

# HP ProLiant Networking

## Quick Reference Guide

Model Number & Description	Part Number	Unique Features	Shared Features
<b>Gigabit Ethernet copper adapters</b>			
<b>NC7771</b> Single Port PCI-X Gigabit Server Adapter	290563-B21	<ul style="list-style-type: none"> <li>Bus: 64-bit/133MHz PCI-X bus-mastering with 96KB onboard memory</li> <li>Chipset: Broadcom 5703</li> <li>Compatibility with 64/100, 64/66, 64/33 and 32/33 data path and with existing PCI bus architectures</li> </ul>	<ul style="list-style-type: none"> <li>Advanced features: Cold Boot Wake on LAN (WOL), PCI Hot Plug, Configuration Utilities, Dual Address Cycles (DAC), VLAN tagging, Interrupt levels – INTA, Jumbo Frames, LED Indicators, Management Support; Auto Negotiation, Checksum Offload, Large Send Offload, and reduction of CPU utilization with Interrupt Coalescing.</li> <li>Standard teaming supported: Switch-assisted Load Balancing (SLB), Transmit Load Balancing (TLB), Network Fault Tolerance (NFT), and 802.3ad Dynamic.</li> <li>ProLiant Essentials Intelligent Networking Pack (INP) option that provides: <ul style="list-style-type: none"> <li>Switch-assisted Dual Channel Load Balancing or Dual Channel Teaming</li> <li>Advanced redundancy, with the following failover types: <ul style="list-style-type: none"> <li>Active path failover</li> <li>Fast path failover</li> </ul> </li> <li>Virus Throttling</li> </ul> </li> <li>Cabling: Category 5 (or better) twisted-pair cabling</li> <li>Connector: RJ-45</li> <li>Distance: 100 meters</li> <li>Duplex: Half or full</li> <li>PCI compliance: PCI v2.2, PCI-X 1.0 (Except for NC320T which is PCI Express Version 1.0a compliant.)</li> <li>Pre-Boot Execution Environment (PXE)</li> <li>Transfer Rate: 10,100, &amp;1000 Mbps</li> <li>The NC1020 supports the shared features of copper gigabit NICs with these exceptions: <ul style="list-style-type: none"> <li>Jumbo Frames</li> <li>Teaming has this limitation: Large Send Offload (LSO) supported only in Microsoft operating systems teams with another NC1020 or a NC7761.</li> </ul> </li> </ul>
<b>NC7170</b> Dual Port PCI-X Gigabit Server Adapter	313881-B21	<ul style="list-style-type: none"> <li>Bus: 64-bit/133MHz PCI-X bus-mastering with 128KB onboard memory</li> <li>Chipset: Intel 82546EB</li> <li>Compatibility with 64/100, 64/66, 64/33 and 32/33 data path and with existing PCI bus architectures</li> </ul>	
<b>NC1020</b> Single Port PCI Gigabit Server Adapter	353377-B21	<ul style="list-style-type: none"> <li>Bus: 32-bit/66MHz PCI with 64KB onboard memory</li> <li>Chipset: Broadcom 5705</li> <li>Compatibility with 32/33 data path architecture and, with potential performance degradation, 64/100, 64/66, and 64/33 data path architectures.</li> </ul>	
<b>NC320T</b> Single Port PCI Express Gigabit Server Adapter	367047-B21	<ul style="list-style-type: none"> <li>Bus: Single lane (x1) 100 MHz PCI Express Reference Clock</li> <li>Chipset: Broadcom 5721</li> <li>Compliance: PCI Express Version 1.0a Compatibility with 64/100, 64/66, 64/33 and 32/33 data path and with existing PCI bus architectures.</li> </ul>	

<b>Gigabit Ethernet fiber adapters</b>			
<b>NC6170</b> Dual Port PCI-X 1000 SX Gigabit Server Adapter	313879-B21	<ul style="list-style-type: none"> <li>Bus: 64-bit/133MHz PCI-X bus-mastering with 128KB onboard memory</li> <li>Chipset: Intel 82546EB</li> <li>Compatibility with 64/100, 64/66, 64/33 and 32/33 data path and with existing PCI bus architectures</li> <li>Connector: Two low profile LC</li> </ul>	<p>Fiber adapters support the shared features of copper gigabit NICs, with these exceptions:</p> <ul style="list-style-type: none"> <li>WOL</li> <li>Auto-negotiation of transfer rate</li> </ul> <p>Additional features shared by fiber adapters:</p> <ul style="list-style-type: none"> <li>Cabling: Fiber optic</li> <li>Distance: 550 meters with multi-mode fiber</li> <li>Duplex: Full only</li> <li>PCI compliance: PCI v2.2, PCI-X 1.0 (NC6770 and NC6170), PCI-X 1.0a (NC310F)</li> <li>Pre-Boot Execution Environment (PXE)</li> <li>Transfer Rate: 1000Mbps</li> </ul>
<b>NC310F</b> Single Port PCI-X 1000SX Gigabit Server Adapter	368169-B21	<ul style="list-style-type: none"> <li>Bus: 64-bit/133MHz PCI-X 64 bit direct bus mastering with 64KB onboard memory</li> <li>Chipset: Intel 82545GM</li> <li>Compatibility with 64/100, 64/66, 64/33 and 32/33 data path and with existing PCI bus architectures</li> <li>Connector: Low profile LC</li> <li>Replaces NC6770</li> </ul>	

Model Number & Description	Part Number	Unique Features	Shared Features
<b>Combo Gigabit Ethernet switch adapters</b>			
<b>NC150T</b> PCI 4-port Gigabit Combo Switch Adapter	367132-B21	<ul style="list-style-type: none"> <li>• Bus: 32-bit/66MHz PCI with 64KB onboard memory</li> <li>• Chipset: Broadcom 5705</li> <li>• Compatibility with 32/33 data path architecture and, with potential performance degradation, 64/100, 64/66, and 64/33 data path architectures</li> <li>• VLAN tagging with the NC150T differs from other NC-series adapters because the switch portion behaves differently than the NIC portion. <ul style="list-style-type: none"> <li>○ The NIC portion allows VLAN tags to be placed on outbound frames which pass through the switch untouched.</li> <li>○ The driver's Network Configuration Utility (NCU) displays the properties of the NIC and allows basic VLAN teaming for Network Fault Tolerance (NFT) and Transmit Load Balancing (TLB).</li> <li>○ The switch portion is an unmanaged Layer 2 switch. As such, it cannot be configured for port-based, protocol-based, or MAC-based VLANs.</li> <li>○ All switch ports are on the default VLAN only.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• The NC150T supports the shared features of copper gigabit NICs with these exceptions: <ul style="list-style-type: none"> <li>▪ Jumbo Frames</li> <li>▪ PXE</li> <li>▪ WOL</li> </ul> </li> <li>▪ Teaming has these limitations: <ul style="list-style-type: none"> <li>○ The NIC portion of the NC150T can be teamed in either Network Fault Tolerance (NFT) or Transmit Load Balancing (TLB) mode, but not the switch portion.</li> <li>○ Switch-Assisted Load Balancing (SLB) and/or 802.3ad link aggregation teams are not supported.</li> <li>○ Large Send Offload (LSO) is supported only in Microsoft operating systems teams, so the NIC portion of the NC150T only teams with NC1020 or a server that has NC7761 LOM.</li> </ul> </li> </ul>

<b>Embedded Ethernet NICs/LAN on Motherboards (LOMs)</b>			
<b>NC7782</b> Integrated Dual Port Gigabit PCI-X LOM	<ul style="list-style-type: none"> <li>• Chipset: Broadcom 5704</li> </ul>	Supports all shared features of copper gigabit NICs.	
<b>NC7781</b> Integrated Gigabit PCI-X LOM	<ul style="list-style-type: none"> <li>• Chipset: Broadcom 5703</li> </ul>	Supports all shared features of copper gigabit NICs.	
<b>NC7761</b> Integrated Gigabit PCI LOM	<ul style="list-style-type: none"> <li>• Chipset: Broadcom 5705</li> </ul>	Both the NC7761 and NC7760 support all shared features of copper gigabit NICs, with these exceptions: <ul style="list-style-type: none"> <li>• Jumbo Frames</li> <li>• Teaming the NC7761 has this limitation: Large Send Offload (LSO) supported only in Microsoft operating systems teams with a NC1020 or another NC7761.</li> </ul>	
<b>NC7760</b> Integrated Gigabit PCI LOM	<ul style="list-style-type: none"> <li>• Chipset: Broadcom 5702</li> </ul>		
<b>NC3163</b> Integrated 10/100PCI LOM	<ul style="list-style-type: none"> <li>• Chipset: Intel 82559</li> </ul>	Supports all shared features of copper gigabit NICs, with these exceptions: <ul style="list-style-type: none"> <li>• Jumbo Frames</li> <li>• Large Send Offload (LSO)</li> <li>• 1000 Mbps Fast Ethernet transfer rate (10/100 only)</li> </ul>	

Model Number & Description	Part Number	Unique Features	Shared Features
InfiniBand adapters, switches, and cables			
<b>NC570C</b> Dual Port PCI-X 4x InfiniBand Server Adapter	376158-B21	<ul style="list-style-type: none"><li>Bus: 64-bit/133MHz PCI-X with</li><li>Chipset: Mellanox InfiniRISC™</li><li>Compatibility with any PCI-X 1.0 compliant I/O slot</li><li>Latency (configuration dependant): &lt;6 μs</li><li>Maximum observed bandwidth (configuration dependant): 7Gbps</li></ul>	<ul style="list-style-type: none"><li>Connector: Two InfiniBand 4x copper</li><li>Distance: 15 meters with 4x InfiniBand copper cabling</li><li>Duplex: half or full</li><li>Memory: 128KB onboard</li><li>InfiniBand v1.1</li><li>MPI v1.2</li><li>IPoB IEFT draft, IPv4 compatible</li><li>SDP IBTA v1.1</li><li>uDAPL v1.2</li><li>SRP 16revA</li><li>FCC Class B</li></ul>
<b>NC570C</b> Dual Port PCI Express 4x InfiniBand Server Adapter	376160-B21	<ul style="list-style-type: none"><li>Bus: x8 PCI Express with 128KB onboard memory</li><li>Chipset: Mellanox InfiniRISC™ III</li><li>Compatibility with any PCI Express 1.0a compliant I/O slot</li><li>Latency (configuration dependant): &lt;5 μs</li><li>Maximum observed bandwidth (configuration dependant): 22Gbps</li></ul>	
24-Port 4x InfiniBand Switch	376227-B21	<ul style="list-style-type: none"><li>Non blocking, cut-through architecture; cut-through port latency of less than 200 ns</li><li>480 Gbps aggregate switch bandwidth (24 ports x 10 Gbps/port x 2 for full duplex)</li><li>Processor: Mellanox InfiniScale™ III</li><li>Compatibility with IBTA v1.1 compliant components</li><li>Ports: Twenty-four (24) 4x (10 Gbps) InfiniBand copper; one (1) 10/100T Management (RJ-45); one (1) console management port (RJ-45)</li><li>Cabling: 15 m (50 ft) with 4x InfiniBand copper cabling</li><li>19 inch rack mounted, 1U (1.75 in) height, 15 in (38.1 cm) deep</li><li>InfiniBand v1.1</li><li>Embedded subnet manager embedded</li><li>Web, command line, and Java-based Element Manager management interfaces</li><li>SNMP v3, RADIUS, Telnet, TFTP, FTP, SSH v2, SSL, NTP, and DNS</li><li>MIB-II, Bridge MIB, Interface MIB, IP Forwarding MIB, Ethernet-like MIB, IB SM InfiniBand Subnet Manager MIB, IB SM InfiniBand Subnet Manager Agent, and private enterprise MIBs</li></ul>	
4x InfiniBand Copper Cables	376232-B21 (1 meter) 376232-B22 (3 meter) 376232-B23 (5 meter)		

## What operating systems are supported with the different types of HP Ethernet NIC teaming and other advanced features?

	Microsoft Windows 2000 and 2003	Red Hat Enterprise Linux 2.1, 3	SUSE LINUX Enterprise Server 8, 9	Novell NetWare 5.0, 5.1, 6.5	SCO UnixWare 7 & 8, OpenServer 5.07
<b>Standard Ethernet Teaming</b>					
Network Fault Tolerance (NFT)	√	√	√	√	√
Transmit Load Balancing with Fault Tolerance (TLB)	√	√	√	√	
Switch-assisted Load Balancing with Fault Tolerance (SLB)	√	√	√	√	
802.3ad Dynamic with Fault Tolerance	√	√	√		
<b>ProLiant Essentials Intelligent Networking Pack option (for Ethernet NICs)</b>					
Switch-assisted Dual Channel Load Balancing (or Dual Channel Teaming)	√				
Advanced redundancy (failover types) <ul style="list-style-type: none"> <li>Active path failover</li> <li>Fast path failover</li> </ul>	√ √				
Virus Throttling	√				

## HP network adapter software compatibility reference table

Model	Microsoft Windows 2000 and 2003	Red Hat Linux 7.2, 7.3, 8.0	Red Hat Enterprise Linux 2.1, 3	SUSE LINUX Enterprise Server 8, 9	United Linux 1.0	Novell NetWare 5.x, 6.x	SCO UnixWare 7.0, 7.1.1, 7.1.3, 8 Open Server 5.0, 5.0.5, 5.0.6, 5.0.7	Sun Solaris x86 version 7, 8, 9	DOS
NC7771	√	√	√	√	√	√	√	√	√
NC7170	√	√	√	√	√	√	√	√	√
NC6770	√	√	√	√	√	√	√	√	√
NC6170	√	√	√	√	√	√	√	√	√
NC1020	√	√	√	√	√	√	√	√	√
NC320T	√		√	√	√	√	All but UW 7.0 and OS 5.0	All but version 7	√
NC310F	√		√	√	√	√	All but UW 7.0 and OS 5.0	All but version 7	√
NC150T	√		√	√	√	√	All but UW 7.0 and OS 5.0	All but version 7	√
NC570C			v2.1 (32-bit) v3 (32-bit, 64-bit)	Version 8 only (32- and 64-bit)	√				
NC571C			v2.1 (32-bit) v3 (32-bit, 64-bit)	Version 8 only (32- and 64-bit)	√				

## Which network adapter should I choose?

Network Adapter Solutions	NC150T	NC310F	NC320T	NC1020	NC6170	NC7170	NC7771	NC570C	NC571C
Do you need Gigabit Ethernet over Category 5 cabling?	√		√	√		√	√		
Do you need Gigabit Ethernet over fiber optic cabling?		√			√				
Do you need two Gigabit Ethernet ports per PCI slot?					√	√			
Do you need a network adapter optimized for 32-bit PCI?				√					
Do you need a network adapter optimized for 64-bit PCI-X?		√			√	√	√	√	
Do you need a network adapter optimized for PCI Express?			√						√
Is high performance the most important factor in making your network adapter selection?								√	√
Is low price the most important factor in making your network adapter selection?	√		√	√					
Do you need up to 4 ports per PCI slot and don't care if the ports are switched ports?	√								