## Overview

The HP NC112T is a low-priced Gigabit Ethernet server adapter that features single-port, copper, single lane (x1) PCI Express capability, with 32KB onboard memory that provides 10/100/1000T auto-negotiated speed and duplex. It makes use of the latest Intel 82574L silicon and is suitable for both standard and low profile slots.

- Entry level single port, PCI Express (x1), copper Gigabit NIC
- Latest single port Intel 82574L Chipset
- Support for low-profile & standard slots
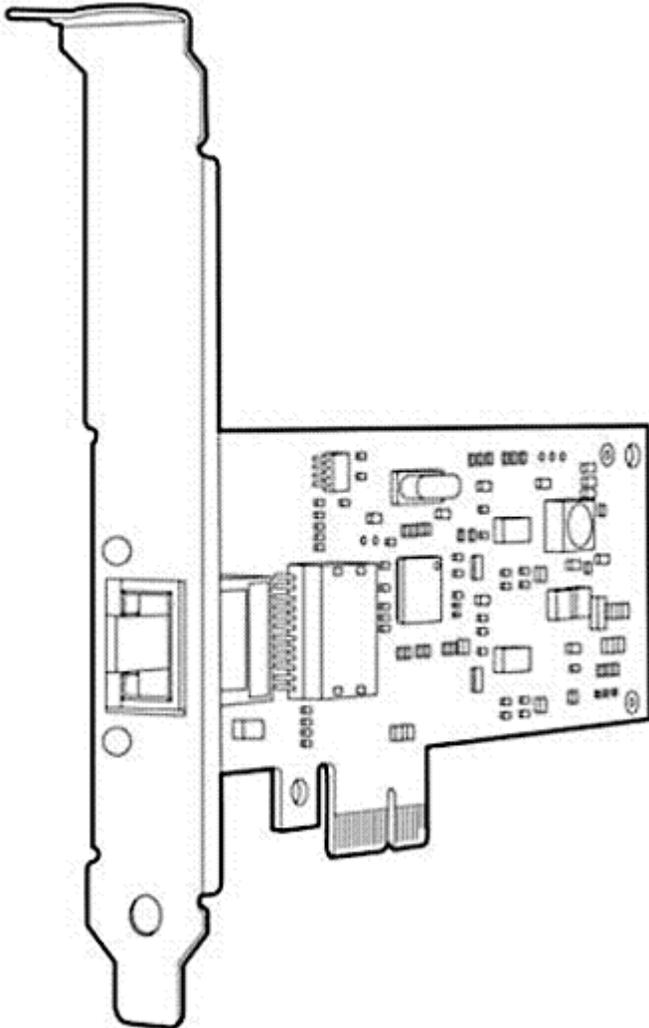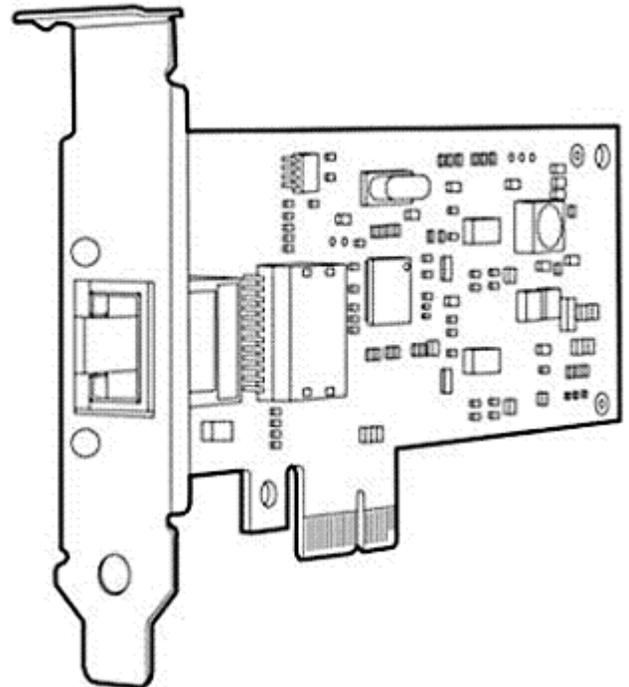
Standard Bracket   **Low Profile Bracket**

Models

HP NC112T PCI Express Gigabit Server Adapter	503746-B21

Overview

Kit Contents

- HP NC112T PCI Express Gigabit Server Adapter PCA ships with a standard height bracket attached to it. (The low profile bracket is included in the clamshell in which the PCA ships.) " Product Warranty statement
- Quick Install Card (QIC)
- Drivers, Installation and Diagnostic Utilities, and User Guide via: http://www.hp.com/cgi-bin/hpsupport/index.pl.

Compatibility

Servers

ProLiant DL (expansion-optimized):

- HP ProLiant DL120 G6
- HP ProLiant DL160 G6
- HP ProLiant DL160 Gen8
- HP ProLiant DL165 G5
- HP ProLiant DL165 G5p
- HP ProLiant DL165 G6
- HP ProLiant DL165 G7
- HP ProLiant DL170e G6
- HP ProLiant DL170h G6
- HP ProLiant DL180 G6
- HP ProLiant DL185 G5
- HP ProLiant DL320 G6
- HP ProLiant DL320e Gen8
- HP ProLiant DL320e Gen8 v2
- HP ProLiant DL360 G6
- HP ProLiant DL360 G7
- HP ProLiant DL360e Gen8
- HP ProLiant DL360p Gen8
- HP ProLiant DL370 G6
- HP ProLiant DL380 G6
- HP ProLiant DL380 G7
- HP ProLiant DL380e Gen8
- HP ProLiant DL380p Gen8
- HP ProLiant DL385 G5p
- HP ProLiant DL385 G6
- HP ProLiant DL385 G7
- HP ProLiant DL385p Gen8
- HP ProLiant DL560 Gen8
- HP ProLiant DL580 G5
- HP ProLiant DL580 G7
- HP ProLiant DL585 G5
- HP ProLiant DL585 G6
- HP ProLiant DL585 G7
- HP ProLiant DL785 G5
- HP ProLiant DL785 G6
- HP ProLiant DL980 G7

ProLiant ML (expansion-optimized):

- HP ProLiant ML10
- HP ProLiant ML110 G6
- HP ProLiant ML110 G7
- HP ProLiant ML150 G6
- HP ProLiant ML310 G5p
- HP ProLiant ML310e Gen8
- HP ProLiant ML310e Gen8 v2
- HP ProLiant ML330 G6

Compatibility

- HP ProLiant ML350 G6
- HP ProLiant ML350e Gen8
- HP ProLiant ML350p Gen8
- HP ProLiant ML370 G6

ProLiant SL (scalable line):

- HP ProLiant SL160s G6
- HP ProLiant SL160z G6
- HP ProLiant SL165s G7
- HP ProLiant SL165z G6
- HP ProLiant SL165z G7
- HP ProLiant SL170s G6
- HP ProLiant SL170z G6
- HP ProLiant SL2x170z G6
- HP ProLiant SL210t Gen8
- HP ProLiant SL230s Gen8
- HP ProLiant SL250s Gen8
- HP ProLiant SL270s Gen8
- HP ProLiant SL390s G7

ProLiant MicroServer (Just Right First Server):

- HP ProLiant MicroServer
- HP ProLiant MicroServer Gen8

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

Standard Features

Performance

Gigabit Throughput Combined with Legacy Ethernet Support

10/100/1000Mbps Ethernet transfer rate delivers outstanding network performance that improves response time and removes bottlenecks. Because the NC112T supports both 10Mbps Ethernet and 100Mbps Fast Ethernet in addition to Gigabit Ethernet, users are guaranteed end-to-end protocol support across their enterprise.

PCI Express Interface

HP was an early champion of PCI Express bus technology and has played a key role in the development and industry adoption of the PCI Express specification. The NC112T features an Intel 82574L chipset and offers a single lane (x1) PCI Express bus based on the PCIe v1.1 standard.

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 NC112T adapters (or a mix of other HP adapters totaling 8 ports) in a HP ProLiant server and aggregate their throughput up to a theoretical maximum of 16 Gigabits per second full-duplex transmissions.

Jumbo Frames

Jumbo Frames (also known as Extended Frames) offers a 9K byte Maximum Transmission Unit (MTU), which is six times the size of traditional Ethernet frames. Like all HP ProLiant server adapters, the NC112T supports jumbo frames as a way to achieve higher throughput and better CPU utilization when deployed in a network infrastructure that supports them.

TCP Checksum Offload and Large Send Offload (LSO)

These features reduce the load on the CPU to improve improved overall system response. LSO is based on both IPv4 and IPv6 and TCP Checksum Offload is IPv6 based.

Scalability and Reliability

Network Fault Tolerance (NFT)

Network Fault Tolerance, sometimes called "failover" or "NIC Redundancy," allows for the installation of multiple 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.

Distance capabilities

The NC112T supports cable runs up to 100 meters (328 feet).

Network Management

Auto-negotiation

The NC112T automatically senses and configures itself to the speed of the device to which it is attached. It also automatically configures for half or full duplex, depending on the duplex mode of the switch, hub, or router at the other end of the cable.

Wake-on-LAN

The NC112T provides cold boot Wake-on-LAN (WOL) support through the PCI Express bus. A system that supports Wake on LAN can remain available to a systems administrator during its normal downtime. Once the machine is awakened, the systems administrator can remotely control, audit, debug, or manage the machine.

Standard Features

Management Support	Like all HP ProLiant server adapters, the NC112T ships with drivers and agents that can be managed from all versions of Systems Insight Manager. Additionally, it supports any management application that supports SNMP.
Server Integration	The SmartStart configuration utility includes setup support for the NC112T so that the adapter can be configured as part of the SmartStart configuration process. Insight Manager can recognize the NC112T 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 NC112T for critical event logging on HP ProLiant servers.
Configuration Utilities	Each NC112T 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 2003 and 2008 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, network activity, and speed on each port for easy troubleshooting.
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.

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 and 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

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

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.

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.
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.
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 or www.hp.com/services/bladesystem or http://www.hp.com/hps/storage

Related Options

Gigabit Server Adapters	HP NC360T PCI-E Dual Port Gigabit Server Adapter	412648-B21
	HP NC364T PCI-E Quad Port Gigabit Server Adapter	435508-B21
	HP NC365T 4-port Ethernet Server Adapter	593722-B21
	HP NC373F PCI-E Multifunction 1000SX Gigabit Svr Adapter	394793-B21
	HP NC373T PCI-E Multifunction Gigabit Server Adapter	394791-B21
	HP NC375T PCI Express Quad Port Gigabit Server Adapter	538696-B21
	HP NC382T PCI Express Dual Port Multifunction Gigabit Server Adapter	458492-B21
	HP Ethernet 1Gb 4-port 331T Adapter	647594-B21
	HP Ethernet 1Gb 2-port 332T Adapter	615732-B21
	HP Ethernet 1Gb 2-port 361T Adapter	652497-B21

10 Gigabit Server Adapters	**NOTE:** A minimum of two Gigabytes (2 GB) of server memory is required per each adapter.	
	HP NC522SFP Dual Port 10GbE Gigabit Server Adapter	468332-B21
	HP NC523SFP 10Gb 2-port Server Adapter	593717-B21
	HP NC524SFP Dual Port 10GbE Module	489892-B21
	NOTE: NC524SFP is available only on DL370 G6, ML370 G6, DL580 G7, DL585 G7, and DL980 G7.	
	HP NC550SFP Dual Port 10GbE Server Adapter	581201-B21
	HP NC552SFP 10Gb 2-port Ethernet Server Adapter	614203-B21
	HP Ethernet 10Gb 2-port 530SFP Adapter	652503-B21
	HP Ethernet 10Gb 2-port 530T Adapter	656596-B21
	HP Ethernet 10Gb 2-port 560SFP+ Adapter	665249-B21
	HP Ethernet 10Gb 2-port 561T Adapter	716591-B21
	HP Ethernet 10Gb 2-port 570SFP+ Adapter	718904-B21

FlexibleLOM Adapters	**NOTE:** A minimum of two Gigabytes (2 GB) of server memory is required per each adapter.	
	Ethernet Adapters	
	HP Ethernet 1Gb 4-port 331FLR Adapter	629135-B21
	HP Ethernet 1Gb 4-port 366FLR Adapter	665240-B21
	HP Ethernet 10Gb 2-port 530FLR-SFP+ Adapter	647581-B21
	HP Ethernet 10Gb 2-port 560FLR-SFP+ Adapter	665243-B21
	HP Ethernet 10Gb 2-port 561FLR-T Adapter	700699-B21
	HP Ethernet 10Gb 2-port 570FLR-SFP+ Adapter	717491-B21
	FlexFabric Adapters	
	HP FlexFabric 10Gb 2-port 526FLR SFP+ Adapter	629138-B21
	HP FlexFabric 10Gb 2-port 533FLR-T Adapter	700759-B21
	HP FlexFabric 10Gb 2-port 534FLR-SFP+ Adapter	700751-B21
	HP FlexFabric 10Gb 2-port 554FLR-SFP+ Adapter	629142-B21
	NOTE: Please see the QuickSpecs for Technical Specifications and additional information: www.hp.com/go/ProLiantNICs	

Technical Specifications

Compliance	802.3, 802.3u, 802.3x, 802.3ab, 802.3ad, 802.1p, 802.1Q - PCIe v1.1 standard - FCC (U.S. only) Class B - DOC (Canada) Class B - CE EN 55024, EN55022 Class B - VCCI Class II - UL 1950 - CSA 950 - EN 60950 - CE - ACPI 1.0 - MicroSoft WHQL (Windows Hardware Quality Labs)

General Specifications

Communications Processor	Intel 82574L
On-board memory	32 KB
Data rate	10/100/1000 Mbps, Half- and full-duplex
Data path	Single lane (x1) PCI Express compatible with x1, x4, x8, and x16 PCI Express slots
Interrupt levels	Automatically configured
Cable Connector	One RJ-45
Bus Connector	PCI Express
Distance and Wiring	Up to 328 feet/100 m with Category 5 (or better) twisted-pair cabling
Card Dimensions (without brackets) (L x W)	11.93 cm x 5.58 cm (4.7 in x 2.2 in)

Power and Environmental Specifications

Operating	Temperature	32° to 131° F (0° to 55° C)
	Humidity	10% to 95% non-condensing
Non-operating	Temperature	-40° to 185° F (-40° to 85° C)
	Humidity	-5% to 95%
Power requirement	575mA @ 3.3 VDC max	
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 Support	**Microsoft**:	

Microsoft:

- Microsoft Windows Server 2008 (32-and 64-bit)
- Microsoft Windows Server 2003
- Microsoft Windows Server 2003 Web Edition
- Microsoft Windows Server 2003 Small Business Server
- Microsoft certified miniport and teaming drivers
- Microsoft Windows 2003 Standard (32 and x64)
- Microsoft Windows 2003 Enterprise (32 and x64)
- Microsoft Windows Server 2008
- Microsoft Windows HPC Server 2008

Linux:

Technical Specifications

- Red Hat Enterprise Linux
- SUSE Linux Enterprise Server
  NOTE: For more information on Linux, please visit our Linux Certified and Supported matrix: http://h18004.www1.hp.com/products/servers/linux/hplinuxcert.html.

Novell Netware:

- NetWare 6.5 and Netware OES (6.5)

Solaris:

- Solaris 10 (32- and 64-bit)

SCO:

- UnixWare 7.1.3. and 7.1.4
- Open Server 5.0.7 and 6.0
- NDIS 2 for DOS unattended install (40K or less in size) Microsoft® Windows Server 2003, x64 Edition, and Windows 2000

VMware:

- VMWare ESX K/L and ESC 3.5.0 U3

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.