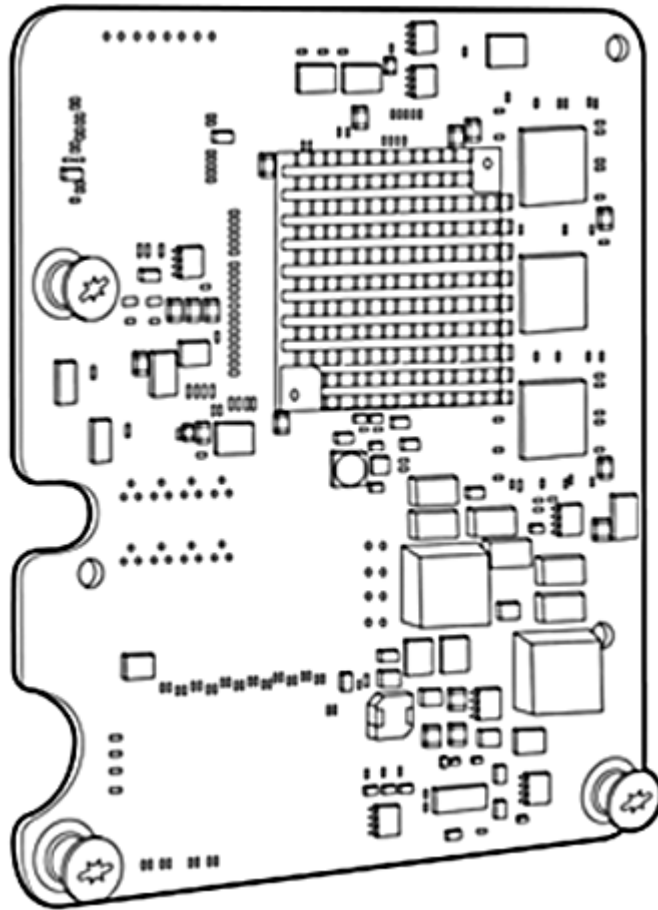


Overview

HP NC512m Dual Port 10GbE Multifunction BL-c Adapter

The NC512m is a dual port 10 Gigabit Ethernet network server adapter for ProLiant c-Class BladeSystem. It offers the highest bandwidth available in a ProLiant Ethernet c-Class adapter. In addition to standard layer 2 10 Gigabit Ethernet communication, this Multifunction server adapter provides stateful TCP offloading (TCP/IP offload engine or TOE) for Linux. The NC512m also ships with support for stateless TCP offloading (LSO and TCP checksum), 802.1p QoS, 8K jumbo frames, interrupt coalescence, and more.

One NC512m adapter is supported per ProLiant c-Class server in mezzanine slot 2 or 3 (full height servers) and slot 2 (half height servers) providing up to thirty-two (32) 10 Gigabit Ethernet adapter ports per c7000 enclosure and sixteen (16) per c3000 enclosure.



HP NC512m Dual Port 10GbE Multifunction BL-c Adapter

What's New

- NC512m maximum memory support doubled to 64 GB for Linux environments.

Overview

At A Glance

- Dual 10 Gigabit Ethernet ports
- One adapter supported per ProLiant c-Class server, in mezzanine slot 2 or 3 (full height servers) or slot 2 (half height servers)
- Up to thirty-two (32) 10 Gigabit Ethernet adapters ports per c7000 enclosure and sixteen (16) per c3000 enclosure.
- Stateful Linux TCP offloading (TCP/IP offload engine) via the Netxen Linux Socket Acceleration™ with Selective Acceleration™
- Stateless TCP offloading including TCP/IP checksum offload (TCO) and large send offload (LSO)
- IEEE 802.1p QoS 802.3x flow control, and 802.3ap 10GBase-KX4
- 8K Jumbo frames
- Interrupt coalescence

Models

HP NC512m Dual Port 10GbE Multifunction BL-c Adapter

440910-B21

NOTE: An NC512m network adapter card is required for each server blade connecting to the HP 10Gb Ethernet BL-c Switch.

NOTE: A maximum of one NC512m is supported per server in a type II mezzanine slot. For more information, see the Mezzanine Slot Compatibility matrix within this document.

NOTE: The NC512m requires a minimum of 2 GB of server memory per NC512m card and supports a maximum of 32 GB for Windows and 64 GB for Linux.

NOTE: Each port on the NC512m transmits from the server only at 20 Gbps full duplex.

Kit Contents

1. NC512m mezzanine 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 BL260c G5
- HP ProLiant BL460c
- HP ProLiant BL465c
- HP ProLiant BL465 G5
- HP ProLiant BL480c
- HP ProLiant BL680c G5
- HP ProLiant BL685c
- HP ProLiant BL685 G5

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. Note that each port on the NC512m transmits from the server only at 20 Gbps full duplex.

Linux Socket Acceleration

The NC512m includes the Netxen Linux Socket Acceleration (LSA) technology providing stateful TCP/IP offloading for Linux also known as a TCP/IP offload engine or TOE. LSA is a unique firmware-based stateful TCP offloading solution for Linux. Since LSA is firmware based, it is installed similar to a loadable driver; no changes to the operating system or applications are required. LSA includes the Netxen Selective Acceleration (SA). SA is a command line interface (CLI) that allows users to control which applications are accelerated (i.e. which applications use LSA).

Jumbo Frames

The NC512m support for jumbo frames (also known as extended frames) permit up to an 8K byte transmission unit (MTU), which is over five 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 NC512m 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.

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.

Mezzanine Slot Compatibility

Server	Mezzanine Slot ¹	c7000 Interconnect Bays		c3000 Interconnect Bays		Maximum 10GbE Ports/Server ³	Supported Interconnect Modules ⁴
		NC512m Port 1 ²	NC512m Port 2 ²	NC512m Port 1 ²	NC512m Port 2 ²		
BL260c G5	M1	5&6	7&8	3&4	3&4	Two (2)	
BL460c	M1	Not supported		Not supported		Two (2)	HP 10Gb Ethernet Blade Switch
BL465c	M2	5&6	7&8	3&4	3&4		
BL465c G5							
BL480c	M1	Not supported		Not supported		Two (2)	
BL680c G5	M2	5&6	7&8	3&4	3&4		
BL685c	M3	7&8	5&6	3&4	3&4		
BL685c G5							

¹ A maximum of one NC512m adapter is supported per server.

² Port numerations can vary by operating system.

³ An additional two (2) 1GbE ports per half height server and four (4) 1GbE ports per full height server are provided care of the embedded network adapters.

⁴ For purchase of the Interconnect Modules referenced above; please see the related options section of this QuickSpecs.

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, which ever 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 are 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>

Related Options

Additional c-Class BladeSystem Adapters	HP NC325m PCI Express Quad Port 1Gb Server Adapter	416585-B21
	HP NC326m PCI Express Dual Port 1Gb Server Adapter	406771-B21
	HP NC360m Dual Port 1GbE BL-c Adapter	445978-B21
	HP NC364m Quad Port 1GbE BL-c Adapter	447883-B21
	HP NC373m PCI Express Dual Port Multifunction Gigabit Server Adapter	406770-B21
HP 10Gb Ethernet Blade Switch	HP 10Gb Ethernet Blade Switch	445860-B21
	NOTE: An NC512m network adapter card is required for each server blade connecting to the HP 10Gb Ethernet BL-c Switch.	

Technical Specifications

General Specifications	Network controller	Netxen Intelligent NIC™ NX2031		
	Data rate	Two ports, each at 20 Gbps full duplex; 40 Gbps aggregate full duplex theoretical bandwidth. Note that each port on the NC512m adapter transmits from the server at only 20 Gbps full duplex.		
	Bus type	x8 PCI Express 1.1		
	Form factor	Type II mezzanine card supported in c3000 and c7000 enclosures on all ProLiant c-Class servers, in mezzanine slot 2 or 3 (full height servers) and slot 2 (half height servers); maximum one NC512m card per server		
Power and Environmental Specifications	IEEE Compliance	802.1p, 802.3, 802.3ap (10GBase-KX4), 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	23 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"> ● 32-bit Windows <ul style="list-style-type: none"> ○ Microsoft Windows Server 2003 Standard and Enterprise Editions ● 64-bit Windows <ul style="list-style-type: none"> ○ Microsoft Windows Server 2003 Standard and Enterprise Editions ● Red Hat Enterprise Linux ● SUSE Linux Enterprise Server 			

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.

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.

© Copyright 2008 Hewlett-Packard Development Company, L.P.

The information contained herein is subject to change without notice.

Windows is a US registered trademark of Microsoft Corporation.

The only warranties for HP products and services are set forth in the express warranty statements accompanying such products and services. Nothing herein should be construed as constituting an additional warranty. HP shall not be liable for technical or editorial errors or omissions contained herein.