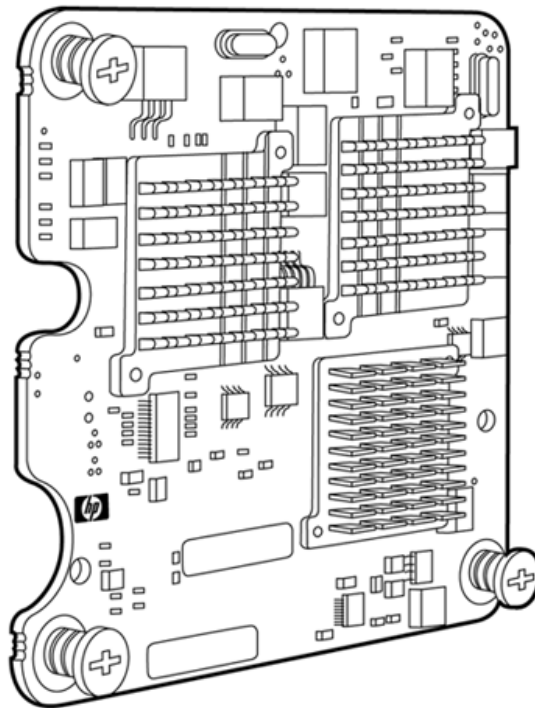


Overview

The HP NC325m features four Gigabit Ethernet ports on a single card, saving valuable server I/O slots for other purposes. The four ports provide the highest port density available for ProLiant BladeSystem servers in a single adapter. The NC325m is ideal for virtualization, security, server consolidation, network segmentation, and other ProLiant server applications requiring maximum throughput and port density. The total aggregate throughput of 4 Gbps meets the needs for customers desiring high bandwidth but are not yet ready to move to 10 Gigabit Ethernet. The x4 PCI Express NC325m is supported on ProLiant c-Class servers in all mezzanine slots. However, if the NC325m is installed in mezzanine slot 1 of a half-height server, connectivity will be provided on only 2 of the 4 ports.

Tested and proven to meet demanding BladeSystem standards, the NC325m ships with the advanced server features that ProLiant customers have come to expect, such as support for failover and load balancing, TCP/IP checksum offloading, large send offloading, Wake-on-LAN, PXE, jumbo frames, VLAN tagging, QoS, and more.



HP NC325m PCI Express Quad Port Gigabit Server Adapter

What's New

- Support for HP ProLiant Generation 6 servers

Overview

At A Glance

- Four Gigabit Ethernet ports
- Supported on ProLiant c-Class servers in all mezzanine slots, multiple cards per server
- Designed with server needs in mind:
 - IEEE 802.1p, 802.1Q, 802.3, 802.3ad, and 802.3x
 - ProLiant Teaming including Network Fault Tolerance, Transmit Load Balancing, and Switch-Assisted Load Balancing
 - 9K industry standard jumbo frames
 - TCP/IP checksum offload (TCO) and large send offload (LSO)
 - Interrupt coalescence and dual address cycles (DAC)
 - Wake-on-LAN (WOL)
 - Pre-boot execution environment (PXE)
 - IPv6 packet transmit and receive (excluding all offload capabilities); IPv6 aware SNMPv1 agent for Windows

Models

HP NC325m PCI Express Quad Port 1Gb Server Adapter

416585-B21

Kit Contents

1. HP NC325m PCI Express Quad Port 1Gb Server Adapter
2. Quick install card
3. Product warranty statement
4. Drivers, user guide, and utilities via <http://www.hp.com>

Standard Features

Server Support

- HP ProLiant BL685c G6
- HP ProLiant BL685c G5
- HP ProLiant BL680c G5
- HP ProLiant BL495c G5
- HP ProLiant BL490c G6
- HP ProLiant BL480c
- HP ProLiant BL465c G5
- HP ProLiant BL460c G6
- HP ProLiant BL460c G5
- HP ProLiant BL460c
- HP ProLiant BL280c G6
- HP ProLiant BL260c G5

Performance

Quad-port Gigabit Ethernet Throughput

Up to 2000 Mbps Ethernet transfer rate full duplex per port (8000 Mbps full duplex, all four ports) delivers outstanding network performance designed to improve response time and remove bottlenecks across the entire network. Four ports on a single adapter are ideal for high density, mezzanine slot constrained blade servers, virtualization and security, applications, server consolidation, and increased network segmentation. The total aggregate throughput of 8 Gbps full duplex also meets the needs for customers desiring high bandwidth but are not yet ready to move to 10 Gigabit Ethernet.

Jumbo Frames

The NC325m support for jumbo frames (also known as extended frames) permit an industry standard 9K byte transmission unit (MTU), which is six times the size of standard 1500 byte Ethernet frame. The NC325m supports jumbo frames as a way to achieve higher throughput and better CPU utilization. Jumbo frames are particularly useful for database transfers and tape backups.

802.1Q VLANs with 802.1p QoS Tagging

IEEE 802.1Q virtual local area network (VLAN) protocol allows each physical port of the NC325m to be separated into multiple virtual NICs for added network segmentation and enhanced security and performance. VLANs increase security by isolating traffic between users. Limiting the broadcast traffic to within the same VLAN domain also improves performance. 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 NC325m supports standard TCP/IP 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) or TCP segmentation offload (TSO) allows the TCP segmentation to be handled by the adapter rather than the CPU.

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.

Dual Address Cycles

Dual address cycles (DAC) provide the ability to address memory above 4 GB and improve system performance by preventing the server operating system from performing a buffer copy from below 4 GB to above 4 GB.

High Availability

Quad port

The four ports on the NC325m are transmitted to up to four separate enclosure interconnect bays providing redundant signal paths.

Redundant adapters

With multiple quad port adapters supported per server connected to up to two redundant pairs of interconnect modules per enclosure, a very wide variety of high availability I/O configurations are possible.

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. For more information, refer to the ProLiant Network Adapter Teaming Whitepaper available at home page at: <http://bizsupport.austin.hp.com/bc/docs/support/SupportManual/c01415139/c01415139.pdf>

Mezzanine Slot and Interconnect Compatibility

Server	Mezz Slot	c7000 Interconnect Bays				c3000 Interconnect Bays				Maximum NC325m Ports/ Server	Supported Interconnect Modules ²
		NC325m Port 1 ¹	NC325m Port 2 ¹	NC325m Port 3 ¹	NC325m Port 4 ¹	NC325m Port 1 ¹	NC325m Port 2 ¹	NC325m Port 3 ¹	NC325m Port 4 ¹		
BL260c G5	M1	5	6	7	8	3	4	3	4	Four (4)	<ul style="list-style-type: none"> • HP Virtual Connect Flex-10 10GB Ethernet Module for BladeSystem c-Class • HP 1/10Gb Virtual Connect Ethernet Module • HP 1/10Gb-F Virtual Connect Ethernet Module • HP 1:10Gb Ethernet BL-c Switch • Cisco Catalyst 3020 Blade Switch • Cisco Catalyst 3120G Blade Switch • Cisco Catalyst 3120X Blade Switch • HP GbE2c Layer 2/3 Ethernet Blade Switch • HP 1Gb Ethernet Pass-Thru Module
BL280c G6	M1 ³	3	4	Not supported		2	2	Not supported		Six (6)	
BL460c G5		M2	5	6	7	8	3	4	3		
BL460c G6	5		6	7	8	3	4	3	4		
BL465c G5	5		6	7	8	3	4	3	4		
BL490c G6	5		6	7	8	3	4	3	4		
BL495c G5	M2	5	6	7	8	3	4	3	4	Twelve (12)	
BL480c G5	M1	3	4	3	4	2	2	2	2		
BL680c G5	M1	3	4	3	4	2	2	2	2		
BL685c G5	M2	5	6	7	8	3	4	3	4	Twelve (12)	
BL685c G5	M3	7	8	5	6	3	4	3	4		

¹ Port numerations can vary by operating system.

² For purchase of the Interconnect Modules referenced above; please see the related options section of this QuickSpecs.

³ If the NC325m is installed in mezzanine slot 1 (M1) of the listed half-height servers, connectivity will be provided on only two of the four ports.

Related Options

c-Class BladeSystem Interconnect Modules	HP Virtual Connect Flex-10 10Gb Ethernet Module for the c-Class BladeSystem	455880-B21
	HP 1:10 Gb Ethernet BL-c Switch	438031-B21
	HP 1/10Gb-F Virtual Connect Ethernet Module for c-Class BladeSystem	447047-B21
	HP 1/10Gb Virtual Connect Ethernet Module for c-Class BladeSystem	399593-B22
	Cisco Catalyst Blade Switch 3120G for HP	451438-B21
	Cisco Catalyst Blade Switch 3120X for HP	451439-B21
	Cisco Catalyst 3020 Blade Switch	410916-B21
	HP GbE2c Layer2/3 Ethernet Blade Switch for c-Class BladeSystem	438030-B21
	Ethernet Pass-Through Module for HP BladeSystem	406740-B21

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>.

Support Services

The HP Care Pack service for ProLiant BL c-Class and p-Class server blades cover the server blade and all HP branded hardware options qualified for the server, purchased at the same time or afterwards, internal to the server. HP Care Pack Services provide total care and support expertise with committed response designed to meet your IT and business needs.

To fully capitalize on the capabilities of your HP BladeSystem servers, a service partner is required who thoroughly understands your server technology and systems environment. HP Services, an industry leader in the provisioning of multi vender support solutions, provides a range of support services designed to meet the varying needs of today's businesses. Whether an SMB or large global corporation, HP has a BladeSystem server support offer to help you rapidly deploy and maximize system uptime.

Recommended Service - Simplify BladeSystem solution implementation, maintenance, and management.

- **Support** - 3 year 4 hour response 24x7 same business day coverage.
- **Deployment Service** - Installation and start up for HP BladeSystem Infrastructure.

Enhanced Service - Optimum service level to increase IT performance and availability.

- **Support** - 1 year HP Proactive BladeSystem Service.
- **Deployment Service** - Enhanced Network Installation and start up for HP BladeSystem Switches.

Installation & Start-Up service for HP BladeSystem Infrastructure plus HP BladeSystem Enhanced Network Installation and Start-UP as per the Customer Description and/or Data Sheet. To be delivered on a scheduled basis 8am-5pm, M-F, excluding HP holidays.

For a complete listing of service offerings and information visit:

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

<http://www.hp.com/go/proliant/carepack>

Technical Specifications

General Specifications	Network processor	Two Broadcom 5715S		
	Data rate	Four ports, each at 2000 Mbps full duplex (theoretical maximum) NOTE: The NC325m adapter transmits from the server at only 2 Gbps full duplex per port.		
	Bus type	x4 PCI Express 1.0		
	Form factor	Type I mezzanine card compatible with all ProLiant and Integrity c-Class servers listed in the Supported Servers section of this QuickSpecs, all mezzanine slots. Multiple cards per server. NOTE: If the NC325m is installed in mezzanine slot 1 of a half-height server (excluding the BL260c G5), connectivity will be provided on only 2 of the 4 ports.		
Power and Environmental Specifications	IEEE Compliance	802.1p, 802.1Q, 802.3, 802.3ad, and 802.3x		
	Operating	Temperature	50° - 95° F (10° - 35° C)	
		Humidity	10% to 90% non-condensing	
	Non-operating	Temperature	-40° to 158° F (-40° to 70° C)	
		Humidity	5% to 95% non-condensing	
	Power requirement	15 Watts maximum		
	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	5 of 6			
Safety	UL Mark (USA and Canada)			
	CE Mark			
	EN 60590			
Operating System Support	<ul style="list-style-type: none">• Microsoft Windows 2003 and 2008 (32-bit and 64-bit)• Red Hat Enterprise Linux• SUSE Linux Enterprise Server• Novell NetWare 6.5• Novell Open Enterprise Server x86			

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

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.
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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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