre-configure compute modules I/O configurations prior to their installation for easy deployment
- Move, add, or change compute module network connections on the fly without impacting LAN and SAN administrator
- Monitoring and management via industry standard SNMP v.1 and v.2
- Provisioned storage resource is associated directly to a specific virtual machine - even if the virtual server is re-allocated within a frame
- Compute module-side NPIV removes storage management constraint of a single physical HBA on a compute module does not add to SAN switch domains or require traditional SAN management
- Licensing support for native Fibre Channel through Composer powered by OneView

Options

- Optional HPE 10Gb SFP+ SR, LR, and LRM modules and 10Gb SFP+ Copper cables
- Optional HPE 40Gb QSFP+SR, SR 300M and LR modules, 40Gb SFP+ DAC and AOC cables, 40Gb DAC splitter cables and QSFP+ to SFP+ adapter
- Supports Converged Network adapters for HPE Synergy Compute Nodes(Supported functionality defined by each adapter)

Service and Support

HPE Support Services and Warranty Information

Service and Support HPE Technology Services offers you a rich portfolio of consulting and support services designed to add value to our core products and solutions. We have the know-how and experience to put technology to work for you. We work closely with you, as your strategic partner, leveraging our full services portfolio to make sure that everything works to help optimize your enterprise.

Choose from services aligned to our product offerings and lifecycle. From proactive onsite services to innovative support when your products are connected to Hewlett Packard Enterprise, you choose the precise level of attention and support your business demands.

HPE Technology Services for HPE Synergy

HPE Technology Services delivers confidence, reduces risk and helps customers realize agility and stability. Connect to Hewlett Packard Enterprise to help prevent problems and solve issues faster. Our support technology lets you to tap into the knowledge of millions of devices and thousands of experts to stay informed and in control, anywhere, any time.

Protect your business beyond warranty with HPE Support Services

HPE support services offer complete care and support expertise with committed response choices that are designed to meet your IT and business needs.

HPE Foundation Care services offer scalable reactive support-packages for HPE Synergy and software. You choose the type and level of service that is most suitable for your IT and business needs.

HPE Proactive Care keeps your system stable and reliable helping to prevent problems and reduce outages through proactive service management and enhanced technical response.

Advise, transform, integrate, support, automate, and flex

HPE Technology Services helps you get the most out of what you have today and transition to HPE Synergy, a composable infrastructure, at your pace and from wherever you are on the journey.

Start with the HPE Transformation Workshop to ensure that your business and IT organizations collaborate, define the topline strategy for composable, software-defined, cloud-ready infrastructure and kick-start your projects confidently. This workshop clarifies your business requirements and the issues that IT and operations teams must resolve in order to meet these requirements. A detailed executive briefing or high-level report summarizes the strategies, high-level plan and functional requirements.

HPE Modernization and Migration Services helps you choose the right platform for the right workload at the right cost and evolve your IT infrastructure, processes and organization taking advantage of “on-hybrid infrastructure” innovations such as composable, converged, software-defined, technologies. Hewlett Packard Enterprise experts advise, transform, integrate and implement for platform refresh, datacenter consolidation virtualization, migration and automation projects.

HPE Flexible Capacity is a pay per use model for on premise infrastructure. This offers needed HPE Synergy capacity in the datacenter, plus a buffer of additional capacity. As HPE Synergy will be a dynamic environment, this provides enough room to grow your environment, but only pay for actual metered use. Technology transitions and refresh can be built in, infrastructure and services are billed monthly, enabling you to align costs to business use.

HPE Datacenter Care Infrastructure Automation: Synergy with OneView embedded helps enable infrastructure automation and is integrated with tools such as those from Chef, Puppet, and Docker, to enable rapid bare metal provisioning. With DC-IA, HPE service experts provide advice, support, best practices, for these tools that work with OneView to help create a fast, agile, and reliable automated IT environment. With

Service and Support

this approach, customers can deploy faster. DC-IA delivers support to customers to enable infrastructure as code and agile processes as part of the service. Customers schedule quarterly reviews and reports with HPE Center of Expertise, as well as having access to these experts when needed, for automation development and code coaching.

Deploy and integrate

HPE Factory Express Initial Frame Service for Synergy

Factory Express allows a customers' configurations to be pre-configured in the HPE Integration center with an implementation project manager to manage the deployment end to end. The project manager will act as a single point of contact to coordinate the build, delivery and onsite installation and commissioning of the solution. In addition to the configuration and deployment activities, your HPE Synergy configuration goes through comprehensive testing and a detailed documentation package on the configuration and settings of the delivered solution will be provided.

HPE Factory Express Synergy Additional Frame Service for Synergy

Add additional frames to your HPE Synergy Factory Express service or expand your existing HPE Synergy Infrastructure.

HPE Synergy First Frame Installation and Startup - Provides for hardware installation (HPE Synergy compute modules, Storage Modules, Virtual Connect modules, Interconnect Link Modules, Fibre Channel Modules, Frame Link Modules, and HPE Synergy D3940 Storage Modules) and software startup for the first frame of your HPE Synergy deployment. Additional frames can be added using the HPE Synergy Additional Frame Installation and Startup Service.

HPE Synergy Additional Frame Installation and Startup Service - Add additional frames to your HPE Synergy First Frame Startup service or expand your existing HPE Synergy Infrastructure.

Optimized Support

Choose the right support to maximize uptime, free up your resources, and achieve improved value—as you get the most out of the existing IT assets while accelerating time-to-revenue.

HPE Proactive Care Advanced - 24x7 coverage, three year Support Service

Builds and incorporates on Proactive Care and also gives customers personalized technical and operational advice from an assigned, local Account Support Manager for personalized technical collaboration, flexible access to specialist skills to help optimize business critical IT, and Critical Incident Management to help so the business is not affected if there is a system or device outage. This recommendation provides 24x7 coverage with four-hour response for hardware and Basic Software Support and Collaborative Call Management for selected non-HPE software that offers two-hour callback for supported software issues.

<https://www.hpe.com/h20195/v2/GetPDF.aspx/4AA5-3259ENW.pdf>

Standard Support

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

Hardware and software support services designed specifically for your technology with rapid access to Advanced Solution Center specialists for start to finish case management plus proactive reports and recommendations for firmware and software management and best practice advice. This recommendation provides 24x7 coverage with four-hour response for hardware and Basic Software Support and Collaborative Call Management for selected non-HPE software that offers two-hour callback for supported software issues.

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

HPE Education

Training your IT staff is critical to help drive the value of HPE Synergy with increased efficiencies and better business outcomes. Training is key to the transformation and management of HPE Synergy.

Parts and Materials

Hewlett Packard Enterprise will provide HPE-supported replacement parts and materials necessary to

Service and Support

maintain the covered hardware product in operating condition, including parts and materials for available and recommended engineering improvements.

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

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

For more information

Additional Support Services can be found at HPE Support Services Central
<http://ssc.hpe.com/portal/site/ssc/>

Related Options

Interconnect Link Module Cables	HPE Synergy Interconnect Link 1.1m Direct Attach Copper Cable	804095-B21
	HPE Synergy Interconnect Link 1.6m Direct Attach Copper Cable	804098-B21
	HPE Synergy Interconnect Link 2.1m Direct Attach Copper Cable	804155-B21
	HPE Synergy Interconnect Link 3m Active Optical Cable	804101-B21
	HPE Synergy Interconnect Link 5m Active Optical Cable	804104-B21
	HPE Synergy Interconnect Link 10m Active Optical Cable	804107-B21
	HPE Synergy Interconnect Link 15m Active Optical Cable	804110-B21
Management	HPE Synergy 8Gb Fibre Channel Upgrade LTU	N3R43A
QSFP+ uplink ports options	HPE Synergy 40GbE/4x10GbE/4x8Gb FC QSFP+ Transceiver	817040-B21
	NOTE: Mixing of Ethernet and Fiber Channel port types is not supported with the transceiver above	
	HPE BladeSystem c-Class 40Gb QSFP+ MPO SR4 100m Transceiver	720187-B21
	HPE BladeSystem c-Class 40Gb QSFP+ LC LR4 Transceiver	720190-B21
	HPE BladeSystem c-Class 40Gb QSFP+ MPO SR4 300m Transceiver	747698-B21
	HPE Synergy Dual 10GBASE-T QSFP+ 30m RJ45 Transceiver	838327-B21
	NOTE: The transceiver above is only supported with HPE Synergy Image Streamer	
	HPE 40Gb QSFP+ Bidirectional Transceiver	841716-B21
	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 10m Cable	QK729A
	HPE Premier Flex MPO/MPO Multi-mode OM4 8 fiber 50m Cable	QK731A
	HPE Premier Flex MPO/MPO OM4 12 fiber 100m Cable	H6Z30A
	HPE BladeSystem c-Class 40G QSFP+ to QSFP+ 7m Active Optical Cable	720205-B21
	HPE BladeSystem c-Class 40G QSFP+ to QSFP+ 10m Active Optical Cable	720208-B21
	HPE BladeSystem c-Class 40G QSFP+ to QSFP+ 15m Active Optical Cable	720211-B21
	HPE BladeSystem c-Class 40G QSFP+ to QSFP+ .35m Direct Attach Copper Cable	730907-B21
	HPE BladeSystem c-Class 40G QSFP+ to QSFP+ 1m Direct Attach Copper Cable	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 BladeSystem c-Class QSFP+ to 4x10G SFP+ 7m Active Optical Cable	721070-B21
	HPE BladeSystem c-Class QSFP+ to 4x10G SFP+ 10m Active Optical Cable	721073-B21
	HPE BladeSystem c-Class QSFP+ to 4x10G SFP+ 15m Active Optical Cable	721076-B21
	HPE BladeSystem c-Class 40G QSFP+ to 4x10G SFP+ 3m Direct Attach Copper Splitter Cable	721064-B21
	HPE BladeSystem c-Class 40G QSFP+ to 4x10G SFP+ 5m Direct Attach Copper Splitter Cable	721067-B21
	HPE FlexNetwork X240 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+ 3m Direct Attach Copper Splitter Cable	JG330A

Related Options

HPE FlexNetwork X240 40G QSFP+ to 4x10G SFP+ 5m Direct Attach Copper Splitter Cable JG331A

NOTE: In addition to the supported HPE and non-HPE Copper cables above, Virtual Connect provides "allowed" connections using third party cables that meet the following criteria: connector=copper pigtail; transceiver code=active cable or passive cable; speed equal or less than 40Gb; length between 1m and 7m, inclusive. All "allowed" DACs are connected and logged. Prior to requesting support from Hewlett Packard Enterprise, a DAC from the supported list above must be used to verify a cable issue is not involved.

QSFP+ to SFP+ Options

HPE BladeSystem c-Class QSFP+ to SFP+ Adapter	720193-B21
HPE BladeSystem c-Class 10Gb SFP+ SR Transceiver	455883-B21
HPE BladeSystem c-Class 10Gb SFP+ LR Transceiver	455886-B21
HPE 10GBase-T SFP+ Transceiver	813874-B21
HPE X242 10G SFP+ to SFP+ 3m Direct Attach Copper Cable	J9283B
HPE B-series SFP+ to SFP+ Active Copper 1.0m Direct Attach Cable	AP818A
HPE B-series SFP+ to SFP+ Active Copper 3.0m Direct Attach Cable	AP819A
HPE B-series SFP+ to SFP+ Active Copper 5.0m Direct Attach Cable	AP820A
HPE StoreFabric C-series 3M Passive Copper SFP+ Cable	K2Q21A
HPE StoreFabric C-series 5M Passive Copper SFP+ Cable	K2Q22A
HPE C-series SFP+ to SFP+ Active Copper 7.0m Direct Attach Cable	QK701A
HPE C-series SFP+ to SFP+ Active Copper 10.0m Direct Attach Cable	QK702A
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 8Gb Short Wave Fibre Channel SFP+ 1 Pack	AJ718A
HPE BladeSystem c-Class 10GbE SFP+ to SFP+ 0.5m Direct Attach Copper Cable	487649-B21
HPE BladeSystem c-Class 10GbE SFP+ to SFP+ 1m Direct Attach Copper Cable	487652-B21
HPE BladeSystem c-Class 10GbE SFP+ to SFP+ 3m Direct Attach Copper Cable	487655-B21
HPE BladeSystem c-Class 10GbE SFP+ to SFP+ 5m Direct Attach Copper Cable	537963-B21
HPE FlexNetwork X240 10G SFP+ to SFP+ 3m Direct Attach Copper Cable	JD097C
HPE FlexNetwork X240 10G SFP+ to SFP+ 5m Direct Attach Copper Cable	JG081C
HPE 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

NOTE: For the ICM clustering ports, in addition to the 40G DAC and 40G AOC options above, any of the 40G optical transceivers above can be used with the supported fiber cables

Related Options

Services

<http://ssc.hpe.com/portal/site/ssc/>

HPE Synergy Proactive Care Services

HPE 3 Year Proactive Care 24x7 VC SE 40Gb F8 Module Service	H0XG0E
HPE 3 Year Proactive Care 24x7 with CDMR VC SE 40Gb F8 Module Service	H0XG2E
HPE 3 Year Proactive Care Advanced 24x7 VC SE 40Gb F8 Module Service	H0XG3E
HPE 3 Year Proactive Care Advanced 24x7 with CDMR VC SE 40Gb F8 Module Service	H0XG5E

Deployment/Installation & Start-up Services

HPE Factory Express Synergy Initial Frame Package 4 Service	HA454A1-300
HPE Factory Express Synergy Add-on Frame Package 4 Service	HA454A1-301
HPE Synergy First Frame Startup Service	U8JM3E
HPE Synergy Additional Frame Startup Service	U8JM4E

Technical Specifications

Shipping Dimensions	Length	19.45 in (494 mm)	
	Width	15.55 in (395 mm)	
	Height	5.75 in (145 mm)	
Shipping Weight		Approximately 5.4Kg (12.0 Lbs)	
Product Specifications Hardware	Performance	Line-rate, full-duplex 2.56 Tbps bridging fabric Non-blocking architecture Maximum transmission unit (MTU) of up to 9216 bytes (jumbo frames)	
	Connectors and Cabling	12 x 20Gb downlinks through the midplane 6 x 40Gb SR4, LR4 fiber, DAC, AOC and Splitter uplink 4x120Gb Interconnect Link ports	
	Indicators	Interconnect link cable port LED QSFP+ port LED Next button Reset pin-hole Health LED Ethernet mode LED PID mode LED Link/Activity mode LED	
	Weight	4.22Kg (9.3 Lbs)	
	Latency	1.0 μ s on Ethernet only port	
	Scalability	Does not contribute to the total switch limit.	
	Buffer Credits	8 buffer credits per port, ASIC embedded memory	
	Environmental Ranges	Temperature Range	
		Specification	10°C to 40°C (50°F to 104°F)*
		Temperature Range	
Operating		10°C to 40°C (50°F to 104°F)	
Shipping		Shipping -40°C to 70°C (-40°F to 158°F)	
Storage		-30°C to 60°C (-22°F to 140°F)	
Maximum wet bulb temperature		38.7°C (101.66°F)	
Relative Humidity (noncondensing)			
Operating		5% to 95%	
Shipping		5% to 95%	

NOTE: All temperature ratings shown are for sea level. An altitude derating of 1°C per 304.8 m (1.8°F per 1,000 ft) to 3048 m (10,000 ft) is applicable. No direct sunlight allowed. Upper operating limit is 3,048m (10,000 ft) or 70 Kpa/10.1 psia. Upper non-operating limit is 9,144 m (30,000 ft) or 30.3 KPa/4.4 psia.

NOTE: Storage maximum humidity of 95% is based on a maximum temperature of 45°C (113°F). Altitude maximum for storage corresponds to a pressure minimum of 70 KPa.

Technical Specifications

Power Specification 12V @ 20A (240 W max)

Product Specifications Software

Trunking, Failover and Other Networking Features

Shared Uplink Sets using Link Aggregation Control Protocol (LACP) allows the creation of Ethernet channeling with upstream switches that conform to IEEE 802.3ad. Ports can alternatively be configured for failover only.

External ports within a Port Set can be on the same VC Ethernet module or on multiple VC modules within the Logical Interconnect.

Fast MAC Cache failover enables rapid recovery of network connections when a standby module becomes active.

VLAN Features

802.1Q VLAN supported on uplinks.

Uplink ports can be configured for VLAN tagging at egress or pass-thru of tagged VLAN packets from Server ports.

Native VLAN support for untagged packets on a shared uplink set.

Packets can be targeted to a specific server ports.

Simultaneous tunneled and mapped VLAN connections to a single domain.

Management Features

Simple and intuitive Graphical User Interface (GUI) for defining, configuring, and managing all elements of Virtual Connect via composer based HPE OneView.

Comprehensive administration, definition, and management of Ethernet Network, Shared Uplink Set, SAN Fabric management and Server Profiles.

Embedded SNMP v1, v2 agents allow Network Management applications to query Virtual Connect for statistics and trap information.

Any uplink port can be used as a dedicated mirrored port for traffic analysis and troubleshooting by a Network Analyzer.

Domain Management of user accounts, frame, settings, and firmware updates
MAC Address Administration allows local administration of predefined or user-defined MAC address ranges.

WWN Address Administration allows local administration of predefined WWN addresses ranges to allow pre-provisioning of SAN volumes.

Supported by composer based HPE OneView 3.0 and higher. Provides centralized network connection management and workload mobility for multiple compute modules.

Management and Standards Support

Standards

- INCITS FC-BB-5 Rev 2.00 (on all downlinks)
- IEEE 802.1Qbb
- IEEE 802.1Qaz
- IEEE 802.1AB LLDP
- IEEE 802.1Q (VLAN includes Native VLAN support and server side VLAN tag mapping)
- IEEE 802.2 LLC
- IEEE 802.3ad Link Aggregation
 - Maximum of 48 LAGs
- Multi-Chassis Link Aggregation
 - Maximum of 16 ports per MLAG, (8 ports Active, 8 ports Standby)
 - Maximum of 24 MLAGs
- IEEE 802.3ae 10Gb Fiber Ethernet
- IEEE 802.3aq 10Gb LRM Ethernet
- SNMP v.1, v.2
- FC-BB5 aka FIP snooping on Q1-Q6

Technical Specifications

Safety and Compliance	Safety Certifications	<p>UL/CUL Recognition to UL/CSA 60950-1</p> <p>TUV to EN 60950-1</p> <p>CB report and certificate to IEC 60950-1 with all country deviations</p> <p>CE Marking</p>
Electromagnetic Emissions Certifications FCC Part 15 Class A	<p>FCC Part 15 Class A</p> <p>EN 55022 Class A (CISPR22 Class A)</p> <p>VCCI Class A</p> <p>CE Marking</p>	
Environment-friendly Products and Approach	End-of-life Management and Recycling	<p>Hewlett Packard Enterprise Enterprise offers end-of-life Hewlett Packard Enterprise product return, trade-in, and recycling programs in many geographic areas. For trade-in information, please go to: http://www.hpe.com/info/recycle. To recycle your product, please go to: http://www.hpe.com/info/recycle or contact your nearest Hewlett Packard Enterprise sales office. Products returned to Hewlett Packard Enterprise will be recycled, recovered or disposed of in a responsible manner.</p> <p>The EU WEEE directive (2002/95/EC) requires manufacturers to provide treatment information for each product type for use by treatment facilities. This information (product disassembly instructions) is posted on the Hewlett Packard Enterprise web site at: http://www.hpe.com/info/recycle. These instructions may be used by recyclers and other WEEE treatment facilities as well as Hewlett Packard Enterprise OEM customers who integrate and re-sell Hewlett Packard Enterprise equipment.</p>

Summary of Changes

Date	Version History	Action	Description of Change
11-Jul-2017	From Version 8 to 9	Changed	Standard Features, Platform Information, Related Options and Technical Specifications sections were updated.
12-Jun-2017	From Version 7 to 8	Changed	Supported Products section was updated.
08-May-2017	From Version 6 to 7	Changed	Related Options section was updated.
03-Apr-2017	From Version 5 to 6	Changed	Overview, Standard Features, and Related Options sections were updated.
		Added	SKUs were added in Related Options sections: 730907-B21, JG327A, JG328A, J9283B.
		Removed	SKUs were deleted per not supported in Related Options section: E7Y09A, QK724A.
27-Jan-2017	From Version 4 to 5	Changed	Supported Products, Standard Features, Related Options, and Technical Specifications sections were updated.
18-Nov-2016	From Version 3 to 4	Changed	Models, Related Options and Service and Support sections were updated.
29-Jul-2016	From Version 2 to 3	Changed	QuickSpecs updated.
		Added	SKU added: AJ718A
31-Mar-2016	From Version 1 to 2	Changed	Overview, Supported Products, Standard Features, Related Options, Technical Specifications sections were updated.
		Added	SKUs added in Overview and Related Options Section: 794502-B23, 804095-B21, 804098-B21, 804155-B21, 804101-B21, 804104-B21, 804107-B21, 804110-B21, N3R43A, 817040-B21, 720187-B21, 720190-B21, 747698-B21, 838327-B21, 841716-B21, K2Q46A, K2Q47A, QK729A, QK731A, H6Z30A, 720205-B21, 720208-B21, 720211-B21, 720196-B21, 720199-B21, 720202-B21, 721070-B21, 721073-B21, 721076-B21, 721064-B21, 721067-B21, JG326A, JG330A, JG331A, 720193-B21, 455883-B21, 455886-B21, 813874-B21, AP818A, AP819A, AP820A, K2Q21A, K2Q22A, QK701A, QK702A, E7Y09A, QK724A, AJ833A, AJ834A, AJ835A, AJ836A, AJ837A, AJ838A, AJ839A, 487649-B21, 487652-B21, 487655-B21, 537963-B21, JD097C, JG081C, JG329A, H0XG0E, H0XG2E, H0XG3E, H0XG5E, HA454A1-300, HA454A1-301, U8JM3E, U8JM4E.
1-Dec-2015	Version 1	Created	New QuickSpecs



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