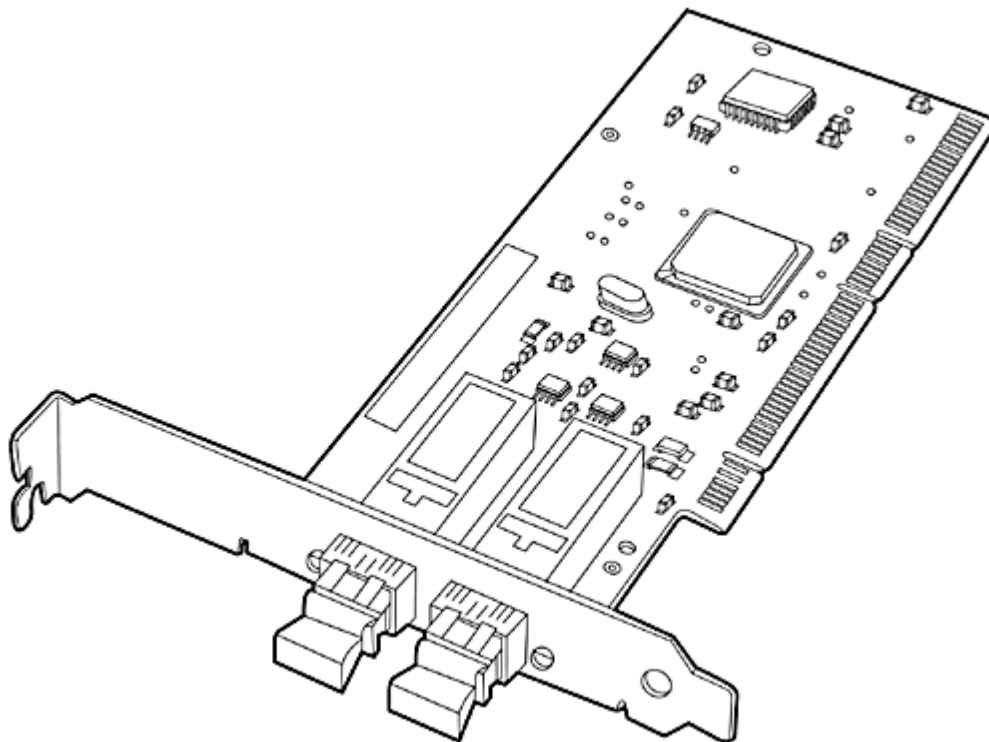


Overview

The HP NC6170 PCI-X Dual Port 1000SX Gigabit Server Adapter is a dual port fiber Gigabit server adapter that runs over multimode fiber cable. It is the first HP server adapter to combine dual port Gigabit Ethernet speed with PCI-X bus technology for fiber-optic environments. Along with all the advanced features that HP ProLiant customers have come to expect, the NC6170 includes support for Jumbo Frames, Dual Address Cycles (DAC), and Pre-Boot Execution environment (PXE).



Models

HP NC6170 PCI-X Dual Port 1000SX Gigabit Server Adapter

313879-B21

NOTE: The NC6170 supports Gigabit Ethernet as well as a PCI-X 64-bit/133MHz interface, and it is backwards compatible with existing PCI bus architectures. This range of features enables HP ProLiant customers to protect their current hardware investment while also future-proofing their HP ProLiant servers for the inevitable increase in networking throughput. Additionally, the NC6170 ships with support for PCI Hot Plug, Network Fault Tolerance, Load Balancing, and various offload capabilities that improve performance.

Related Gigabit Server Adapters

HP NC310F PCI-X 1000SX Gigabit Server Adapter

368169-B21

HP NC320T PCI Express 1000T Gigabit Server Adapter

367047-B21

HP NC1020 PCI 1000T Gigabit Server Adapter

353377-B21

HP NC6170 PCI-X Dual Port 1000SX Gigabit Server Adapter

313879-B21

HP NC7170 PCI-X Dual Port 1000T Gigabit Server Adapter

313881-B21

HP NC7170 PCI-X Dual Port Low Profile 1000T Gigabit Server Adapter

383738-B21

NOTE: Low profile for half height slots.

HP NC7771 PCI-X 1000T Gigabit Server Adapter

290563-B21

Combo Switch Adapter

NC150T PCI 4-port Gigabit Combo Switch Adapter

367132-B21

ProLiant Essentials Intelligent Networking Pack

Overview

ProLiant Essentials Intelligent Networking Pack - single server license	372906-B21
ProLiant Essentials Intelligent Networking Pack - flexible license	372950-B21
ProLiant Essentials Intelligent Networking Pack - tracking license	372951-B21

Server Support

- HP ProLiant DL145
- HP ProLiant ML150 G2
- HP ProLiant ML310 G2
- HP ProLiant DL320 G3
- HP ProLiant ML330 G3
- HP ProLiant ML350 G4
- HP ProLiant DL360 G4
- HP ProLiant ML370 G4
- HP ProLiant DL380 G3
- HP ProLiant DL380 G4
- HP ProLiant DL380 G4 packaged cluster
- HP ProLiant DL380 G4 packaged cluster with MSA500 G2
- HP ProLiant DL385
- HP ProLiant ML570 G2
- HP ProLiant DL580 G2
- HP ProLiant DL580 G3
- HP ProLiant DL585

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

Performance

Gigabit Ethernet Throughput

A 1000Mbps Ethernet transfer rate delivers outstanding network performance that improves response time and removes bottlenecks.

PCI-X Interface

HP was an early champion of PCI-X bus technology and has played a key role in the development and industry adoption of the PCI-X specification. The NC6170 is our first dual port fiber-optic server adapter to feature a PCI-X 64-bit/133MHz interface, which yields faster transmissions with lower CPU utilization than earlier PCI-based, gigabit fiber solutions.

Load Balancing

Transmit Load Balancing (TLB) and Switch-assisted Load Balancing (SLB) are two advanced features that customers can use to build a bigger pipe for improved networking bandwidth. These port bonding techniques enable users to install up to eight NC6170 adapters in a HP ProLiant server and aggregate their throughput up to a theoretical maximum of 16Gigabits per second full-duplex transmissions.

Jumbo Frames

Jumbo Frames (also known as Extended Frames) offer a 9K byte Maximum Transmission Unit (MTU), which is six times the size of traditional Ethernet frames. Like all HP ProLiant server adapters, the NC6170 supports jumbo frames as a way to achieve higher throughput and better CPU utilization when deployed in a network infrastructure that supports them. Jumbo frames are particularly useful for database transfers and tape backups.

Overview

Advanced TCP Offloading Capability TCP/IP is the protocol used in Ethernet transmissions; and typically the network's TCP/IP segmentation and transmission are done by the operating system's protocol stack. The advanced capabilities of the NC6170 shown below improve network performance by offloading functions from the CPU to the adapter and are the most advanced TCP Offloading capabilities for HP ProLiant servers at the present time.

- TCP Checksum Offloads is a feature that reduces the load on the CPU for overall improved system response.
- Large Send Offloads/TCP Segmentation Offloads are capabilities that allow the TCP segmentation to be handled by the adapter itself; thus saving host CPU cycles for enhanced performance when there are large amounts of data sent across the network. This capability further reduces the load on the CPU for overall improved system response.
- Interrupt Moderation is a feature that 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.

Scalability and Reliability

PCI-X Support for Traditional PCI Slots PCI-X technology ensures hardware investment protection by retaining backward compatibility with the standard PCI bus architecture at the device and driver level. When the NC6170 is used in a traditional 64/100, 64/66, 64/33, or 32/33 PCI IO slot, its performance is limited to the maximum of the conventional bus architecture.

Dual Ports Two Gigabit ports allow users to save slots in situations where their servers are slot-constrained. HP has long been an advocate of dual port adapters for servers; the NC6170 is the latest in our legacy of dual-port devices for HP ProLiant servers.

Network Fault Tolerance (NFT) Network Fault Tolerance, sometimes called "failover" or "NIC Redundancy," allows for the installation of multiple NC6170 server adapters so that the active device can be backed up by a redundant adapter to improve availability. HP's teaming utility also allows users to specify that when a failed adapter is fixed and replaced, the original adapter resumes its function as the primary network connection.

PCI Hot Plug The NC6170 ships with PCI Hot Plug support, which enables it to be replaced or added to a PCI Hot Plug compatible server without powering down the system. This feature provides increased system availability and serviceability in business-critical computing environments.

EMI and Security Protection Because the NC6170 runs over fiber-optic cabling, users are assured of the highest protection against EMI interference from machinery or lighting. The high security provided by fiber cabling reduces the threat of unauthorized access to data running over the network.

Distance capabilities The NC6170 supports cable runs up to 550 meters on 50/125 μ m multimode fiber cable. This capability is ideal for environments where the limitations of twisted-pair wiring do not allow for sufficient distances between devices.

Overview

Network Management

Management Support Like all HP ProLiant server adapters, the NC6170 ships with drivers and agents that can be managed from all versions of Insight Manager. Additionally, it supports any management application that supports SNMP.

Server Integration The SmartStart configuration utility includes setup support for the NC6170 so that the adapter can be configured as part of the SmartStart configuration process. Insight Manager can recognize the NC6170 individually or in a port-bonded team, and it can collect and report SNMP statistics on the adapter events. Integrated Management Log (IML) support is provided by the NC6170 for critical event logging on HP ProLiant servers.

Configuration Utilities Each NC6170 ships with a set of utilities that allow the user to:

- Enable initial diagnostics within Windows, Linux, Netware, and DOS operating systems.
- Configure network adapter teaming in a Windows environment. The Windows adapter teaming configuration utility includes a patented teaming GUI for Microsoft Windows 2000 and 2003 operating systems. Support for scripted installations of teams in a Microsoft Windows environment allow for unattended OS installations.

LED Indicators Bracket LED indicators show link integrity and network activity on each port for easy troubleshooting.

Kit Contents NC6170 PCI-X Dual Port 1000SX Gigabit Server Adapter:

- CD containing Drivers, User Guide, and Installation and Diagnostic Utilities
- Quick Install Card
- Product Quality Statement
- Product Warranty Statement

Warranty **Maximum:** The remaining warranty of the HP product in which it is installed (to a maximum three-year, limited warranty).
Minimum: One year limited warranty.
See Internet address <http://www.hp.com> for overall information on HP. For further information on HP products, contact HP Sales at 1-800-544-5255 or the HP Technical Support Center (post sales) at 1-800-652-6672. For customer support and information about HP and its products, call 1-800-652-6672.

Technical Specifications

Compliance	IEEE 802.3x, 802.3z, Dynamic 802.3ad, 802.1p, and 802.1Q PCI 2.2 ACPI v1.20a compliant																					
General Specifications	<table><tr><td>Communications</td><td>Intel® 82546EB</td></tr><tr><td>Processor</td><td>1000 Mbps, Full-duplex</td></tr><tr><td>On-board memory</td><td>128KB</td></tr><tr><td>Data path</td><td>64-bit/133MHz, compatible with 64/100, 64/66, 64/33 and 32/33</td></tr><tr><td>Interrupt levels</td><td>INTA and B</td></tr><tr><td>Bus architecture</td><td>PCI-X bus-mastering, compatible with existing PCI bus architectures</td></tr><tr><td>Cable Connectors</td><td>Two LC</td></tr><tr><td>Bus Connector</td><td>Universal, keyed for 3.3 and 5 volt slots</td></tr><tr><td>Distance and wiring</td><td>Up to 1,804 ft (550 m) with multimode fiber (50µm/125µm)</td></tr><tr><td>Dimensions (LxW)</td><td>Up to 705 ft (220 m) with multimode fiber (62.5µm/125µm) 6.6 x 2.5 in (16.5 x 6.4 cm) (L x W), 4.8 in (12.2 cm) width including bracket</td></tr></table>	Communications	Intel® 82546EB	Processor	1000 Mbps, Full-duplex	On-board memory	128KB	Data path	64-bit/133MHz, compatible with 64/100, 64/66, 64/33 and 32/33	Interrupt levels	INTA and B	Bus architecture	PCI-X bus-mastering, compatible with existing PCI bus architectures	Cable Connectors	Two LC	Bus Connector	Universal, keyed for 3.3 and 5 volt slots	Distance and wiring	Up to 1,804 ft (550 m) with multimode fiber (50µm/125µm)	Dimensions (LxW)	Up to 705 ft (220 m) with multimode fiber (62.5µm/125µm) 6.6 x 2.5 in (16.5 x 6.4 cm) (L x W), 4.8 in (12.2 cm) width including bracket	
Communications	Intel® 82546EB																					
Processor	1000 Mbps, Full-duplex																					
On-board memory	128KB																					
Data path	64-bit/133MHz, compatible with 64/100, 64/66, 64/33 and 32/33																					
Interrupt levels	INTA and B																					
Bus architecture	PCI-X bus-mastering, compatible with existing PCI bus architectures																					
Cable Connectors	Two LC																					
Bus Connector	Universal, keyed for 3.3 and 5 volt slots																					
Distance and wiring	Up to 1,804 ft (550 m) with multimode fiber (50µm/125µm)																					
Dimensions (LxW)	Up to 705 ft (220 m) with multimode fiber (62.5µm/125µm) 6.6 x 2.5 in (16.5 x 6.4 cm) (L x W), 4.8 in (12.2 cm) width including bracket																					
Power and Environmental Specifications	<table><tr><td>Operating</td><td>Temperature</td><td>32° to 131° F (0° to 55° C)</td></tr><tr><td></td><td>Humidity</td><td>10% to 90% non-condensing</td></tr><tr><td>Non-operating</td><td>Temperature</td><td>-40° to 85° F (-40° to 185° C)</td></tr><tr><td></td><td>Humidity</td><td>-5% to 95%</td></tr><tr><td>Power requirement</td><td colspan="2">1000 mA @ 5V maximum; 680 mA @ 5V typical</td></tr><tr><td>Emissions Standards</td><td colspan="2">FCC Class B, VCCI Class B, BSMI Class A, CISPR 22 Class B, EN 55022 Class B, EN55024-1, ICES-003 Class B, MIC Class B, ACA Class B</td></tr><tr><td>Safety Compliant</td><td colspan="2">UL, Canada UL, EN60950</td></tr></table>	Operating	Temperature	32° to 131° F (0° to 55° C)		Humidity	10% to 90% non-condensing	Non-operating	Temperature	-40° to 85° F (-40° to 185° C)		Humidity	-5% to 95%	Power requirement	1000 mA @ 5V maximum; 680 mA @ 5V typical		Emissions Standards	FCC Class B, VCCI Class B, BSMI Class A, CISPR 22 Class B, EN 55022 Class B, EN55024-1, ICES-003 Class B, MIC Class B, ACA Class B		Safety Compliant	UL, Canada UL, EN60950	
Operating	Temperature	32° to 131° F (0° to 55° C)																				
	Humidity	10% to 90% non-condensing																				
Non-operating	Temperature	-40° to 85° F (-40° to 185° C)																				
	Humidity	-5% to 95%																				
Power requirement	1000 mA @ 5V maximum; 680 mA @ 5V typical																					
Emissions Standards	FCC Class B, VCCI Class B, BSMI Class A, CISPR 22 Class B, EN 55022 Class B, EN55024-1, ICES-003 Class B, MIC Class B, ACA Class B																					
Safety Compliant	UL, Canada UL, EN60950																					
Operating System Supported	Windows Server 2003, 2003 ES, Windows 2000, and Windows NT 4.0 Novell NetWare® 4.x, 5.x Server SCO UnixWare 7.x SCO OpenServer 5.x Linux Red Hat 7.x MS-DOS Client for unattended installation																					

© Copyright 2005 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. Intel is a US registered trademark of Intel Corporation. UnixWare is a registered trademark of The Open Group.

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.