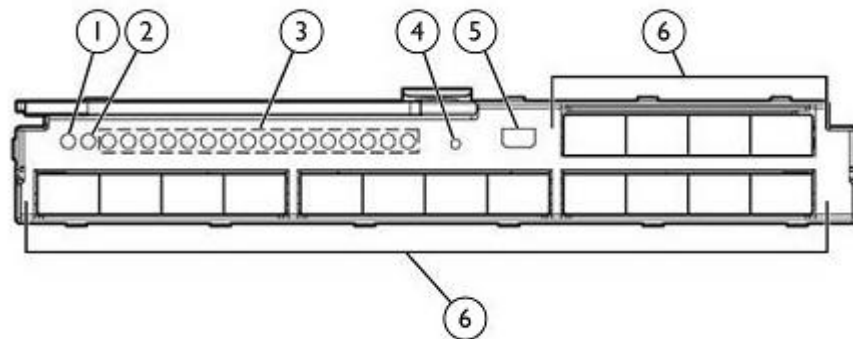


### Overview

#### HPE 10GbE Pass-Thru Module

The HPE 10GbE Pass-Thru Module is designed for c-Class BladeSystem and HPE Integrity Superdome 2 customers requiring a non-blocking, one-to-one connection between each server and the network. The pass-thru module provides 16 uplink ports that accept both SFP and SFP+ connectors.

The HPE 10GbE Pass-Thru Module can support 1Gb and 10Gb connections on a port by port basis. Optical as well as Direct Attach Copper (DAC) cables are also supported. Both standard Ethernet as well as Converged Enhanced Ethernet (CEE) traffic to an FCoE capable switch is possible when using the appropriate NIC or adapter module.



**HPE 10GbE Pass-Thru Module**

- |   |  |
|---|--|
| 1. UID LED                                  | 4. Reset Button  |
| 2. Health LED                               | 5. Mini USB RS-232 management port   |
| 3. Ethernet port link status and speed LEDs | 6. Uplinks ports that accept SFP and SFP+ transceiver modules and Direct Attach Cables (DAC) |

### What's New

- Support for HPE ProLiant G7 servers
- Support for Converged Network Adapters

### At A Glance

#### Performance:

- 16 direct server to network connections
- Auto-sense 1Gb or 10Gb operation on a port by port basis
- Supports standard Ethernet as well as Converged Enhanced Ethernet
- Supports all NICs and mezzanine adapters including Flex Adapters

#### Management:

- No management required
- Module performance monitored by the On-Board Administrator
- Front panel or OA access for service and test and firmware updates

## Models and Options

### Models

HP 10GbE Ethernet Pass-Thru Module for c-Class BladeSystem

538113-B21

HP 10GbE Pass-Thru Interconnect Module

AT084A

## Compatibility

### HPE ProLiant Servers

- HPE ProLiant BL2x220c G7
- HPE ProLiant BL2x220c G5
- HPE ProLiant BL260c G5
- HPE ProLiant BL280c G6
- HPE ProLiant BL420 Gen8
- HPE ProLiant BL460c
- HPE ProLiant BL460c G5
- HPE ProLiant BL460c G6
- HPE ProLiant BL460c G7
- HPE ProLiant BL460c Gen8
- HPE ProLiant BL460c Gen9
- HPE ProLiant WS460c Gen8
- HPE ProLiant WS460c Gen9
- HPE ProLiant BL465c
- HPE ProLiant BL465 G5
- HPE ProLiant BL465 G6
- HPE ProLiant BL465 G7
- HPE ProLiant BL465 Gen8
- HPE ProLiant BL480c
- HPE ProLiant BL490c G7
- HPE ProLiant BL490c G6
- HPE ProLiant BL495c G5
- HPE ProLiant BL495c G6
- HPE ProLiant BL620c G7
- HPE ProLiant BL660c Gen8
- HPE ProLiant BL660c Gen9
- HPE ProLiant BL680c
- HPE ProLiant BL680c G7
- HPE ProLiant BL685c
- HPE ProLiant BL685 G5
- HPE ProLiant BL685 G6
- HPE ProLiant BL685 G7

**NOTE:** Some servers listed above may be discontinued

### HPE Integrity Servers

- HPE Integrity BL860c
- HPE Integrity BL860c i2
- HPE Integrity BL870c
- HPE Integrity BL870c i2
- HPE Integrity BL890c i2

### HPE Superdome Servers

- HPE Superdome 2 - 8s Server
- HPE Superdome 2 - 8s Promotional Server
- HPE Superdome 2 - 16s Server

### ProLiant BL c-Class Server Blade Enclosures

- HPE BladeSystem c3000 Enclosure
- HPE BladeSystem c7000 Enclosure

## Compatibility

### HPE c-Class

#### Mezzanine Adapters

- HPE NC325m PCI Express Quad Port 1Gb Server Adapter
- HPE NC326m PCI Express Dual Port 1Gb Server Adapter
- HPE NC360m Dual Port 1GbE BL-c Adapter
- HPE NC364m Quad Port 1GbE BL-c Adapter
- HPE NC373m PCI Express Dual Port Multifunction Gigabit Server Adapter
- HPE NC382m PCI Express Dual Port Multifunction Gigabit Server Adapter
- HPE NC522m Dual Port Flex-10 10GbE Multifunction BLc Adapter
- HPE NC530m HPE Flex-10 10Gb 2-port 530M Adapter
- HPE NC532m Dual Port Flex-10 10GbE Multifunction BLc Adapter
- HPE NC542m Dual Port Flex-10 10GbE Multifunction BLc Adapter
- HPE NC550m Dual Port Flex-10 10GbE Multifunction BLc Adapter
- HPE NC552m Dual Port Flex-10 10GbE Multifunction BLc Adapter
- HPE NC551m Dual Port FlexFabric 10Gb Network Adapter
- HPE NC544m HPE InfiniBand QDR/Ethernet 10Gb 2P 544M Adapter
- HPE NC554m HPE FlexFabric 10Gb 2-port 554M Adapter
- QLogic QMH4062 1GbE iSCSI Adapter for HPE BladeSystem c-Class

**NOTE:** Some adapters listed above may be discontinued.

### Cabling and Transceivers

#### SFP+ Direct attached cables:

- HPE 1m SFP+ 10GbE Copper Cable
- HPE 3m SFP+ 10GbE Copper Cable
- HPE 5m SFP+ 10GbE Copper Cable
- HPE 7m SFP+ 10GbE Copper Cable
- HPE 10-GbE SFP+-SFP+ 1m Direct Attach Cable
- HPE 10-GbE SFP+-SFP+ 3m Direct Attach Cable
- HPE 10-GbE SFP+-SFP+ 7m Direct Attach Cable

**NOTE:** The above cables have been tested and verified to work with the HPE 10GbE Pass-Thru Module. However, the module will accept cables from any vendor. Hewlett Packard Enterprise does not guarantee the performance of non HPE cables and users may receive a warning message via the CLI when a non verified cable has been inserted.

#### Transceivers:

- HPE BladeSystem 10Gb SR SFP+
- HPE BladeSystem 10Gb LR SFP+
- HPE BladeSystem 10Gb LRM SFP+
- HPE BladeSystem 1Gb SX SFP Opt Kit
- HPE BladeSystem 1Gb RJ-45 SFP Opt Kit

**NOTE:** Only HPE transceivers listed above may be used in the HPE 10GbE Pass-Thru Module.

## Compatibility Matrix

Downlink Server LOM or Mezzanine port	Installed uplink port transceiver or cable	Supported port speed
NC522m NC530m NC532m NC532i NC542m NC544m NC550m NC552m	10Gb SR SFP+ 10Gb LR SFP+ 10Gb LRM SFP+ HPE 1m SFP+ 10GbE Copper Cable HPE 3m SFP+ 10GbE Copper Cable HPE 5m SFP+ 10GbE Copper Cable HPE 7m SFP+ 10GbE Copper Cable	10Gb
NC551m NC551i NC553i NC554m	10Gb SR SFP+ 10Gb LR SFP+ 10Gb LRM SFP+ HPE 1m SFP+ 10GbE Copper Cable HPE 3m SFP+ 10GbE Copper Cable HPE 5m SFP+ 10GbE Copper Cable HPE 7m SFP+ 10GbE Copper Cable	10Gb Ethernet  10Gb Converged Fabric
NC522m NC530m NC532m NC532i NC542m NC550m NC552m NC551m/i NC553i NC325m NC326m NC360m NC364m NC373m NC382m QLogic QMH4062 All HPE ProLiant Generation 5 (G5) and earlier servers	1Gb SX SFP Opt Kit 1Gb RJ-45 SFP Opt Kit	1Gb
NC325m NC326m NC360m NC364m NC373m NC382m QLogic QMH4062, All HPE ProLiant Generation 5 (G5) and earlier servers (except HPE ProLiant BL495c G5)	10Gb SR SFP+ 10Gb LR SFP+ 10Gb LRM SFP+ HPE 1m SFP+ 10GbE Copper Cable HPE 3m SFP+ 10GbE Copper Cable HPE 5m SFP+ 10GbE Copper Cable HPE 7m SFP+ 10GbE Copper Cable	Not supported

**NOTE:** Some options listed above may be discontinued.

## Service and Support

### Service and Support HPE Technology Services

HPE Technology Services offers you consultants and support experts to solve your most complex infrastructure problems. We help keep your business running, boost availability and avoid downtime.

Protect your business beyond warranty with HPE Care Pack Services

- When you buy HPE Options, it's also a good time to think about what level of service you may need. HPE Care Pack services provide total care and support expertise with committed response choices designed to meet your IT and business need.

### Recommended Services

#### **Recommended HPE Care Pack Services for optimal satisfaction with your HPE product 3-Year HPE 24x7 4 hour Response, Hardware Support Onsite Service**

Provides you with rapid remote support and if required an Hewlett Packard Enterprise authorized representative who will arrive on site any time and day of the year to begin hardware maintenance service within 4 hours of the service request being logged.

<http://h20195.www2.hp.com/V2/GetPDF.aspx/5982-6547EEE>

#### **HPE ProLiant Server Hardware Installation**

Provides for the basic hardware installation of Hewlett Packard Enterprise branded servers, storage devices and networking options 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>

### Related Services

#### **Related HPE Care Pack Services to enhance your HPE product experience 3-Year HPE 6 hour Hardware Support Onsite Call-to-Repair Service**

Provides an IT manager with a team of support specialists who will quickly begin troubleshooting the system to help return the hardware to operating condition within 6 hours of the initial service request to the HPE Global Solution Center.

<http://h20195.www2.hp.com/V2/GetPDF.aspx/5982-6547EN.pdf>

#### **HPE Proactive Select Service**

Provides a flexible way to purchase Hewlett Packard Enterprise 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>

### Insight Remote Support

Delivers secure remote monitoring and support for Hewlett Packard Enterprise servers and storage, 24x7 at no additional cost. Available as part of Hewlett Packard Enterprise Warranty, Care Pack and Service Contract offers.

### Parts and materials

Hewlett Packard Enterprise will provide HPE-supported replacement parts and materials necessary to maintain the covered hardware product in operating condition, including parts and materials for available and recommended engineering improvements. Supplies and consumable parts will not be provided as part of this service; standard warranty terms and conditions apply. Parts and components that have exceeded their maximum supported lifetime and/or the maximum usage limitations as set forth in the manufacturer's operating manual or the technical product data sheet will not be provided, repaired or replaced as part of this service.

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## Service and Support

**Service limitation**    **Limitations to the defective media retention service feature option**

The defective media retention service feature option applies only to Disk or eligible SSD/Flash Drives replaced by Hewlett Packard Enterprise due to malfunction. It does not apply to any exchange of Disk or SSD/Flash Drives that have not failed. SSD/Flash Drives that are specified by Hewlett Packard Enterprise as consumable parts and/or that have exceeded maximum supported lifetime and/or the maximum usage limit as set forth in the manufacturer's operating manual or the technical data sheet are not eligible for the defective media retention service feature option.

**For more information**

To learn more on services for HPE ESSN Options, please contact your Hewlett Packard Enterprise sales representative or Hewlett Packard Enterprise Authorized Channel Partner. Or visit:

**<http://www.hp.com/services/proliant> or [www.hp.com/services/bladesystem](http://www.hp.com/services/bladesystem)**

## Related Options

### Cabling and Transceivers

#### SFP+ Direct attached cables

HP BladeSystem c-Class 10GbE SFP+ to SFP+ 1m Direct Attach Copper Cable	487652-B21
HP BladeSystem c-Class 10GbE SFP+ to SFP+ 3m Direct Attach Copper Cable	487655-B21
HP BladeSystem c-Class 10GbE SFP+ to SFP+ 5m Direct Attach Copper Cable	537963-B21
HP BladeSystem c-Class 10GbE SFP+ to SFP+ 7m Direct Attach Copper Cable	487658-B21

#### Transceivers

HP BladeSystem c-Class 10Gb SFP+ SR Transceiver	455883-B21
HP BladeSystem c-Class 10Gb SFP+ LR Transceiver	455886-B21
HP BladeSystem c-Class 10Gb SFP+ LRM Transceiver	455889-B21
HP BladeSystem c-Class Virtual Connect 1G SFP SX Transceiver	453151-B21
HP BladeSystem c-Class Virtual Connect 1G SFP RJ-45 Transceiver	453154-B21

### Service and Support Offerings

(HPE Care Pack Services)

**NOTE:** HPE Care Pack services for the c7000 and c3000 Enclosure cover the enclosure, power supplies and fans. HPE qualified rack options are covered by these services when installed within the same rack. Hewlett Packard Enterprise supported c-Class enclosure devices including pass thru, Ethernet interconnect and virtual connect modules are also covered by the c7000 and c3000 enclosure Care Pack services.

**NOTE:** SAN/Fabric switches for the HPE c-Class BladeSystem are not covered under the c7000 and c3000 enclosure Care Packs, SAN/Fabric switches carry separate Care Packs. SAN/Fabric Switch Care Pack service level support should always be uplifted to match existing storage or server service level.

#### Hardware Support Services On-site Service

HP 3 year Next business day c7000 Enclosure Hardware Support	UE477E
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**NOTE:** Uplifts the Ethernet devices to the same level of warranty as the c-class enclosure.

HP 3 year 4 hour 24x7 c7000 Enclosure Hardware Support	UE479E
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#### Installation & Start-up Services

HP Startup BladeSystem c7000 Infrastructure Service	UE602E
HP Enhanced Network Installation and Startup Service for HP BladeSystem	UE603E
HP Install c-Class Server Blade Service	UE493E
HP Hardware Install c-Class Enclosure and Server Blade Service	UE494E

**NOTE:** For more information, customer/resellers can contact:

**<http://www.hp.com/services/bladessystemservices>**



## Technical Specifications

<b>Shipping Dimensions</b>	<b>Length</b>	11.42 in (290 mm)	
	<b>Width</b>	14.49 in (368 mm)	
	<b>Height</b>	2.36 in. (60 mm)	
<b>Shipping Weight</b>		2.1 kg (4.6 lbs)	
<b>Product Specifications Hardware</b>	<b>Performance</b>	320 Gbps external port bandwidth per module Measured latency under 536nS per port @ 10Gb Line rate 10Gb full-wire speed performance Auto-negotiation and auto-sensing with full-duplex support	
	<b>Connectors and Cabling</b>	Uplink Ports	16 SFP/SFP+ Modules
		Management	Mini-USB Management
	<b>Network Transfer Rate</b>	1 Gbps Port (2,000 Mbps full duplex)	
		10 Gbps port (20,000 Mbps full duplex)	
	<b>LED Indicators</b>	UID LED	Blue light on module is activated. Blue light off module is deactivated.
		Health LED	Off: The pass-thru module is powered off. Green: The pass-thru module is powered up, and all ports match. Amber: An issue exists, such as a port mismatch.
		Ethernet port	Green Link is 10G Flashing green 10G link activity is detected
			Amber Link is 1G Flashing amber 1G link activity is detected. Flashing alternately green and amber A link mismatch condition exists.
	<b>Product Dimensions</b>	Length	10.5 in (267.7 mm)
		Width	7.5 in (192.79 mm)
		Height	1.1 in (27.94mm)
	<b>Product Weight</b>		1.6 kg (3.97 lbs)
<b>Environmental Ranges</b>	Operating Temperature	50° to 95° F (10° to 35° C)	
	Non-operating Temperature	-40° to 158° F (-40° to 70° C)	
	Relative Humidity (non-condensing)	Operating 5% to 95%	
<b>Power Specification</b>	Power Requirements	12VDC: 6.3A, 68W maximum	
<b>Safety and Compliance</b>		TUV to UL 60950-1, and CAN/CSA C22.2 No. 60950-1 and to EN 60950-1	
		CE Marking	
<b>Safety Certifications</b>		RoHS 6/6 compliant	
<b>Electromagnetic Emissions</b>		FCC Part 15 Class A	
		EN 55022: 1998 (CISPR22)	
<b>Certifications FCC Part 15 Class A</b>		EN 55024: 1998 (CISPR24)	
		VCCI Class A	
		AS/NZS 3548 Class A CE CNS 13438 Class A MIC	

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## Technical Specifications

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MIC

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### Environment-friendly Products and Approach

### End-of-life Management and Recycling

Hewlett Packard 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.hp.com/go/green>. To recycle your product, please go to: <http://www.hp.com/go/green> 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.

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.hp.com/go/green>. 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.

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## Summary of Changes

Date	Version History	Action	Description of Change
17-Dec-2015	From Version 8 to 9	Changed	Related Options and Compatibility sections were updated.
		Removed	Obsolete SKUs deleted: UE478E, UE480E
17-Aug-2011	From Version 7 to 8	Changed	Changes made in Compatibility section.
26-Mar-2012	From Version 6 to 7	Changed	HPE ProLiant BL460c Gen8 server was added to Compatibility HPE NC530m HPE Flex-10 10Gb 2-port 520M Adapter, HPE NC544m HPE Infiniband QDR/Ethernet 10Gb 2P 544m Adapter and HPE NC554m HPE FlexFabric 10Gb 2-port 554M Adpater were added to HPE c-Class Mezzanine Options ProCurve 10-GbE SFP+ 1m Direct Attach Cable, ProCurve 10-GbE SFP+ 3m Direct Attach Cable and ProCurve 10-GbE SFP+ 7m Direct Attach Cable were removed from Cabling and Transceivers
20-Jun-2011	From Version 5 to 6	Changed	Model and Related Options product descriptions were revised Mentions of ProCurve were removed
18-Mar-2011	From Version 4 to 5	Changed	Service and Support was completely revised HPE ProLiant BL620c G7 and BL680c G7 were added to HPE ProLiant Servers HPE BladeSystem 10Gb LR SFP+ was added to Cabling and Transceivers
24-Nov-2010	From Version 3 to 4	Added	HPE Integrity 10GbE Pass-Thru Module was added to Models and Options HPE Superdome Servers was added to Compatibility
05-Oct-2010	From Version 2 to 3	Added	HPE ProLiant BL2x220c G7, BL460c G7, BL465 G7, BL490c G7, BL680c G7 and BL685c G7 were added to HPE ProLiant Servers HPE NC550m and NC552m Dual Port Flex-10 10GbE Multifunction BLc Adapters and HPE NC551m Dual Port FlexFabric 10Gb Network Adapter was added to HPE c-Class Mezzanine Adapters and Compatibility Matrix Service and Support was added
22-Jun-2010	From Version 1 to 2	Added	What's New was added to the Overview NOTE was added to HPE c-Class Mezzanine Adapters and Compatibility Matrix HPE Integrity BL860c i2, BL870c i2 and BL890c i2 Server Blades were added

## Summary of Changes



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C04123342 - 13508 - Worldwide - V9 - 17-December-2015