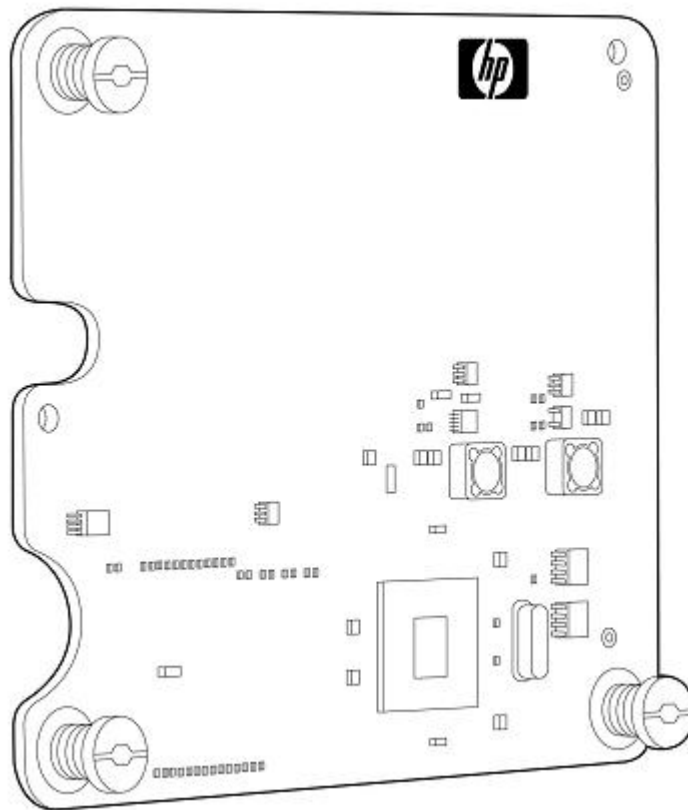


### Overview

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 6 servers
-

### Overview

#### At A Glance

- 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

#### Models

HP NC360m Dual Port 1GbE BL-c Adapter

445978-B21

#### 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>

#### 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
- HP ProLiant BL2x220c G5

### Performance

#### Dual-port Gigabit Ethernet Throughput

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.

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#### Jumbo Frames

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.

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#### 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.

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#### 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.

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#### 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

**Dual port**

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

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**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.

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**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:

<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 NC360m 1GbE Ports/Server | Supported Interconnect Modules <sup>2</sup>   |
|--|-----------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------------|---|
|  |           | NC360m Port 1 <sup>1</sup> | NC360m Port 2 <sup>1</sup> | NC360m Port 1 <sup>1</sup> | NC360m Port 2 <sup>1</sup> |                                  |   |
| BL2x220c G5  | M1        | 5                          | 6                          | 3                          | 4                          | Four (4)                         | <ul style="list-style-type: none"> <li>• HP Virtual Connect Flex-10 10GB Ethernet Module for BladeSystem c-Class</li> <li>• HP 1/10Gb Virtual Connect Ethernet Module</li> <li>• HP 1/10Gb-F Virtual Connect Ethernet Module HP</li> <li>• 1:10Gb Ethernet BL-c Switch</li> <li>• Cisco Catalyst 3120G Blade Switch for HP</li> <li>• Cisco Catalyst 3120X Blade Switch for HP</li> <li>• Cisco Catalyst 3020 Blade Switch</li> <li>• HP GbE2c Layer 2/3 Ethernet Blade Switch</li> <li>• HP 1Gb Ethernet Pass-Thru Module</li> </ul> |
|  | M2        | 7                          | 8                          | 3                          | 4                          |                                  |   |
| BL260c G5  | M1        | 5                          | 6                          | 3                          | 4                          | Two (2)                          |   |
| BL280c G6<br>BL460c<br>BL460c G5<br>BL460c G6<br>BL465c G5<br>BL490c G6<br>BL495c G5 | M1        | 3                          | 4                          | 2                          | 2                          | Four (4)                         |   |
|  | M2        | 5                          | 6                          | 3                          | 4                          |                                  |   |
| BL480c<br>BL680c G5<br>BL685c<br>BL685c G5   | M1        | 3                          | 4                          | 2                          | 2                          | Six (6)                          |   |
|  | M2        | 5                          | 6                          | 3                          | 4                          |                                  |   |
|  | M3        | 7                          | 8                          | 3                          | 4                          |                                  |   |

<sup>1</sup> Port numerations can vary by operating system.

<sup>2</sup> 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, 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/bladepackservices>

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

### Related Options

|   |   |            |
|---|---|------------|
| <b>c-Class BladeSystem<br/>Interconnect Modules</b> | 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 |
|   | HP 1/10Gb Virtual Connect Ethernet Module for c-Class BladeSystem           | 399593-B22 |
|   | 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 |

### Technical Specifications

|  |   |  |                                   |
|--|---|--|-----------------------------------|
| General Specifications                 | Network processor   | Intel 82571EB  |                                   |
|  | Data rate   | Two ports, each at 2000 Mbps full duplex (theoretical maximum)<br><b>NOTE:</b> The NC360m adapter transmits from the server at only 2 Gbps full duplex per port. |                                   |
|  | Bus type  | x4 PCI Express 1.0a  |                                   |
|  | Form factor   | Type I mezzanine card compatible with all ProLiant c-Class server mezzanine slots  |                                   |
| 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   | Maximum Watts  | 1.6 Watts, 3.3 volts at 510mA     |
|  | Emissions Classification  | FCC Class A  |                                   |
|  | Agency Approvals  | USA  | FCC (CFR 47 part 15) and UL 60950 |
|  |   | Canada   | CSA60950                          |
|  |   | Japan  | VCCI                              |
| Korea                                  |   | MIC (RRL), EMC Registration  |                                   |
| Australia                              |   | ACA, AS/NZS3548/EN55022:1998, EN55024:1998   |                                   |
| RoHS Compliance                        | European Union  | EN55022:1998 (CISPR 22), EN55024:1998, and IEC60950:1999 (EN60950:2000)  |                                   |
|  | RoHS Compliance   | 6 of 6   |                                   |
|  | Safety  | UL Mark (USA and Canada)<br>CE Mark<br>EN 60590  |                                   |
| Operating System Support               | <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>● 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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