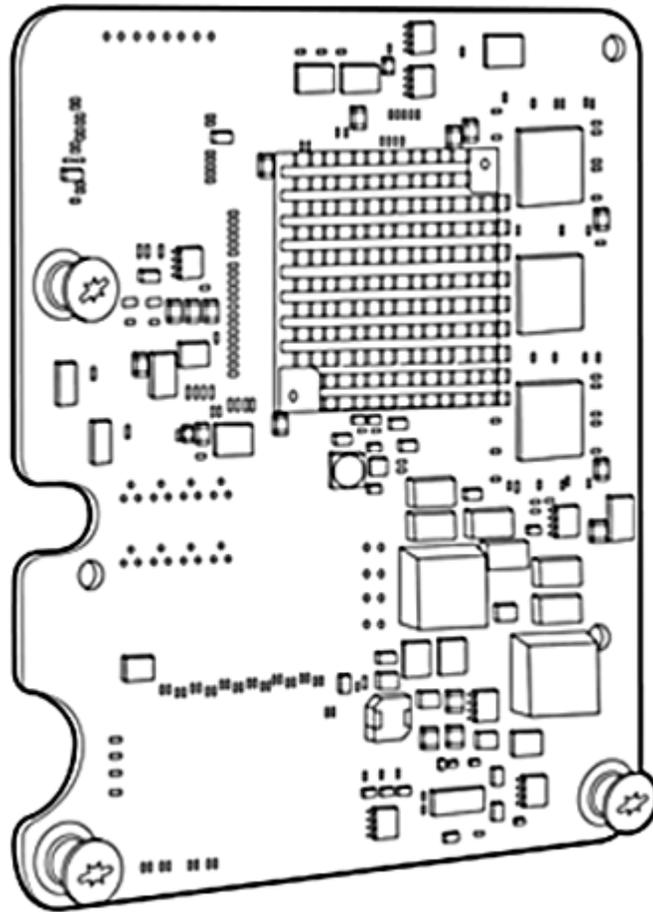


### Overview

#### HP NC522m Dual Port Flex -10 10GbE Multifunction BL-c Adapter

The NC522m is a dual port, IEEE 10GBase-KR 10 Gigabit Ethernet network adapter for HP ProLiant c-Class BladeSystem based on the NetXen 3031 controller. For customers who have come to rely on NetXen performance, the NC522m is supported on the HP Virtual Connect Flex-10 10Gb Ethernet Module for BladeSystem c-Class to enable Flex-10 on most ProLiant blade servers. The NC522 will also support 10Gb connections when paired with the ProCurve 6120XG Blade Switch. The NC522m ships with support for VLAN tagging, QoS, 9K jumbo frames, teaming (bonding), Receive Side Scaling (RSS) and PXE.

The NC522m adapter is supported in ProLiant c-Class server type II (x8 PCI Express) mezzanine slots.



HP NC522m Dual Port Flex -10 10GbE Multifunction BL-c Adapter

### Overview

#### At A Glance

- Dual 10 Gigabit Ethernet ports
- Type II mezzanine card supported in all ProLiant c-class server type II (x8 PCI Express) mezzanine slots
- Supports HP's exclusive Flex-10 technology
- IEEE 802.1p QoS 802.3x flow control, and 802.3ap 10GBase-KR
- 9K Jumbo frames
- Set any bandwidth from 100Mb to 10Gb on up to four "Physical Function " NICs per port

#### Models

HP NC522m Dual Port Flex -10 10GbE Multifunction BL-c Adapter

467801-B21

**NOTE:** The NC522m 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 NC522m requires a minimum of 2 GB of server memory.

**NOTE:** The NC522m supports linking only at 1000Mbps or 10000Mbps when not connected to the HP Virtual Connect Flex-10 Ethernet Module.

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

#### Kit Contents

1. NC522m 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 BL685c G6
- HP ProLiant BL685c G7
- HP ProLiant BL680c G5
- HP ProLiant BL495c G5
- HP ProLiant BL495c G6
- HP ProLiant BL490c G6
- HP ProLiant BL490c G7
- HP ProLiant BL465c G5
- HP ProLiant BL465c G6
- HP ProLiant BL465c G7
- HP ProLiant BL460c G6
- HP ProLiant BL460c G7
- HP ProLiant BL280c G6
- HP ProLiant BL2x220c G6

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



### Standard Features

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. Note that each port on the NC522m transmits from the server at 20 Gbps full duplex.
	HP Virtual Connect Flex-10	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. <ul style="list-style-type: none"><li>• Server ROM recognizes them as individual NICs</li><li>• Speeds can be set per NIC from 100Mb to 10Gbps in 100Mb increments</li><li>• Three fold increase in number of network connections per port.</li><li>• Up to four physical function NICs per port</li></ul>
	Jumbo Frames	The NC522m 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 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.
	802.1Q VLANs	IEEE 802.1Q virtual local area network (VLAN) protocol allows each physical port of the NC522m 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.
	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.
	TOE	TOE supported on Windows Server 2003/2008 TOE for Linux (LSA) not currently supported
RDMA	Not Supported	
Accelerated iSCSI	Not Supported	

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High Availability	Dual port	The two ports on the NC522m transmit to separate enclosure interconnect bays providing redundant signal paths.
	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 the ProLiant Network Adapter Teaming Whitepaper available at: <a href="http://bizsupport.austin.hp.com/bc/docs/support/SupportManual/c01415139/c01415139.pdf">http://bizsupport.austin.hp.com/bc/docs/support/SupportManual/c01415139/c01415139.pdf</a>

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## Standard Features

### 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>



## Compatibility

### Supported Interconnect Modules

- HP Virtual Connect Flex-10 Ethernet Module
- HP 6120XG Blade Switch
- HP 10GbE Pass-Thru Module

**NOTE:** Flex-10 support will be added via firmware update 4Q2010. Except for the HP Virtual Connect Flex-10 Ethernet Module, the ProCurve 6120XG and the HP 10GbE Pass-Thru Module, all other supported interconnects are limited to 1Gb per port connection.

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



### Service and Support

#### Service and Support

#### **HP Care Pack Services: Packaged server and storage services for increased uptime, productivity and ROI**

When you buy HP server and storage products and solutions, it's also a good time to think about what levels of support you may need. Our portfolio of service options reduce deployment and management worries while helping you get the most out of your server and storage investments. We take a holistic approach to your environment, bridging servers, blades, storage, software and network infrastructures with our packaged HP Care Pack Services for servers and storage.

#### **Protect your business beyond warranty**

When it comes to robustness and reliability, standard computing equipment warranties have matured along with technology. Good news that can also create problems stemming from depending on standard warranties designed to only protect against product defects and some downtime causes. Using a standard approach to warranty uplifts, such as HP Care Pack Services, helps reduce downtime risks and provides operational consistency for mission-critical and standard business computing.

#### **HP Care Pack Services: Upgrading or extending standard server and storage warranties cost effectively**

HP Care Pack Services offer a standard reactive hardware and software support services suite sold separately, or combined with our Support Plus and Support Plus 24 services. The portfolio also provides a combination of integrated proactive and reactive services, such as Proactive 24 Service and Critical Service. In addition with HP Proactive Select, you can acquire the specific proactive constancy and technical services. HP Proactive Select menu offers a broad set of service options that you can mix and match depending on your specific requirements. Proactive service options include offers for server, storage, network, SAN device, software, environment and education services.

HP server and storage lifecycle support services offers a full spectrum of customer care-from technology support to complex migrations to complete managed services. HP Factory Express provides customization, integration and deployment services for turnkey solutions. HP Education Services offer flexible, comprehensive training on to help your IT staff get the most out of your server and storage investments. HP Financial solutions extend innovative financing and cost-effective asset management programs-from purchase to equipment retirement.

Learn more: [www.hp.com/services/servers](http://www.hp.com/services/servers) and [www.hp.com/services/storage](http://www.hp.com/services/storage)

**NOTE:** Care Pack Services availability may vary by product and country.

HP Care Pack Services are sold by HP and HP Authorized Service Partners:

- Services for customers purchasing from HP or an enterprise reseller are quoted using HP order configuration tools.
- Customers purchasing from a commercial reseller can find HP Care Pack Services at <http://www.hp.com/go/lookuptool>



## Service and Support

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

#### Recommended Services **Hardware Options Support**

HP Care Packs provide support for all HP-branded hardware options qualified for inclusion in your server or storage solution. Any additional HP-qualified options installed within the server are covered at the same service level and for the same period as the server and no additional cost.

- Help improve or maintain system uptime
- Convenient onsite support
- Committed response time

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

#### **3-Year HP Hardware Support Onsite Service, 4-hour response, 24x7**

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.

This service provides a trained HP service specialist to perform an installation that meets HP quality standards, for:

- Help improve or maintain system uptime
- Convenient onsite support
- Committed response time

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

#### **HP Installation and Startup of HP ProLiant Servers**

Provides for the installation of your new HP ProLiant server and operating system to assist you in bringing your new HP ProLiant server and operating system into operation in a timely and professional manner.

This service provides a trained HP service specialist to perform an installation that meets HP quality standards, for:

- Delivery of the service at a mutually scheduled time convenient to your organization
- Availability of an HP service specialist to answer basic questions during the onsite delivery of this service
- Custom installation as detailed in "Delivery specifications" or in a Statement of Work (SOW)
- Verification prior to installation that all service prerequisites are met

<http://h20195.www2.hp.com/V2/GetPDF.aspx/5982-7572ENN.pdf>



## Service and Support

### Optional HP Care Pack Services that will enhance your HP product experience

#### Optional Services

#### **3-Year HP Hardware Support Onsite Call-to-Repair (CTR) Service, 6- or 24-hour**

As an alternative to our recommended support level, for customers who need committed call-to-repair for server hardware.

Provides your 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 or 24 hours of the initial service request to the HP Global Solution Center.

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

#### **3-Year HP Support Plus 24**

As an alternative to our recommended support level, for customers who need access to responsive 24x7 hardware and software support plus software updates on HP and selected third party products:

For a higher return on your server and storage technology, our 3-year combined reactive support service delivers integrated onsite hardware/software support services available 24x7x365, including access to HP technical resources, 4-hour response onsite hardware support and software updates.

<http://h20195.www2.hp.com/V2/GetPDF.aspx/5981-6638EEE.pdf>

#### **HP Proactive Select Service**

Customer needs on demand access to consulting, technical proactive services and education courses

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>

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#### eSupport

HP eSupport is a portfolio of technology-based services that assist you with managing your business environment - from the desktop to the data center.

#### **Support Portal**

The HP support portal provides one-stop access to the information, tools and services you need to manage the daily operations of your IT environment.

#### **Features include:**

- Access to self-solve tools (including search technical knowledge base)
- Efficient logging and tracking of support cases
- Collaboration with other business and IT professionals
- Download of patches and drivers
- Access to diagnostic tools
- Proactive notification of relevant information

Access to certain features of the support portal requires an HP service agreement. To access the support portal, visit: <http://www.hp.com/support>



### Service and Support

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HP Insight Remote Support software delivers secure remote support for your HP Servers and Storage, 24 X 7, so you can spend less time solving problems and more time focused on your business. You can have your systems remotely monitored for hardware failure using secure technology that's been proven at thousands of companies around the world. In many cases, you can avoid problems before they occur.

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### Customer Technical Training

In today's cost-conscious business environment, IT professionals, developers, consultants and users face an interesting challenge: how to keep up with the latest technologies and expand important skills while delivering profitable results on current projects. To help address this challenge, HP offers innovative training solutions that help keep you up-to-date on virtualization, server, storage, Insight Control, Citrix, Microsoft® and open source/Linux-related topics-while spending less time away from business-critical activities.

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### HP Services Awards

HP Technology Services continues to be recognized for service and support excellence by customers, partners, industry organizations and publications around the world. Recent honors and award reflect our services team's dedications, technical expertise, professionalism and uncompromising commitment to customer satisfaction.

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### Additional Services Information

To learn more on HP ProLiant servers, HP BladeSystem servers and HP storage products, please contact your HP sales representative or HP Authorized Channel Partner. Or visit: [www.hp.com/services/proliant](http://www.hp.com/services/proliant) or [www.hp.com/services/bladesystem](http://www.hp.com/services/bladesystem) or <http://www.hp.com/hps/storage>



### *Related Options*

HP Virtual Connect HP 6120XG	HP Virtual Connect Flex-10 10Gb Ethernet Module for BladeSystem c-class 6120XG 24 port layer 2 10Gb Ethernet switch	455880-B21 516733-B21
HP 10GbE Pass-Thru Module	HP 10Gb 32 port pass thru module (16 uplinks/16 downlinks)	538113-B21



### Technical Specifications

<b>General Specifications</b>	<b>Network controller</b>	Netxen Intelligent NIC™ NX3031		
	<b>Data rate</b>	Two ports, each at 20 Gbps full duplex; 40 Gbps aggregate full duplex theoretical bandwidth		
	<b>Bus type</b>	x8 PCI Express 2.0		
	<b>Form factor</b>	Type II mezzanine card supported in HP ProLiant c-class server type II mezzanine slots		
	<b>IEEE Compliance</b>	802.1p QoS, 802.1Q VLAN tagging, 802.3ad link aggregation, 802.3ap 10GBase-KR, and 802.3x flow control		
<b>Power and Environmental Specifications</b>	<b>Operating</b>	<b>Temperature</b>	32° - 131° F (0° - 55° C)	
		<b>Humidity</b>	10% to 90% non-condensing	
	<b>Non-operating</b>	<b>Temperature</b>	-40° to 158° F (-40° to 70° C)	
		<b>Humidity</b>	5% to 95% non-condensing	
	<b>Power requirement</b>	20 Watts maximum		
	<b>Emissions classification</b>	FCC Class A		
	<b>Agency approvals</b>	<b>USA</b>	FCC (CFR 47 part 15) and UL 60950	
		<b>Canada</b>	ICES-003 and CSA60950	
		<b>Japan</b>	VCCI	
		<b>Korea</b>	MIC (RRL), EMC Registration	
<b>Australia</b>		ACA, AS/NZS3548/EN55022:1998, EN55024:1998		
<b>European Union</b>		CE Mark, EN55022:1998 (CISPR 22), EN55024:1998, and IEC60950:1999 (EN60950:2000)		
<b>RoHS Compliance</b>	6 of 6			
<b>Safety</b>	UL Mark (USA and Canada) 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



### Technical Specifications

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

**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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