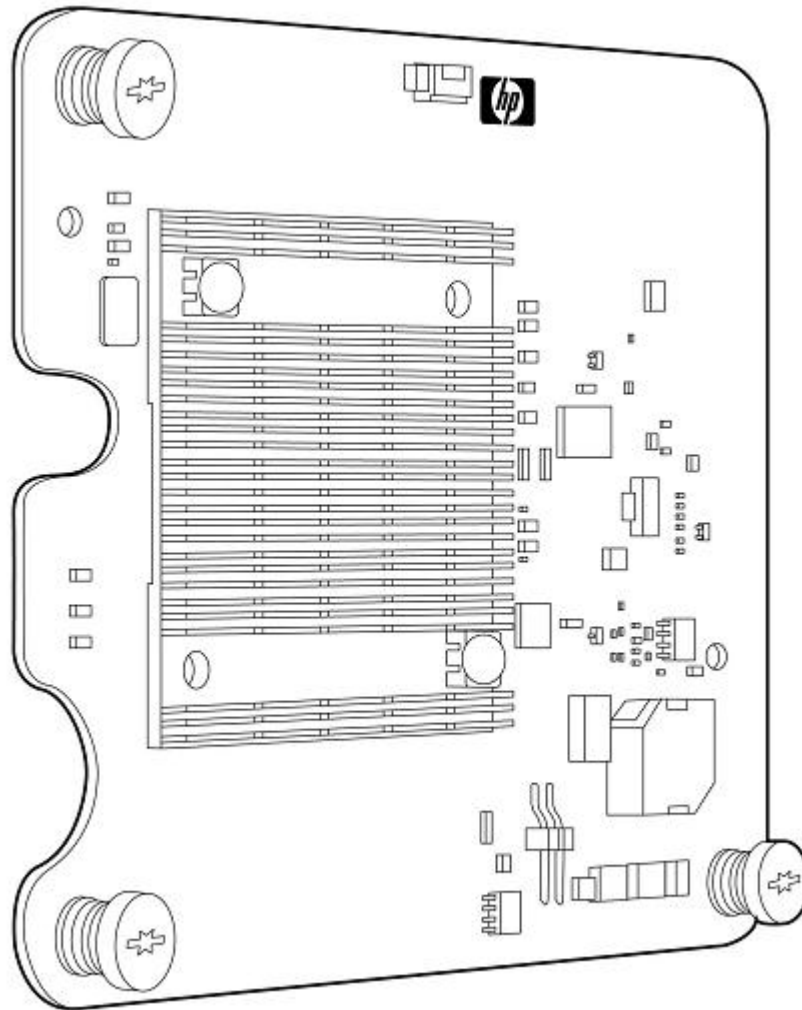


Overview

The HP NC542m Dual Port Flex-10 10GbE BLc Adapter is the newest member of the c-Class 10Gb adapter portfolio and the most powerful. Based on the latest version of the Mellanox ConnectX family, the HP NC542m delivers the highest overall throughput and the lowest latency of all the 10GbE adapters. Perfect for mission critical applications such as financial services and virtualized environments, the adapter works with all BladeSystem c-Class G6 servers. When paired with the 6120XG Blade Switch, the combination provides a comprehensive high bandwidth, high performance interface between the server edge and the network.



HP NC542m Dual Port Flex-10 10GbE BLc Adapter

What's New

- Support for HP ProLiant Generation 7 Server Blades

Overview

At A Glance

- Industry-leading throughput and latency performance
- Supported on all G6 c-Class servers, in mezzanine slots 1, 2 or 3 (full height servers) or slots 1 and 2 (half height servers).
- Type I Adapter
- Supports Mellanox LLE Low Latency Ethernet technology
- IEEE 802.1p QoS 802.3x flow control, and 802.3ap 10GBase-KR
- 9K Jumbo frames
- Dual 10Gb ports provide up to 40Gb full duplex per adapter
- Supports HP's exclusive Flex-10 technology that allows you to set any bandwidth from 100Mb to 10Gb on up to four "Physical Function" NICs per port when combined with the 10Gb Flex-10 Virtual Connect module

NOTE: Flex-10 support will be added via the VC3.15 release.

Models

HP NC542m Dual Port Flex-10 10GbE BL-c Adapter

539857-B21

NOTE: The NC542m 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 NC542m requires a minimum of 2 GB of server memory.

NOTE: The NC542m supports linking at 1000Mbps or 10000Mbps when not connected to a Flex-10 device. The NC542m will only support 1000Mbps when connected to a 1Gb Ethernet interconnect.

Kit Contents

1. NC542m 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 BL280c G6
- HP ProLiant BL2X220c G6
- HP ProLiant BL460c G6
- HP ProLiant BL460c G7
- HP ProLiant BL465c G6
- HP ProLiant BL465c G7
- HP ProLiant BL490c G6
- HP ProLiant BL490c G7
- HP ProLiant BL495c G6
- HP ProLiant BL620c G7
- HP ProLiant BL680c G7
- HP ProLiant BL685c G6
- HP ProLiant BL685c G7

NOTE: Some servers listed above may be discontinued.

Performance

Dual-port 10 Gigabit Ethernet Throughput

The NC542m 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. Using the latest Mellanox ConnectX -2 EN controller, this adapter provides industry leading throughput and latency performance.

Jumbo Frames

The NC542m support for jumbo frames (also known as extended frames) permit up to a 9K 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 NC542m 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.

Interrupt Coalescence

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 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.

Receive-Side Scaling (RSS)

Receive-Side Scaling (RSS) resolves the single-processor bottleneck by allowing the receive side network load from a network adapter to be shared across multiple processors.

TOE

The NC542m does not support TOE.

iSCSI

The NC542m does not support accelerated iSCSI or iSCSI boot.

Low Latency Ethernet

Low Latency Ethernet is an efficient RDMA transport over Layer2 10GbE networks for performance-critical and low-latency applications. LLE will be supported when made available by Mellanox.



Compatibility

Supported Interconnect Modules

- HP Virtual Connect Flex-10 Ethernet Module
- HP 1/10Gb Virtual Connect Ethernet Module
- HP 1/10Gb-F Virtual Connect Ethernet Module HP
- HP 6120XG Blade Switch
- HP 1:10Gb Ethernet BL-c Switch
- Cisco Catalyst 3020 Blade Switch
- HP GbE2c Layer 2/3 Ethernet Blade Switch
- HP 1Gb Ethernet Pass-Thru Module
- HP 10GbE Pass-Thru Module

NOTE: Flex-10 support will be added via the VC3.15 release.

NOTE: Some modules listed above may be discontinued.



Service and Support

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>

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/5981-9356EN>

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

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>



Service and Support

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.

Coverage For ProLiant servers and storage systems, this service covers HP-branded hardware options qualified for the server, purchased at the same time or afterward, internal to the enclosure, as well as external monitors up to 22" and tower UPS products; these items will be covered at the same service level and for the same coverage period as the server unless the maximum supported lifetime and/or the maximum usage limitation has been exceeded. Coverage of the UPS battery is not included; standard warranty terms and conditions apply.

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
	QLogic QMH4062 1GbE iSCSI Adapter for c-Class BladeSystem	488074-B22
	HP NC522m Dual Port 10GbE Multifunction BL-c Adapter	467801-B21
	HP NC532m Dual Port 10GbE Multifunction BL-c Adapter	467799-B21
HP 10Gb interconnects	HP Virtual Connect Flex-10 10Gb Ethernet Module for c-Class BladeSystem	455880-B21
	HP 6120XG Blade Switch	516733-B21
	HP 10GbE Ethernet Pass-Thru Module for c-Class BladeSystem	538113-B21



Technical Specifications

General Specifications	Network processor	Mellanox ConnectX - 2EN Controller		
	Data rate	Two ports, each at 20 Gbps full duplex; 40 Gbps aggregate full duplex theoretical bandwidth.		
	Bus type	PCI Express v2.0 (Gen 2) x8		
	Form factor	The NC542m is a Type I card and is supported in any mezzanine 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	0°C to 55°C / 32°F to 131°F	
		Humidity	10% to 90% non-condensing	
	Power requirement	10W 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	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:

NetWare 6.5
 Netware OES (6.5)



Technical Specifications

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

Solaris:

Solaris 10 (32- and 64-bit) (1H2010)

Virtualization:

MS Virtual Server support on Windows 2008

VMware ESX 4.0

VMware ESX 3.5 (1Q2010)

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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