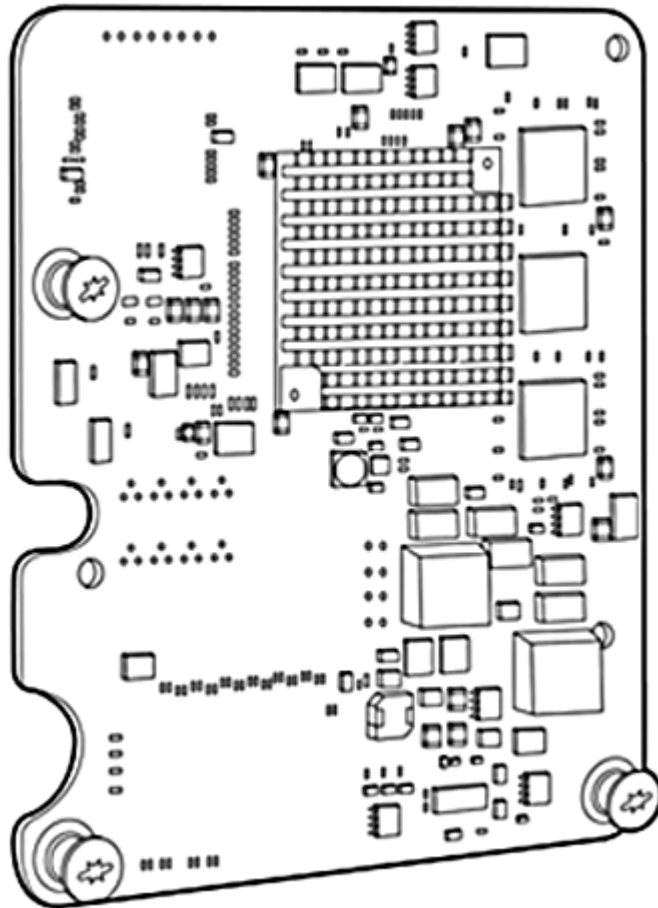


Overview

HP NC532m Dual Port Flex-10 10GbE Multifunction BL-c Adapter

The NC532m is a Flex -10 enabled 10 Gigabit Ethernet network adapter for the ProLiant c-Class BladeSystem. The adapter is a dual port 10GbE mezzanine, that when paired with the new 10Gb Virtual Connect Module provides up to eight physical function NICs that can be configured to operate at any speed from 100Mbps to 10Gbps. The NC532m will also support 10Gb connections when paired with the 6120XG Blade Switch. The adapter ships with support for VLAN tagging, QoS, teaming (bonding), Receive Side Scaling (RSS) and PXE.

The NC532m adapter is supported in most ProLiant c-class server Type I and II mezzanine slots allowing customers to provision their servers with unprecedented bandwidth never before available in a blade.



HP NC532m Dual Port Flex-10 10GbE Multifunction BL-c Adapter

What's New

- Support for BL2x220c G6 server blade

Overview

At A Glance

- Supported per ProLiant c-Class server, in mezzanine slots 2 or 3 (full height servers) or slot 2 (half height servers). Supported in any available slot on G6 and all G7 servers
- Type I Adapter
- Supports HP's exclusive Flex-10 technology
- IEEE 802.1p QoS 802.3x flow control, and 802.3ap 10GBase-KR
- 4K Jumbo frames
- Dual 10Gb ports offer up to 40Gb/s bidirectional theoretical throughput
- Set any bandwidth from 100Mb to 10Gb on up to four "Physical Function" NICs per port

Models

HP NC532m Dual Port 10GbE Multifunction BL-c Adapter

467799-B21

NOTE: The NC532m network adapter card is required for each server blade connecting to a 10Gb interconnect in bays 3-8 (HP BladeSystem c7000 Enclosure) or bays 3-4 (HP BladeSystem c3000 Enclosure)

NOTE: The NC532m requires a minimum of 2 GB of server memory.

NOTE: The NC532m supports linking only at 1000Mbps or 10000Mbps when not connected to the HP Virtual Connect Flex-10 Ethernet Module.

Kit Contents

1. NC532m mezzanine adapter
2. Quick install card
3. Product warranty statement
4. Drivers, user guide, and utilities via: <http://www.hp.com>

Standard Features

HP ProLiant Server Support

- HP ProLiant BL260c G5
- HP ProLiant BL2x220c G5
- HP ProLiant BL2x220c G6
- HP ProLiant BL280c G6
- HP ProLiant BL460c
- HP ProLiant BL460c G5
- HP ProLiant BL460c G6
- HP ProLiant BL460c G7
- HP ProLiant BL465c
- HP ProLiant BL465c G5
- HP ProLiant BL465c G6
- HP ProLiant BL465c G7
- HP ProLiant BL490c G6
- HP ProLiant BL490c G7
- HP ProLiant BL495c G5
- HP ProLiant BL495c G6
- HP ProLiant BL620c G7
- HP ProLiant BL680c G5
- HP ProLiant BL680c G7
- HP ProLiant BL685c
- HP ProLiant BL685c G5
- HP ProLiant BL685c G6
- HP ProLiant BL685c G7

Overview

HP Integrity Server Support

NOTE: Some servers listed above may be discontinued.

- HP Integrity BL860c
- HP Integrity BL860c i2
- HP Integrity BL870c
- HP Integrity BL870c i2
- HP Integrity BL890c i2

Performance

Dual-port 10 Gigabit Ethernet Throughput

The 20,000 Mbps full duplex Ethernet transfer rate per port (40 Gbps aggregate full duplex) delivers outstanding network performance that improves response time and removes bottlenecks required for the next generation data center. Ten Gigabit Ethernet bandwidth is ideal for high performance computing, database clusters, iSCSI storage, storage backups, grid systems, virtualization, server and I/O consolidation, fabric consolidation, and more.

HP Virtual Connect Flex-10 10Gb Ethernet Module for the c-Class BladeSystem

Evolve 10Gb at your own speed! When paired with the HP Virtual Connect Flex-10 10Gb Ethernet Modules, take advantage of the Flex Nics, which are PCI Physical Function devices that are OS independent.

- Server ROM recognizes them as individual NICs
- Speeds can be set per NIC from 100Mb to 10Gbps in 100Mb increments
- Three fold increase in number of network connections per port.
- Up to four physical function NICs per port

Jumbo Frames

The NC532m support for jumbo frames (also known as extended frames) permit up to a 4K byte transmission unit (MTU), which is over 2 times the size of standard 1500 byte Ethernet frame. The use of jumbo frames is a way to achieve higher throughput and better CPU utilization. Jumbo frames are particularly useful for database transfers and tape backups.

802.1p QoS Tagging

IEEE quality of service (QoS) 802.1p tagging allows the adapter to mark or tag frames with a priority level across a QoS-aware network for improved traffic flow.

TCP/IP Stateless Offloading

For overall improved system response, the NC532m supports standard TCP/IP stateless offloading techniques including:

- TCP/IP checksum offload (TCO) moves the TCP and IP checksum offloading from the CPU to the network adapter.
- Large send offload (LSO), also known as TCP segmentation offload (TSO), allows TCP segmentation to be handled by the adapter rather than the CPU.

Performance

Interrupt Coalescence	Interrupt coalescing (interrupt moderation) groups multiple packets, thereby reducing the number of interrupts sent to the host. This process optimizes host efficiency, leaving the CPU available for other duties.
TOE	TCP/IP Offload Engine (TOE) moves the processing of data in the TCP protocol stack from the server CPU to the network card, freeing CPU cycles for other duties.
iSCSI Support	This device supports accelerated iSCSI. iSCSI boot currently not supported.
RDMA	Not supported
Network Adapter Teaming	ProLiant Network Adapter Teaming provides fault tolerance and load balancing across a team of two or more network adapters. The team of adapters works together as a single virtual adapter. Support for several different types of teaming is included. Teaming offers IT professionals an easy, efficient, and cost-effective way to provide network fault tolerance and increased network bandwidth.

Mezzanine Slot Compatibility

Server	Mezz Slot	c7000 Interconnect Bays		c3000 Interconnect Bays		Maximum NC532m 10GbE Ports/Server	Supported Interconnect Modules ²
		NC532m Port 1 ¹	NC532m Port 2 ¹	NC532m Port 1 ¹	NC532m Port 2 ¹		
BL2x220c G5 BL2x220c G6 BL460c G5 BL465c G5	M1	5	6	3	4	Two (2)	<ul style="list-style-type: none"> ● HP Virtual Connect Flex-10 Ethernet Module ● HP 1/10Gb Virtual Connect Ethernet Module ● HP 1/10Gb-F Virtual Connect Ethernet Module ● HP 6120XG Blade Switch ● HP 6120G/XG Blade Switch ● HP 1:10Gb Ethernet BL-c Switch ● Cisco Catalyst 3120G Blade Switch for HP ● Cisco Catalyst 3120X Blade Switch for HP ● Cisco Catalyst 3020 Blade Switch ● HP GbE2c Layer 2/3 Ethernet Blade Switch ● HP 1Gb Ethernet Pass-Thru Module ● HP 10GbE Pass-Thru Module
	M2	7	8	3	4		
BL260c G5	M1	5	6	3	4		
BL280c G6	M2	5	6	3	4		
BL460c G6 BL460c G7 BL465c G6 BL465c G7 BL495c G5 BL495c G6 BL490c G6 BL490c G7	M1	3	4	2	2	Four (4)	
	M2	5	6	3	4		
BL480c BL680c BL680c G5 ² BL680c G7 BL620c G7 BL685c BL685c G5 BL685c G6 BL685c G7 BL860c BL860c i2 BL870c BL870c i2 BL890c i2	M1	3	4	2	2	Six (6) ³	
	M2	5	6	3	4		
	M3	7	8	3	4		
BL680c G7 ⁴	M4	7	8	3	4		
	M5	3	4	2	2		
	M6	1	2	1	1		
	M7	5	6	3	4		

¹ Port numerations can vary by operating system.

² Not supported in M1.

³ Twelve (12) ports supported in the BL680c G7, four (4) ports supported in any server that does not allow the NC532m in M1 (see note #2).

⁴ Although NC532m is supported in seven different BL680c G7 mezzanine slots, the maximum number of NC532m mezzanine cards allowed in the server is six (twelve ports total). Please see the BL680c G7 QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/13742_div/13742_div.html

Mezzanine Slot Compatibility

NOTE: Some servers listed above may be discontinued.

NOTE: Except for the HP Virtual Connect Flex-10 Ethernet Module, HP Virtual Connect Flex Fabric Module, HP 6120XG, HP 10GbE Pass-Thru Module and the Cisco B22 Fabric Extender, all other supported interconnects are limited to 1Gb per port connection.

Service and Support, HP Care Pack, and Warranty Information

Warranty

HP branded hardware options qualified for BladeSystem c-Class and p-Class servers are covered by a global limited warranty and supported by HP Services and a worldwide network of HP Authorized Channel Partners. The HP branded hardware option diagnostic support and repair is available for one year from date of purchase, or the length of the server they are attached to, whichever is greater. Support for software and initial setup is available for 90 days from date of purchase. Additional support may be covered under the warranty or available for an additional fee. Enhancements to warranty services are available through HP Care Pack services or customized service agreements.

Additional information regarding worldwide limited warranty and technical support is available at: <http://h18004.www1.hp.com/products/servers/platforms/warranty/index.html>

Service and Support

HP Technology Services

HP 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 HP Care Pack Services

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

Recommended Services

Recommended HP Care Pack Services for optimal satisfaction with your HP product

3-Year HP 24x7 4 hour Response, Hardware Support Onsite Service

Provides you with rapid remote support and if required an HP 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.pdf>

HP ProLiant Server Hardware Installation

Provides for the basic hardware installation of HP 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/5982-6547EN.pdf>

Related Services

Related HP Care Pack Services to enhance your HP product experience

3-Year HP 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 HP Global Solution Center.

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

HP Proactive Select Service

Service and Support, HP Care Pack, and Warranty Information

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>

Insight Remote Support

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

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. 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.

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 HP 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 HP 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 HP ESSN Options, please contact your HP sales representative or HP Authorized Channel Partner. Or visit: <http://www.hp.com/services/proliant> or www.hp.com/services/bladesystem

Related Options

Additional c-Class BladeSystem Adapters	HP NC325m PCI Express Quad Port Gigabit Server Adapter	416585-B21
	HP NC360m Dual Port 1GbE BL-c Adapter	445978-B21
	HP NC364m Quad Port 1GbE BL-c Adapter	447883-B21
	HP NC382m PCI Express Dual Port Multifunction Gigabit Server Adapter	453246-B21
	HP NC542m Dual Port Flex-10 10GbE BL-c Adapter	539857-B21
Virtual Connect Module	HP Virtual Connect Flex-10 10Gb Ethernet Module for c-Class BladeSystem	455880-B21
HP Switch	HP 6120XG Blade Switch	516733-B21

Technical Specifications

General Specifications	Network processor	Broadcom 57711		
	Data rate	Two ports, each at 20 Gbps full duplex; 40 Gbps aggregate full duplex theoretical bandwidth. Note that each port on the NC532m adapter transmits from the server at only 20 Gbps (theoretical) full duplex.		
	Bus type	PCI Express v2.0 (Gen 2) x8		
	Form factor	The NC532m is a Type I card, however it is not supported in Mezzanine slot one of Gen 1 and Gen 5 servers with the exception of the BL495. It is compatible in any slot on all Gen 6 servers.		
	IEEE Compliance	802.1p, 802.1q, 802.3u, 802.3ad, 802.3ae, 802.3ap (10GBase-KX4), 802.3x and 802.3z		
Power and Environmental Specifications	Operating Temperature	Temperature	0°C to 55°C / 32°F to 131°F	
		Humidity	10% to 90% non-condensing	
	Power requirement	15W		
	Emissions classification	FCC Class A		
	Agency approvals	USA	FCC (CFR 47 part 15) and UL 60950	
		Canada	ICES-003 and CSA60950	
		Japan	VCCI	
		Korea	MIC (RRL), EMC Registration	
		Australia	ACA, AS/NZS3548/EN55022:1998, EN55024:1998	
		European Union	EN55022:1998 (CISPR 22), EN55024:1998, and IEC60950:1999 (EN60950:2000)	
RoHS Compliance	6 of 6			
Safety	UL Mark (USA and Canada)			
	CE Mark			
	EN 60590			
Operating System Support	Microsoft:	Microsoft Windows Server 2008 (32-and 64-bit) Microsoft Windows Server 2008 for Itanium-based Systems Microsoft Windows Server 2003 and R2 Microsoft Windows Server 2003 Web Edition Microsoft Windows Server 2003 Small Business Server Microsoft Windows 2003 Standard (32 and x64) Microsoft Windows 2003 Enterprise (32 and x64)		
	Linux:	RH4 x86 RH4 AMD64EM64T RH5 x86 RH5 AMD64EM64T SLES9 x86 SLES9 AMD64EM64T SLES 10 x86 and AMD64EM64T		
	Novel Netware:			

Technical Specifications

NetWare 6.5
Netware OES (6.5)

NDIS 2 for DOS unattended install (40K or less in size)

Solaris:
Solaris 10 (32- and 64-bit)

Virtualization:
MS Virtual Server support on Windows 2008
VMware ESX3.5

HP-UX:
HP UX 11i v3

NOTE: For more operating system support & certification information, please visit:
<http://h10018.www1.hp.com/wwsolutions/index.html>.

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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