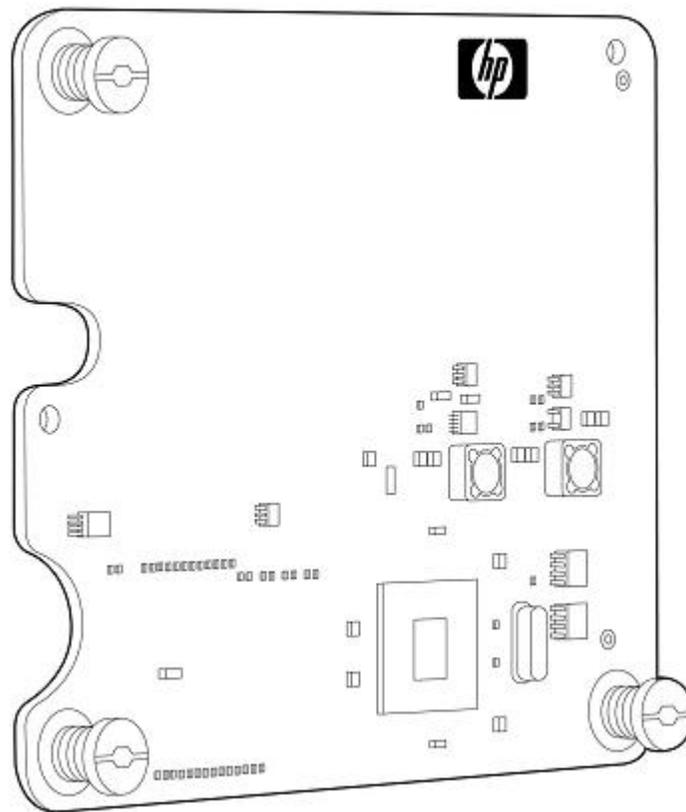


### Overview

The HP NC360m is a ProLiant c-Class BladeSystem network adapter providing two Gigabit Ethernet ports on a single mezzanine card utilizing only a maximum of 1.6 watts. With the addition of the NC360m, ProLiant c-Class customers now have the choice of an HP dual port network adapter that uses either an Intel or Broadcom controller. The NC360m is designed for applications requiring additional Gigabit Ethernet ports than those provided on the server. It is ideal for virtualization, security, server consolidation, network segmentation, and other BladeSystem applications requiring additional network port density.

Tested and proven to meet demanding BladeSystem standards, the NC360m 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, jumbo frames, VLAN tagging, and much more.



**HP NC360m Dual Port 1GbE BL-c Adapter**

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### What's New

- Support for HP ProLiant Generation 7 blade servers

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### Models

HP NC360m Dual Port 1GbE BL-c Adapter

445978-B21

### Overview

#### Kit Contents

1. HP NC360m Dual Port 1GbE BL-c Adapter
2. Quick install card
3. Product warranty statement
4. Drivers, user guide, and utilities via <http://www.hp.com>

### Compatibility

#### HP ProLiant Server Support

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

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

#### HP Integrity Server Support

- HP Integrity BL860c
- HP Integrity BL860c i2
- HP Integrity BL860c i4
- HP Integrity BL870c
- HP Integrity BL870c i2
- HP Integrity BL870c i4
- HP Integrity BL890c i2
- HP Integrity BL890c i4

### Standard Features

#### Product Features

- Dual Gigabit Ethernet ports
- Maximum 1.6 watts power usage
- Supported on all ProLiant c-Class servers in all mezzanine slots, multiple cards per server
- Intel 82571EB controller
- 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
  - Jumbo frames
  - TCP/IP checksum offload (TCO) and large send offload (LSO)
  - Interrupt coalescence
  - Dual address cycles (DAC)
  - PXE (when using Virtual Connect modules only)
  - Wake-on-LAN (WOL)
- IPv6 packet transmit and receive (excluding all offload capabilities); IPv6 aware SNMPv1 agent for Windows

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#### Performance

##### Dual-port Gigabit Ethernet Throughput Jumbo Frames

Up to 2000 Mbps full duplex Ethernet transfer rate per port (4000 Mbps combined) delivers outstanding network performance that improves response time and removes bottlenecks across the entire network. Jumbo frames (also known as extended frames) permit a 9K byte transmission unit (MTU), which is six times the size of standard 1500 byte Ethernet frame. The NC360m 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 NC360m 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 NC360m 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.

##### Dual port

The two ports on the NC360m are transmitted to separate enclosure interconnect bays providing redundant signal paths.

##### Redundant adapters

With multiple dual 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.

### Standard Features

**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:  
<ftp://ftp.compaq.com/pub/products/servers/networking/TeamingWP.pdf>

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### 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

#### 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>

##### **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>

##### **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>

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### 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>

##### **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>

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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

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/services/storage>

### Related Options

#### c-Class BladeSystem Interconnect Modules

**NOTE:** This is a list of supported options. Some may be discontinued.

HP Virtual Connect Flex-10 10Gb Ethernet Module for the c-Class BladeSystem	455880-B21
HP 1:10Gb Ethernet BL-c Switch for c-Class BladeSystem	438031-B21
HP 1/10Gb-F Virtual Connect Ethernet Module	447047-B21
Cisco Catalyst 3020 Blade Switch	410916-B21
Cisco Catalyst Blade Switch 3120G for HP	451438-B21
Cisco Catalyst Blade Switch 3120X for HP	451439-B21
HP GbE2c Layer2/3 Ethernet Blade Switch for c-Class BladeSystem	438030-B21
Ethernet Pass-Through Module for HP BladeSystem	406740-B21
HP 6120XG Blade Switch	516733-B21
HP 6120G/XG Blade Switch	498358-B21
HP 6125G Blade Switch	658247-B21
HP 6125G/XG Blade Switch	658250-B21
HP Cisco B22HP Fabric Extender for BladeSystem c-Class	641146-B21
HP Cisco B22HP Fabric Extender with 16 FET for BladeSystem c-Class	657787-B21

### Technical Specifications

<b>General Specifications</b>	<b>Network processor</b>	Intel 82571EB	
	<b>Data rate</b>	Two ports, each at 2000 Mbps full duplex (theoretical maximum) <b>NOTE:</b> The NC360m adapter transmits from the server at only 2 Gbps full duplex per port.	
	<b>Bus type</b>	x4 PCI Express 1.0a	
	<b>Form factor</b>	Type I mezzanine card compatible with all ProLiant c-Class server mezzanine slots	
	<b>IEEE Compliance</b>	802.1p, 802.1Q, 802.3, 802.3ad, and 802.3x	
<b>Power and Environmental Specifications</b>	<b>Operating</b>	<b>Temperature</b> 50° - 95° F (10° - 35° 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>	<b>Maximum Watts</b> 1.6 Watts, 3.3 volts at 510mA	
	<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>	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>	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) CE Mark EN 60590	
<b>Operating System Support</b>		<ul style="list-style-type: none"><li>● Microsoft Windows 2003 and 2008 (32-bit and 64-bit)</li><li>● Microsoft certified miniport and teaming drivers</li><li>● Red Hat Enterprise Linux</li><li>● SUSE Linux Enterprise Server</li><li>● HP-UX 11iv3</li><li>● Novell NetWare 6.5</li><li>● Novell Open Enterprise Server x86</li></ul>	

**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.

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