

QuickSpecs

HP Virtual Connect 8Gb 20-Port Fibre Channel Module for c-Class BladeSystem

Overview

Simplify and make your data center change-ready.

The HP Virtual Connect 8Gb 20-port FC module offers enhanced Virtual Connect capabilities, allowing up to 128 virtual machines running on the same physical server to access separate storage resources. Provisioned storage resource is associated directly to a specific virtual machine - even if the virtual server is re-allocated within the BladeSystem; Storage management of virtual machines is no longer limited by the single physical HBA on a server blade: SAN administrators can now manage virtual HBAs with the same methods and viewpoint of physical HBAs. The HP Virtual Connect 8Gb 20-port Fibre Channel Module for the c-Class BladeSystem is the simplest, most flexible connection to your SAN fabrics. The HP Virtual Connect 8Gb 20-port Fibre Channel Module simplifies server connections by cleanly separating the server enclosure from SAN, simplifies SAN fabrics by reducing cables without adding switches to the domain, and allows you to change servers in just minutes, not days.

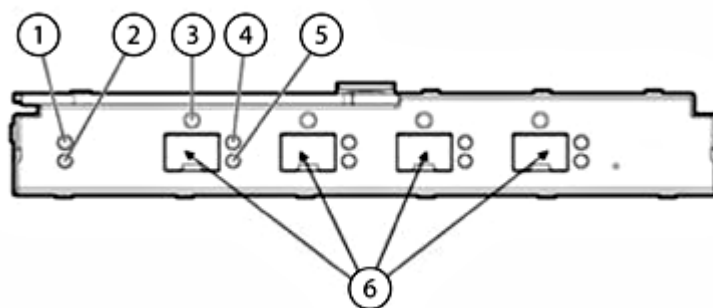


Figure 1 HP Virtual Connect 8Gb 20 Port Fibre Channel Module Front Bezel

- | | |
|--|--|
| 1. UID Indicator | 4. Link Status Indicator |
| 2. Module Health Indicator | 5. Port Activity Indicator |
| 3. Port Configuration Status Indicator | 6. Ports 1-4 (2,4, or 8Gb Fibre Channel) |

What's New

Virtual Connect v4.01:

- Auto negotiation with Nexus 5000 at 8Gb

Models

HP Virtual Connect 8Gb 20-port Fibre Channel Module for c-Class BladeSystem

572018-B21

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HP Virtual Connect 8Gb 20-Port Fibre Channel Module for c-Class BladeSystem

Supported Products

Compatibility

HP BladeSystem ProLiant and Integrity Servers Compatible with HP ProLiant c-class Blade Servers (up to Generation 7) and HP Integrity c-class Blade Servers supporting the QLogic QMH2462 4Gb FC HBA and Emulex LPe1105-HP 4Gb HBA.

Compatible with HP ProLiant c-class Blade Servers (G6 & G7) supporting Brocade 804 8Gb FC HBA, QMH2562 8Gb FC HBA, and LPe1205 8Gb HBA.

Compatible with current release of HP ProLiant c-Class Generation 8 Blade Servers supporting the QLogic QMH2572 8Gb FC HBA and Emulex LPe1205A 8Gb FC HBA.

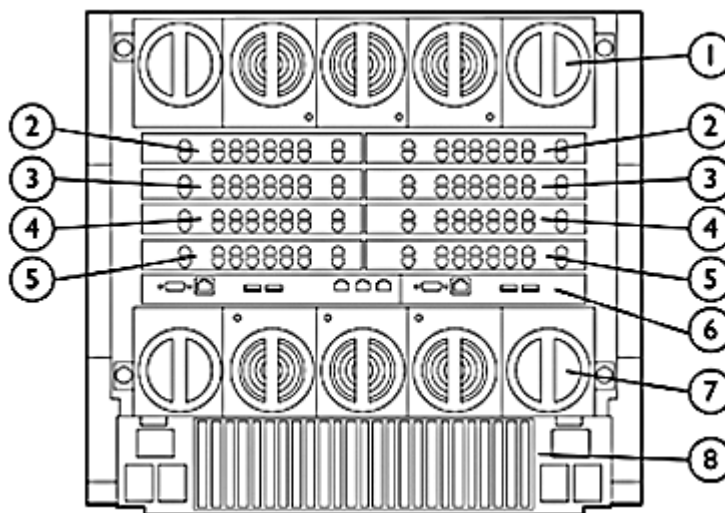
For the latest additional information on required firmware versions and to download firmware upgrades, see the HP website: <http://www.hp.com/go/bladessystemupdates>

HP ProLiant and Integrity BL c-Class Server Blade Enclosures The HP BladeSystem c3000 and c7000 Enclosures have been designed up front with the Virtual Connect Architecture in mind incorporating the HP Onboard Administrator, iLO Management, and HP Management tools inside the Virtual Connect framework.

NOTE: HP Integrity BL8x0c i2 Server Blades require OA version 3.0 or later.

For the latest additional information on required firmware versions and to download firmware upgrades, see the HP website: <http://www.hp.com/go/bladessystemupdates>

Supported Configurations



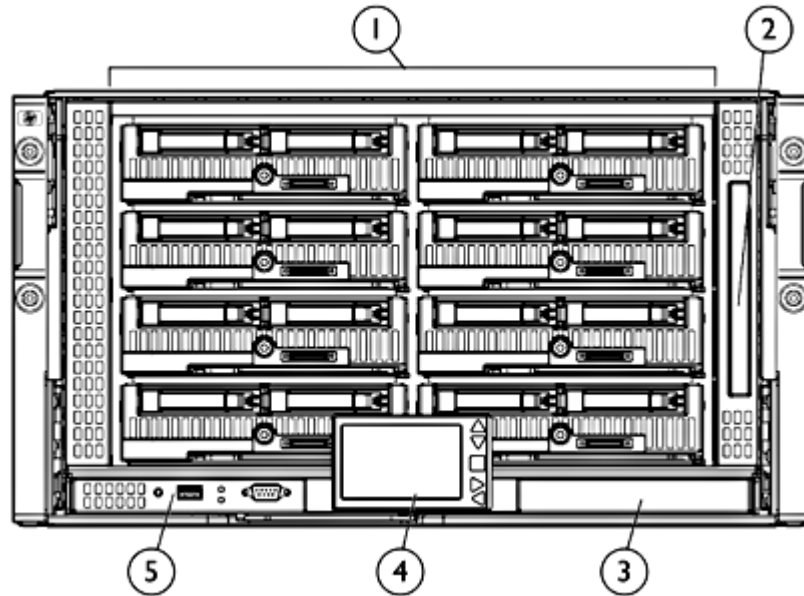
HP BladeSystem c7000 Enclosure - Rear View

- | | |
|----------------------------|---------------------------------|
| 1. Upper Fan System | 5. Interconnect Bays 7 / 8 |
| 2. Interconnect Bays 1 / 2 | 6. On Board Administrator |
| 3. Interconnect Bays 3 / 4 | 7. Lower Fan System |
| 4. Interconnect Bays 5 / 6 | 8. Rear Redundant Power Complex |

QuickSpecs

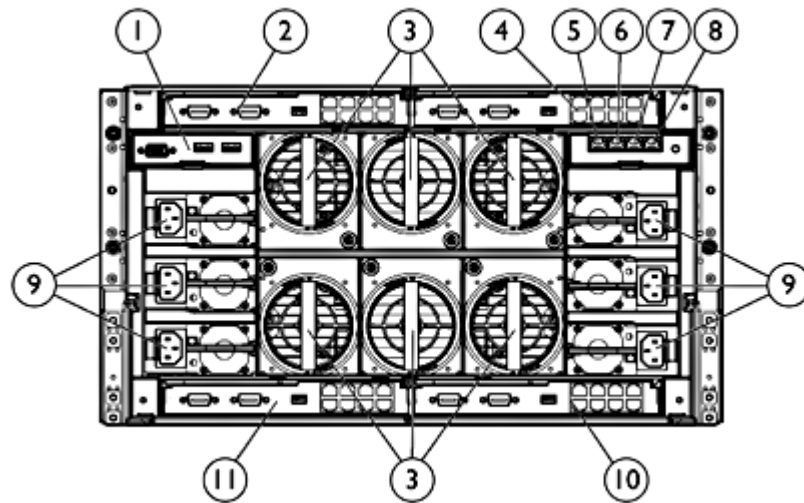
HP Virtual Connect 8Gb 20-Port Fibre Channel Module for c-Class BladeSystem

Supported Products



HP BladeSystem c3000 Enclosure - Front View

- | | |
|--|---------------------------------|
| 1. Device Bays 1 thru 8 | 4. Insight Display |
| 2. Enclosure DVD Drive | 5. Active Onboard Administrator |
| 3. Standby Onboard Administrator (reserved for Future) | |



HP BladeSystem c3000 Enclosure - Rear View

- | | |
|--|---|
| 1. Local KVM interface (reserved for future) | 7. iLO/Onboard Administrator Port |
| 2. Interconnect Bay 1 | 8. iLO/Onboard Administrator Port 2 (reserved for future) |
| 3. Active Cool Fans | 9. Power Supplies |
| 4. Interconnect Bay 2 | 10. Interconnect Bay 4 |
| 5. Enclosure Up-link and Service Port | 11. Interconnect Bay 3 |
| 6. Enclosure Down-link | |

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HP Virtual Connect 8Gb 20-Port Fibre Channel Module for c-Class BladeSystem

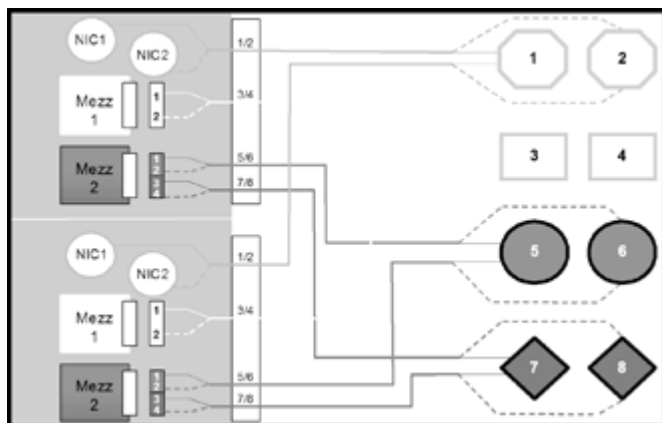
Supported Products

Mezzanines

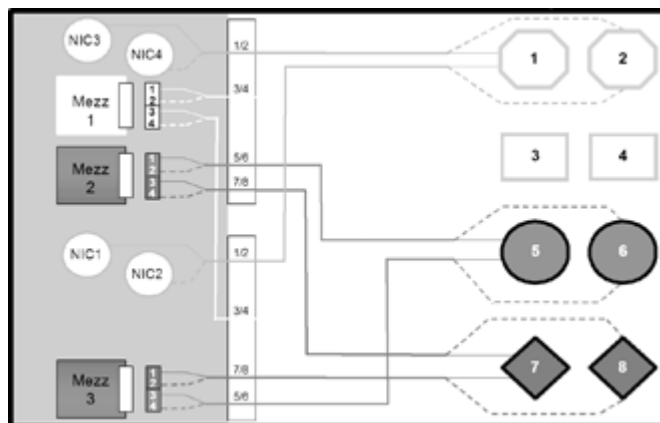
Port Mapping

Port mapping differs slightly between full height and half height server blades due to the support for additional Mezzanine cards on the full height version.

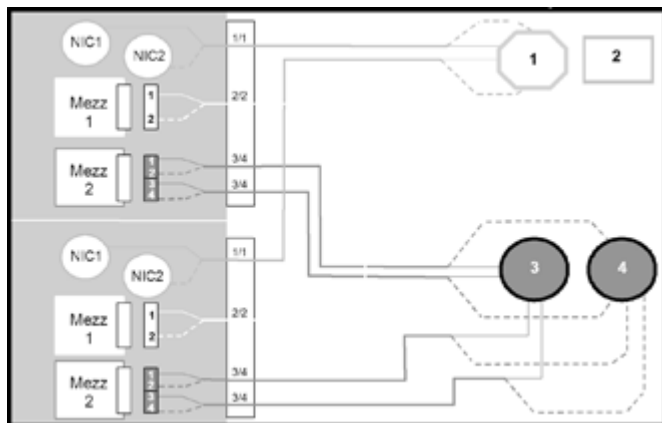
HP has simplified the processes of mapping Mezzanine ports to switch ports by providing intelligent management tools via the Onboard Administrator and HP Insight Manager Software. The Onboard Administrator Guide, Enclosure Setup and Installation Guide provide detailed information on port mapping.



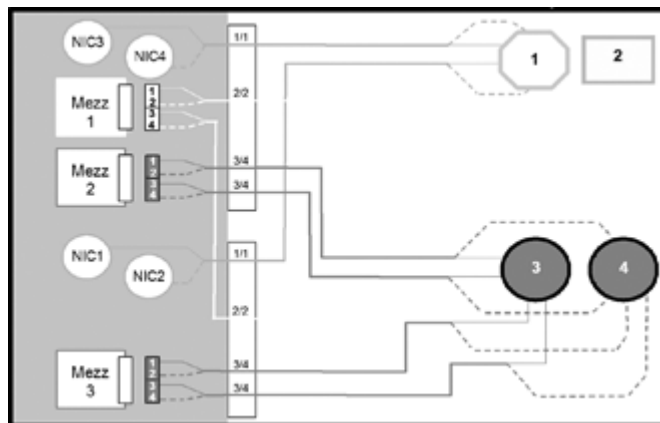
c7000 Half Height Server Blade



c7000 Full Height Server Blade



c3000 Half Height Server Blade



c3000 Full Height Server Blade

The following are supported configurations for the HP Virtual Connect 8Gb 20-port Fibre Channel Module. Please note that other interconnect options can be installed in the enclosure, but they do not inherit the benefits of Virtual Connect. Switches and Pass-Thru modules will operate per their default configurations. Any moves, adds, or changes to servers which are connected to non-Virtual Connect modules will require reconfiguration on the LAN and/or SAN. The Virtual Connect Manager will only manage Virtual Connect Modules.

The HP Virtual Connect 8Gb 20-port Fibre Channel Module requires a Virtual Connect Ethernet Module installed in the system for management and administration. The HP Virtual Connect 8Gb 20-port Fibre Channel Module requires VC Firmware version 4.01 or higher with VC FC Firmware version 1.44.

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HP Virtual Connect 8Gb 20-Port Fibre Channel Module for c-Class BladeSystem

Supported Products

HP Virtual Connect FW Package	HP 8Gb 24 Port Virtual Connect Fibre Channel Module (P/N 466482-B21)	8Gb 20 Port Virtual Connect Fibre Channel Module (P/N 572018-B21)
VC 1.34	Not Supported	Not Supported
VC 2.01	Not Supported	Not Supported
VC 2.10 (4Gb Edition)	Not Supported	Not Supported
VC 2.10 (8Gb Edition)	VCM 2.10	Not Supported
	VC-FC2 1.00	
VC 2.3x	VCM 2.30 (8Gb 24-port Edition)	VCM 2.30 (4/8Gb 20-port Edition)
	VC-FC2 1.01	VC-FC 1.40
VC 3.0x	VC-FC2 1.02	VC-FC 1.40
VC 4.0x	VC-FC2 1.05	VC-FC 1.44

HP BladeSystem c7000 Enclosure

NOTE: The following tables show a number of typical, supported configurations for an HP BladeSystem c7000 Enclosure.

[Bay 1] VC-Enet
[Bay 3] Other/empty
[Bay 5] Other/empty
[Bay 7] Other/empty

[Bay 2] Empty
[Bay 4] Other/empty
[Bay 6] Other/empty
[Bay 8] Other/empty

[Bay 1] VC-Enet
[Bay 3] Other/empty
[Bay 5] Other/empty
[Bay 7] Other/empty

[Bay 2] VC-Enet
[Bay 4] Other/empty
[Bay 6] Other/empty
[Bay 8] Other/empty

[Bay 1] VC-Enet
[Bay 3] VC-Enet
[Bay 5] Other/empty
[Bay 7] Other/empty

[Bay 2] VC-Enet
[Bay 4] VC-Enet
[Bay 6] Other/empty
[Bay 8] Other/empty

[Bay 1] VC-Enet
[Bay 3] Other/empty
[Bay 5] VC-Enet
[Bay 7] Empty

[Bay 2] VC-Enet
[Bay 4] Other/empty
[Bay 6] VC-Enet
[Bay 8] Empty

[Bay 1] VC-Enet
[Bay 3] VC-FC
[Bay 5] Other/empty
[Bay 7] Other/empty

[Bay 2] Empty
[Bay 4] Empty
[Bay 6] Other/empty
[Bay 8] Other/empty



QuickSpecs

HP Virtual Connect 8Gb 20-Port Fibre Channel Module for c-Class BladeSystem

Supported Products

[Bay 1] VC-Enet
[Bay 3] VC-FC
[Bay 5] Other/empty
[Bay 7] Other/empty

[Bay 2] VC-Enet
[Bay 4] VC-FC
[Bay 6] Other/empty
[Bay 8] Other/empty

[Bay 1] VC-Enet
[Bay 3] VC-Enet
[Bay 5] VC-FC
[Bay 7] Empty

[Bay 2] VC-Enet
[Bay 4] VC-Enet
[Bay 6] VC-FC
[Bay 8] Empty

[Bay 1] VC-Enet*
[Bay 3] VC-Enet
[Bay 5] VC-FC
[Bay 7] VC-FC

[Bay 2] VC-Enet
[Bay 4] VC-Enet
[Bay 6] VC-FC
[Bay 8] VC-FC

* This configuration is only applicable for enclosures with full-height servers.

[Bay 1] VC-Enet
[Bay 3] VC-FC
[Bay 5] VC-Enet
[Bay 7] Empty

[Bay 2] VC-Enet
[Bay 4] VC-FC
[Bay 6] VC-Enet
[Bay 8] Empty

[Bay 1] VC-Enet
[Bay 3] VC-FC
[Bay 5] VC-Enet
[Bay 7] VC-Enet

[Bay 2] VC-Enet
[Bay 4] VC-FC
[Bay 6] VC-Enet
[Bay 8] VC-Enet

[Bay 1] VC-Enet
[Bay 3] Other/empty
[Bay 5] VC-FC
[Bay 7] Empty

[Bay 2] VC-Enet
[Bay 4] Other/empty
[Bay 6] VC-FC
[Bay 8] Empty

[Bay 1] VC-Enet
[Bay 3] VC-FC
[Bay 5] VC-FC
[Bay 7] Empty

[Bay 2] VC-Enet
[Bay 4] VC-FC
[Bay 6] VC-FC
[Bay 8] Empty

[Bay 1] VC-Enet
[Bay 3] VC-Enet
[Bay 5] VC-Enet
[Bay 7] VC-Enet

[Bay 2] VC-Enet
[Bay 4] VC-Enet
[Bay 6] VC-Enet
[Bay 8] VC-Enet



QuickSpecs

HP Virtual Connect 8Gb 20-Port Fibre Channel Module for c-Class BladeSystem

Supported Products

HP BladeSystem c3000 Enclosure

NOTE: The following tables show a number of typical, supported configurations for an HP BladeSystem c3000 Enclosure.

[Bay 1] VC-Enet	[Bay 2] VC-Enet
[Bay 3] Empty	[Bay 4] Empty

[Bay 1] VC-Enet	[Bay 2] VC-Enet
[Bay 3] VC-Enet	[Bay 4] VC-Enet

[Bay 1] VC-Enet	[Bay 2] VC-Enet
[Bay 3] VC-FC	[Bay 4] VC-FC

Maximum Cable Distance (Meters) for Multi-mode Fiber Shortwave

Fiber Channel Data Rate (Gbps)	Multi-mode Fiber Type			
	OM1	OM2	OM3	OM4
8Gbps	21m	50m	150m	190m
4Gbps	70m	150m	380m	400m
2Gbps	150m	300m	500m	

Stacking Configuration

Stacking is only supported on Virtual Connect Ethernet Modules. The Virtual Connect Fibre Channel modules are managed via the Virtual Connect Ethernet Modules. The Virtual Connect firmware is dynamically mirrored between modules so all configuration data is updated simultaneously in a stack. Fibre Channel data packets are not transmitted between modules in a stacked configuration.

QuickSpecs

HP Virtual Connect 8Gb 20-Port Fibre Channel Module for c-Class BladeSystem

Standard Features

Product Features

Performance:

- Allows up to 128 virtual machines running on the same physical server to access separate storage SAN resources.
- (4) 2, 4, 8Gb Auto-negotiating Fibre Channel uplinks connected to external SAN switches
- (16) 1,2, 4 or 8Gb Auto-negotiating Fibre Channel downlink ports provide maximum HBA performance
- HBA Aggregation on uplinks ports using ANSI T11 standards-based N_Port ID Virtualization (NPIV) technology
- Extremely low latency throughput provides switch-like performance.

Management:

- Storage management of virtual machines is no longer limited by the single physical HBA on a server blade
- Managed with the Virtual Connect Ethernet Module
- Does not add to SAN switch domains or require traditional SAN management
- Appears as a pass-thru device to the SAN Manager

Virtual server profiles:

- Provisioned storage resource is associated directly to a specific virtual machine - even if the virtual server is re-allocated within the BladeSystem
- Ability to pre-configure server I/O connections
- Ability to move, add, or change servers on the fly
- Once defined, SAN Administrators don't have to be involved in server changes

Options:

- HP Virtual Connect Flex-10 Ethernet Module for c-Class BladeSystem
- HP 1/10Gb-F Virtual Connect Ethernet Module for c-Class BladeSystem
- 8Gb Fibre Channel SFP+'s not included with the Virtual Connect Fibre Channel Module
- Virtual Connect Enterprise Manager
 - www.hp.com/go/ bladesystem/virtualconnect
 - www.hp.com/go/vcem

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HP Virtual Connect 8Gb 20-Port Fibre Channel Module for c-Class BladeSystem

Service and Support, HP Care Pack and Warranty Information

Service and Support

HP Technology Services for Industry Standard Servers and BladeSystem

Capitalizing on HP ProLiant server and HP BladeSystem capabilities requires a service partner who understands your increasingly complex business technology environment. That's why it makes sense to team up with the people who know HP infrastructure hardware and software best - the experienced professionals at HP Services.

Protect your business beyond warranty with HP Care Pack Services

HP Care Pack services offer complete care and support expertise with committed response choices designed to meet your IT and business needs.

HP Foundation Care services offer scalable reactive support-packages for HP servers and software. You can choose the type and level of service that is most suitable for your IT and business needs. HP Proactive Care delivers high levels of system availability through proactive service management and advanced technical response. HP Datacenter Care provides highly flexible environmental support to address unique customer business needs.

Choose a recommended service appropriate to your product or contact your HP sales representative or authorized HP ServiceOne partner for additional HP Care Pack services information.

Recommended HP Care Pack Services for your HP product

Optimized Care

3-Year HP 6 hour Call to Repair Response, Proactive Care

Combined reactive and proactive support for hardware and software helping optimize your systems and delivering high levels of availability through proactive service management and advanced technical response. Hardware problem resolution to return the hardware in operating condition within 6 hours of the initial service request. A Technical Account Manager, as your single point of contact, will own your call or issue end to end until resolved.

<http://h20195.www2.hp.com/v2/GetPDF.aspx/4AA3-8855EEE.pdf>

HP Installation and Startup Service for HP BladeSystem c-Class Infrastructure for c7000 enclosure

Provides for hardware installation (c-Class ProLiant and Integrity server blades, storage blades, Ethernet Interconnects and Virtual Connect) and software installation and startup of a BladeSystem c7000 Infrastructure in a single enclosure including deployment of OS (two servers), HP Insight Control and Server Deployment (formerly RDP).

<http://h20195.www2.hp.com/V2/GetPDF.aspx/4AA0-5964ENW.pdf>

HP Installation and Startup Service for HP BladeSystem c-Class Enhanced Network

HP Provides for the configuration and testing of BladeSystem Ethernet interconnect switches and Virtual Connect to facilitate proper implementation of network protocols and access to advanced features.

<http://h20195.www2.hp.com/V2/GetPDF.aspx/4aa0-5969ENW.pdf>

Standard Care

3-Year HP 24x7 4 hour response, Proactive Care Service

This service gives you combined reactive and proactive support including rapid access to our Advanced Solution Center to manage and prevent problems and a Technical Support Specialist with a broad level of technical knowledge that will engage with additional technical expertise as needed from HP's vast global resources.

<http://h20195.www2.hp.com/v2/GetPDF.aspx/4AA3-8855EEE.pdf>

HP Installation and Startup Service for HP BladeSystem c-Class Infrastructure for c7000 enclosure

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QuickSpecs

HP Virtual Connect 8Gb 20-Port Fibre Channel Module for c-Class BladeSystem

Service and Support, HP Care Pack and Warranty Information

<http://h20195.www2.hp.com/V2/GetPDF.aspx/4AA0-5964ENW.pdf>

HP Installation and Startup Service for HP BladeSystem c-Class Enhanced Network

HP Provides for the configuration and testing of BladeSystem Ethernet interconnect switches and Virtual Connect to facilitate proper implementation of network protocols and access to advanced features.

<http://h20195.www2.hp.com/V2/GetPDF.aspx/4aa0-5969ENW.pdf>

Related Services

HP Proactive Care Personalized Support - Environmental Option

The Personalized Support option provides an assigned Account Support Manager who can bring best practices from across the industry plus extra technical skills to your IT team. This option is only available as an add-on to HP Proactive Care Support.

HP Proactive Select Service

Provides a flexible way to purchase HP best-in-class consultancy and technical services. You can buy Proactive Select Service Credits when you purchase your hardware and then use the credits over the next 12 months. <http://h20195.www2.hp.com/V2/GetPDF.aspx/4AA2-3842ENN.pdf>

Additional HP Care Pack services can be found at: <http://www.hp.com/go/cpc>

Insight Online/Insight Remote Support

HP Insight Remote Support provides 24 X 7 remote monitoring, proactive notifications, and problem resolution. This comes at no additional cost with your HP solution. Learn more about Insight Remote Support <http://www.hp.com/go/insightremotesupport> and Insight Online

<http://www.hp.com/go/insightonline>

NOTE: Insight Remote Support is a prerequisite for Proactive Care. All blades within a single HP BladeSystem enclosure must be at the same service level.

HP Support Center

Personalized online support portal with access to information, tools and experts to support HP business products. Submit support cases online, chat with HP experts, access support resources or collaborate with peers. Learn more <http://www.hp.com/go/hpsc>

HP's Support Center Mobile App allows you to resolve issues yourself or quickly connect to an agent for live support. Now, you can get access to personalized IT support anywhere, anytime. HP Insight Remote Support and HP Support Center are available at no additional cost with a HP warranty, HP Care Pack or HP contractual support agreement.

NOTE: HP Support Center Mobile App is subject to local availability.

Parts and materials

HP will provide HP-supported replacement parts and materials necessary to maintain the covered hardware product in operating condition, including parts and materials for available and recommended engineering improvements.

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

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

Warranty

Server Blade Interconnect Limited Warranty includes 1 year Parts, 1 year Labor, 1-year on-site support. Additional information regarding worldwide limited warranty and technical support is available at: <http://h18004.www1.hp.com/products/servers/platforms/warranty/index.html>

For more information

To learn more on HP ProLiant servers and HP BladeSystem servers, please contact your HP sales representative or HP Authorized Channel Partner. Or visit: www.hp.com/services/bladesystem



QuickSpecs

HP Virtual Connect 8Gb 20-Port Fibre Channel Module for c-Class BladeSystem

Related Options

Optional Network Cabling

Hardware

8Gb Optical Transceivers (SFP+)

Short Wave

HP 8Gb Shortwave B-series Fibre Channel 1 Pack SFP+ Transceiver AJ716B

HP 8Gb Short Wave Fibre Channel SFP+ 1 Pack AJ718A

Long Wave

HP 8Gb Long Wave B-series 10km Fibre Channel 1 Pack SFP+ Transceiver AJ717A

4Gb Optical Transceivers (SFPs)

Short Wave

HP 4Gb Short Wave B-series Fibre Channel 1 Pack SFP Transceiver AJ715A

Long Wave

HP 4Gb Long Wave B-series 30km Fibre Channel SFP Transceiver 1 Pack AN211A

Service and Support Offerings

NOTE: HP Care Pack services for the c7000 and c3000 Enclosures cover the enclosure, power supplies and fans. HP Virtual Connect 8Gb 20-Port Fibre Channel Modules for c-Class BladeSystem are also covered by the c7000 and c3000 enclosures Care Pack services

NOTE: Some options, including Fibre Channel and InfiniBand switches for the HP c-Class BladeSystem, are not covered under the c7000/c3000 enclosure Care Packs and carry separate Care Packs. Care Pack service level support for these options should always be uplifted to match existing storage or server service level.

Proactive Care Services for the c7000 Enclosure

HP 3 year 4 hour 24x7 c7000 Enclosure Proactive Care Service U3C33E

HP 3 year 6 hour Call To Repair 24x7 c7000 Enclosure Proactive Care Service U3C36E

HP 3 year 4 hour 24x7 c7000 Enclosure with Insight Control Proactive Care Service U3P10E

HP 3 year 6 hour Call To Repair 24x7 c7000 Enclosure with Insight Control Proactive Care Service U3P13E

Proactive Care Services for the c3000 Enclosure

HP 3 year 4 hour 24x7 c3000 Enclosure Proactive Care Service U3C42E

HP 3 year 6 hour Call To Repair 24x7 c3000 Enclosure Proactive Care Service U3C45E

HP 3 year 4 hour 24x7 c3000 Enclosure with Insight Control Proactive Care Service U3P19E

HP 3 year 6 hour Call To Repair 24x7 c3000 Enclosure with Insight Control Proactive Care Service U3P22E

HP Proactive Care Personalized Support (Environmental Option)

HP 3yr Provides annual personalized proactive supp for existing Proactive Care ISS centric environmt U6W98E

Installation & Start-up Services recommended for the c7000

HP Startup Blade System c-Class Infrastructure Service

HP Startup Blade System c-Class Enhanced Network Service

Installation & Start-up Services recommended for the c3000

HP Startup c3000 with Insight Control and Operating System and Server Blade Service UF817E

HP Startup BladeSystem c3000 + Operating System Service UF818E



QuickSpecs

HP Virtual Connect 8Gb 20-Port Fibre Channel Module for c-Class BladeSystem

Related Options

HP Startup BladeSystem c3000 Enclosed Network Service

UF814E

Additional HP Care Pack services can be found at:

<http://www.hp.com/go/cpc>

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HP Virtual Connect 8Gb 20-Port Fibre Channel Module for c-Class BladeSystem

Technical Specifications

Shipping Dimensions	Length	352.55mm (13.88 in)
	Width	270.00mm (10.63 in)
	Height	120.65mm (4.75 in)
Shipping Weight		2.0Kg (4.4 lbs)
Product Specifications Hardware	Performance	Up to 1600 MBps throughput per port Maximum frame size 2148 bytes (2112 byte payload)
	Bandwidth	106 MB, Full Duplex @ 1-Gbps 212 MB, Full Duplex @ 2-Gbps 426 MB, Full Duplex @ 4-Gbps 852 MB, Full Duplex @ 8-Gbps
	Aggregate Bandwidth	Up to 17.04 GB, Full Duplex
	Fabric Latency (intra-switch)	1-Gbps to 1-Gbps < 0.6 µsec 2-Gbps to 2-Gbps < 0.4 µsec 4-Gbps to 4-Gbps < 0.2 µsec 8-Gbps to 8-Gbps < 0.2 µsec
	Number of Fibre Channel Ports	4 external 2/4/8-Gbps ports 16 internal 1/2/4/8-Gbps ports
	External Port Type	Configured as Node Port (N_Port), 2Gb, 4Gb or 8Gb auto- negotiating SFP ports
	Internal Port Type	Configured as Fabric Port (F_Port), 1Gb, 2Gb, 4Gb or 8Gb auto- negotiating ports
	Classes of Service	Class 2 and Class 3 Fibre Channel services
	Scalability	Does not contribute to the total switch limit. See the SAN Design Guide for latest supported configurations.
	Buffer Credits	16 buffer credits per port, ASIC embedded memory
	Connectors and Cabling	SFP optical hot-pluggable transceiver with LC connector Short-Wavelength Laser (SWL) up to 500m (1,640 ft) Long-Wavelength Laser (LWL) up to 10km
	Indicators	Module locator (UID) Module status Link and Activity Port Configuration Status
	Dimensions	Length 10.5in (267.7mm)
		Width 7.5 in (92.79mm)
		Height 1.1 in (27.94mm)
	Weight	1.27 kg (2.8 Lbs)
	Environmental Ranges	Specification 10C to 35C (50F to 95F)
		Temperature Range
		Operating 10C to 35C (50F to 95F)
		Shipping -40C to 60C (-40F to 140F)
		Storage -20°C to 60°C (-4F to 140°F)
		Maximum wet bulb temperature 30C (80F)

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Technical Specifications

Relative humidity (noncondensing)

Operating	10% to 90%
Shipping	10% to 90%
Storage	10% to 95%
Specification	10C to 35C (50F to 95F)
Power Specification	12V @ 3A (36 W)

Product Specifications Software

Industry Standard NPIV Support

The Virtual Connect Fibre Channel module works by aggregating multiple FC HBA ports over a single N-port uplink through the use of N_port_ID virtualization (NPIV). NPIV allows multiple distinguishable identities (multiple port WWNs and port IDs) over a single N-port connection. Most Fibre Channel SAN switch vendors have support for NPIV in their latest firmware release. By conforming to the NPIV standard, SAN equipment interoperability simplified. The Virtual Connect Fibre Channel Module Provides basic 4:1, 8:1, or 16:1 NPIV Fibre Channel concentration.

Data Center Connectivity

Each Virtual Connect Fibre Channel module supports up to 4 SAN fabrics and is typically connected to a Fibre Channel switch that has been configured to run in NPIV mode. The 4 uplink ports are speed selectable from 2, 4, or 8Gb/s.

The setup wizard allows SAN administrators to name the fabric that servers will connect into and set the oversubscription rate. Fibre Channel boot parameters and WWN administration are configurable options that can be integrated into server profiles.

In an NPIV environment, there is an initial brief login function between the Virtual Connect Fibre Channel Module and the data center switch. Once completed, all HBA connections appear as though they are directly connected between the server and the SAN switch. The Virtual Connect Fibre Channel Module appears as a pass-thru device to the SAN, yet cables are reduced as high as 16:1

Management Features

An HP 1/10Gb Virtual Connect Module must be present in order to configure the VC FC Modules. This provides a complete Virtual Connect Environment for the server connections.

Simple and intuitive Graphical User Interface (GUI) for defining, configuring, and managing all elements of the Virtual Connect Domain.

Setup Wizards for initial domain installation and configuration and network and SAN configuration.

Comprehensive administration, definition, and management of Ethernet Networks, Shared Uplink Sets using VLANs, SAN Fabric management, and Server Profiles

Domain Management of user accounts, enclosure, Virtual Connect domain settings, and firmware updates



QuickSpecs

HP Virtual Connect 8Gb 20-Port Fibre Channel Module for c-Class BladeSystem

Technical Specifications

The location and status of Virtual Connect Modules in the HP c-Class Enclosure and Onboard Administrator can be viewed from the Hardware Status page. Including at-a-glance detailed information of the hardware elements via mouse-over pop-up windows.

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

VC manager runs as a high-availability pair when HP 1/10Gb VC-Ethernet Modules are installed in adjacent bays. All configuration data is stored in flash memory and check-pointed to the standby module. Configurations can also be backed up to a workstation via the GUI.

Management and Standards Support

Standards

ANCI T11 N_Port ID Virtualization
FC-PH Rev. 4.3
FC-PH-2
FC-PH-3
FC-AL Rev 4.6
FC-AL-2 Rev 7.0
FC-FLA
FC-GS
FC-GS-2
FC-GS-3
FC-FG
FC-VI
FC Element MIB RFC 2837
Fibre Alliance MIB Version 4.0

Safety and Compliance

Safety Certifications

UL/CUL Recognition to UL/CSA 60950-1
TUV to EN 60950-1
CB report and certificate to IEC 60950-1 with all country deviations
CE Marking

Electromagnetic Emissions Certifications FCC Part 15 Class A

FCC Part 15 Class A
EN 55022 Class A (CISPR22 Class A)
VCCI Class A
AS/NZS 3548 Class A or AS/NZS CISPR22 Class A
MIC Class A
CE Marking



QuickSpecs

HP Virtual Connect 8Gb 20-Port Fibre Channel Module for c-Class BladeSystem

Technical Specifications

Environment-friendly Products and Approach

End-of-life Management and Recycling

Hewlett-Packard offers end-of-life HP product return, trade-in, and recycling programs in many geographic areas. For trade-in information, please go to: <http://www.hp.com/go/green>. To recycle your product, please go to: <http://www.hp.com/go/green> or contact your nearest HP sales office. Products returned to HP will be recycled, recovered or disposed of in a responsible manner.

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 web site at: <http://www.hp.com/go/green>. These instructions may be used by recyclers and other WEEE treatment facilities as well as HP OEM customers who integrate and re-sell HP equipment.

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