

HP NC552SFP 10Gb 2-port Ethernet Server Adapter User Guide

Abstract

This document is for the person who installs, administers, and troubleshoots servers and storage systems. HP assumes you are qualified in the servicing of computer equipment and trained in recognizing hazards in products with hazardous energy levels.



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Technician notes

Warnings, cautions, and notes

 **WARNING:** Only authorized technicians trained by HP should attempt to repair this equipment. All troubleshooting and repair procedures are detailed to allow only subassembly/module-level repair. Because of the complexity of the individual boards and subassemblies, no one should attempt to make repairs at the component level or to make modifications to any printed wiring board. Improper repairs can create a safety hazard.

 **WARNING:** To reduce the risk of electric shock, personal injury, and damage to the equipment:

- Do not attempt to service any parts of the equipment other than those specified in the following procedure. Any other activities may require that you shut down the server and remove the power cord.
- Installation and maintenance of this product must be performed by individuals who are knowledgeable about the procedures, precautions and hazards associated with the product.

 **WARNING:** To reduce the risk of electric shock or damage to the equipment:

- Do not disable the power cord grounding plug. The grounding plug is an important safety feature.
- Plug the power cord into a grounded (earthed) electrical outlet that is easily accessible at all times.
- Unplug the power cord from the power supply to disconnect power to the equipment.
- Do not route the power cord where it can be walked on or pinched by items placed against it. Pay particular attention to the plug, electrical outlet, and the point where the cord extends from the server.



This symbol indicates the presence of a hot surface or hot component. If this surface is contacted, the potential for injury exists.

WARNING: To reduce the risk of injury from a hot component, allow the surface to cool before touching.

 **CAUTION:** To properly ventilate the system, you must provide at least 7.6 cm (3.0 in) of clearance at the front and back of the server.

 **CAUTION:** The server is designed to be electrically grounded (earthed). To ensure proper operation, plug the AC power cord into a properly grounded AC outlet only.

NOTE: Any indications of component replacement or printed wiring board modifications may void any warranty.

Downloading files

1. Go to the HP website (<http://www.hp.com/#Support>).

2. Select **Support & Drivers**, and then select **Drivers & Downloads**.
3. Type the adapter name in the **Find by product** box, and then click **Go**. For example, type HP NC552SFP 10GbE 2P Adapter.
4. Select the adapter to open the product page.
5. Download the drivers, firmware, or documentation as needed.

HP contact information

For United States and worldwide contact information, see the Contact HP website (<http://www.hp.com/go/assistance>).

In the United States:

- To contact HP by phone, call 1-800-334-5144. For continuous quality improvement, calls may be recorded or monitored.
- If you have purchased a Care Pack (service upgrade), see the Support & Drivers website (<http://www8.hp.com/us/en/support-drivers.html>). If the problem cannot be resolved at the website, call 1-800-633-3600. For more information about Care Packs, see the HP website (<http://pro-aq-sama.houston.hp.com/services/cache/10950-0-0-225-121.html>).

Introduction

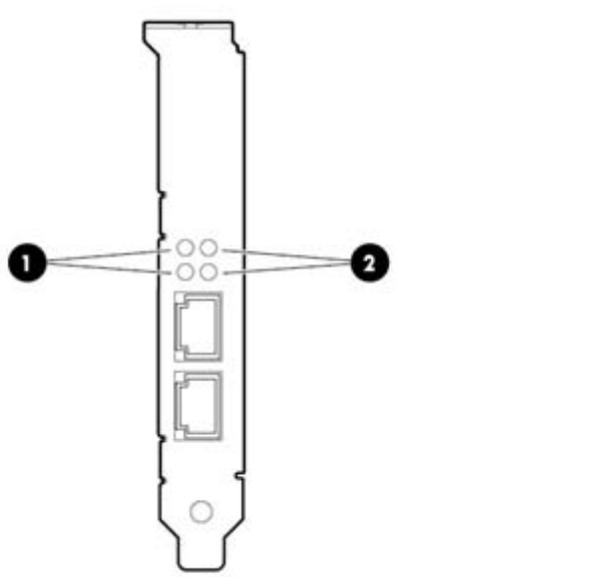
Overview

The HP NC552SFP 10Gb 2-port Ethernet Server Adapter is a dual port 10GbE adapter for ProLiant DL, ML, and SL platforms. The HP NC552SFP 10GbE 2P Adapter uses the BladeEngines 3 (BE3) Emulex chipset and provides NIC-only functionality. The adapter is designed for virtualization and consolidation by providing a high speed, low latency connection to networking infrastructure. The HP NC552SFP 10GbE 2P Adapter ships with advanced server features such as Large Send and Receive offload, VLAN tagging, 9K jumbo frame support, and teaming functionality for both redundancy and load balancing.

For more information about the HP NC552SFP 10Gb 2-port Ethernet Server Adapter, see the HP website (<http://www.hp.com/go/proliantnics>).

LED indicators

The HP NC552SFP 10GbE 2P Adapter has two ports with LED indicators for Link (L) and Activity (A) for each port. Standard-height bracket is shown below with the SFP+ ports and LED indicators.



The HP NC552SFP 10GbE 2P Adapter LED indicators operate as described in the following table.

Item	LED indicator	Status	Description
1	Activity	Off	Indicates no network activity on the link.
		Flashing (Green)	Indicates network activity on the link. The adapter is sending or receiving network data at up to 10 Gb/s.
2	Link	Off	No link to the adapter is established. The adapter is not receiving power or the cable connection is faulty.
		On (Yellow)	Link to the adapter is established. The adapter is receiving power and the cable connection is good.

Installing an adapter

Installation overview

This section describes installation precautions, how to install the adapter, and how to connect the network cable.



WARNING: To reduce the risk of personal injury or damage to the equipment, consult the safety information and user documentation provided with the server before attempting the installation. Some servers contain high energy circuits, high current circuits, moving parts (such as fan blades), or any combination of these hazards, that may be exposed if covers and access panels are removed while the product is connected to a power source. These products are intended to be serviced only by qualified personnel who have been trained to deal with these hazards. Do not remove enclosures or attempt to bypass any interlocks designed to guard against these hazardous conditions.



WARNING: Installation of this adapter should be performed by individuals who are both qualified in the servicing of computer equipment, and trained in the hazards associated with products capable of producing hazardous energy levels. This adapter is intended to be installed in Certified (UL or CSA) ITE equipment having instructions for adding and removing user installed components such as PCI, PCI-X, and PCI Express devices. Refer to the equipment instructions to verify that it is suitable for user installed components and that it has the power capacity to support all of the installed components.

NOTE: Before removing the cover of your server, refer to the HP documentation for the proper methods for installing a PCI Express card and avoiding electric shock hazards.

Preventing electrostatic discharge

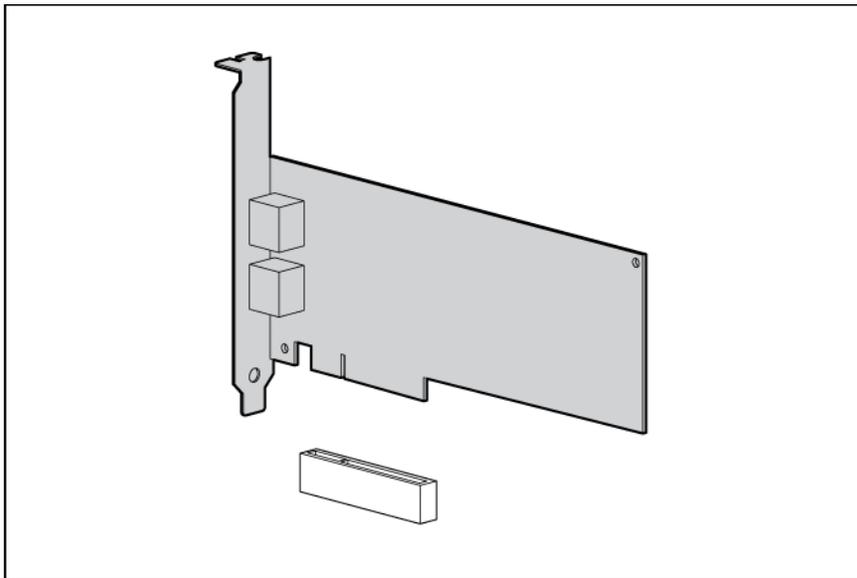
To prevent damaging the system, be aware of the precautions you need to follow when setting up the system or handling parts. A discharge of static electricity from a finger or other conductor may damage system boards or other static-sensitive devices. This type of damage may reduce the life expectancy of the device.

To prevent electrostatic damage:

- Avoid hand contact by transporting and storing products in static-safe containers.
- Keep electrostatic-sensitive parts in their containers until they arrive at static-free workstations.
- Place parts on a grounded surface before removing them from their containers.
- Avoid touching pins, leads, or circuitry.
- Always be properly grounded when touching a static-sensitive component or assembly.

Installing an adapter in a server

See the HP ProLiant server documentation for additional information on how to safely install a PCI Express card in the server.



CAUTION: If the server is not PCI Hot Plug compliant, power it down and disconnect the power cord from the power outlet before removing the server access panel. Failure to do so may damage the adapter or server.

1. Power down the server.
2. Remove the power cord and server access panel.

WARNING: To reduce the risk of personal injury from a hot component, allow the surface of the option card to cool before touching it.

WARNING: To reduce the risk of personal injury from hot surfaces, allow the drives and the internal system components to cool before touching them.

3. Identify the PCI Express option slot in which the adapter is to be installed. If a low profile option slot is to be used, install the low profile bracket onto the adapter.
4. Remove the cover bracket from the PCI Express slot.
5. Firmly seat the adapter in the PCI Express slot and secure the adapter bracket.

NOTE: For 1U type servers you may need to replace the standard profile bracket with a low profile bracket. See "Installing a low profile bracket (on page 8)."

6. Replace the access panel and plug in the power cord.

Installing a low profile bracket

You may have to install a low profile bracket prior to the product installation. The low profile bracket replaces the existing standard profile bracket shipped on the product.

1. Using a correctly sized Phillips head screwdriver, carefully remove the two board lock screws located above and below the SFP+ connectors.
2. Remove the standard profile bracket and place the low profile bracket over the connectors. Be careful not to damage the connectors or bend the low profile bracket.
3. Reinstall the two Phillips screws.

Connecting the network cable

The HP NC552SFP 10GbE 2P Adapter has two SFP+ ports. These ports support either of the following:

- Direct Attached Copper (DAC) cables
- Optical Modules to be used with fiber optic cables

See Cable specifications (on page 10) for the maximum cable length supported.

To connect the HP NC552SFP 10GbE 2P Adapter to the network, complete the following steps:

1. Orient the SFP+ optical module or DAC cable so that the Gold Fingers on the edge of the circuit board is located closest to the option card circuit board.
2. Install the SFP+ optical module or DAC cable all the way into the SFP+ socket until it clicks into place and is securely latched.
3. If an optical module is used, remove the protective cover and connect the fiber optic cable.

Specifications

Cable specifications

SFP+ module type	Cable Connector Type	Wavelength (nm), type of cable	Core Size (microns, μm)	Cable grade	Minimum modal bandwidth (MHz-km)	Maximum Cable Length (meters)
10GBASE-SR (short range) Optical Module	LC	850, Multi-Mode Fiber (MMF)	62.5	("FDDI")	160	26
			62.5	OM1	200	33
			50		400	66
			50	OM2	500	82
			50	OM3	2000	300
10GBASE-CR with Direct Attached Copper (DAC) cable	SFP+	N/A, Twin Axial Copper	24 to 28 AWG, depending on length and manufacturer	N/A	N/A	5

Supported cables for HPN5900

The following cables can connect the adapter to an HPN5900:

- HP X240 10G SFP+ to SFP+ 0.65m DAC cable JD095C
- HP X240 10G SFP+ to SFP+ 1.2m DAC cable JD096C
- HP X240 10G SFP+ to SFP+ 3m DAC cable JD097C
- HP X240 10G SFP+ to SFP+ 5m DAC cable JG081C
- HP X240 QSFP+ 4x10G SFP+ 1m DAC cable JG329A
- HP X240 QSFP+ 4x10G SFP+ 3m DAC Cable JG330A

Supported cables for HPN6600

The following cables can connect the adapter to an HPN6600:

- HP X242 10G SFP+ to SFP+ 1m DAC cable J9281B
- HP X242 10G SFP+ to SFP+ 15m DAC cable J9287B

For more information about product features, specifications, options, configurations, and compatibility, see the product QuickSpecs on the HP Product Bulletin website (<http://www.hp.com/go/productbulletin>).

General specifications

Specification	Value
Controller	Emulex BladeEngine 3 (BE3)
Data rate	20Gb/s, full-duplex
PCI bus	8 Lane (x8) PCI Express Gen 2, compatible with x4 and x8 bus widths
Connectors	2 SFP+
Dimensions (LxW)	6.6 x 2.7 inches (16.765 cm x 6.89 cm) without bracket

Compliance

Compliance	Standard
IEEE	IEEE802.3x, IEEE802.3ad, IEEE802.1p, IEEE802.1q, IEEE802.3ae, IEEE802.3ap, IEEE802.1qau
Safety	UL Mark (US and Canada) EN 60950
Other	PCIe v2.0 RoHS 6 of 6 IPv4, IPv6 CE Microsoft Windows Hardware Quality Labs Server Design Guide version 3.0 SFF-8431- 10 gigabit SFP+ module SNMP IPv4/IPv6 TCP, UDP checksum offload IPv4/IPv6 TCP, large send offload IPv4/IPv6 TCP, large receive offload Receive-side scaling Jumbo frames up to 9000 bytes

Power and environmental specifications

Specification	Value
Operating	Temperature—0° to 55°C (32° to 131°F) Humidity—10 to 90% relative humidity, non-condensing
Non-operating	Temperature—-40° to 70°C (-40° to 158°F) Humidity—5 to 95% relative humidity, non-condensing
Power	10 W typical, 11 W maximum

Regulatory compliance notices

Safety and regulatory compliance

For safety, environmental, and regulatory information, see *Safety and Compliance Information for Server, Storage, Power, Networking, and Rack Products*, available at the HP website (<http://www.hp.com/support/Safety-Compliance-EnterpriseProducts>).

Warranty information

HP ProLiant and X86 Servers and Options (<http://www.hp.com/support/ProLiantServers-Warranties>)

HP Enterprise Servers (<http://www.hp.com/support/EnterpriseServers-Warranties>)

HP Storage Products (<http://www.hp.com/support/Storage-Warranties>)

HP Networking Products (<http://www.hp.com/support/Networking-Warranties>)

Turkey RoHS material content declaration

Türkiye Cumhuriyeti: EEE Yönetmeliğine Uygundur

Ukraine RoHS material content declaration

Обладнання відповідає вимогам Технічного регламенту щодо обмеження використання деяких небезпечних речовин в електричному та електронному обладнанні, затвердженого постановою Кабінету Міністрів України від 3 грудня 2008 № 1057

Electrostatic discharge

Preventing electrostatic discharge

To prevent damaging the system, be aware of the precautions you need to follow when setting up the system or handling parts. A discharge of static electricity from a finger or other conductor may damage system boards or other static-sensitive devices. This type of damage may reduce the life expectancy of the device.

To prevent electrostatic damage:

- Avoid hand contact by transporting and storing products in static-safe containers.
- Keep electrostatic-sensitive parts in their containers until they arrive at static-free workstations.
- Place parts on a grounded surface before removing them from their containers.
- Avoid touching pins, leads, or circuitry.
- Always be properly grounded when touching a static-sensitive component or assembly.

Grounding methods to prevent electrostatic discharge

Several methods are used for grounding. Use one or more of the following methods when handling or installing electrostatic-sensitive parts:

- Use a wrist strap connected by a ground cord to a grounded workstation or computer chassis. Wrist straps are flexible straps with a minimum of 1 megohm ± 10 percent resistance in the ground cords. To provide proper ground, wear the strap snug against the skin.
- Use heel straps, toe straps, or boot straps at standing workstations. Wear the straps on both feet when standing on conductive floors or dissipating floor mats.
- Use conductive field service tools.
- Use a portable field service kit with a folding static-dissipating work mat.

If you do not have any of the suggested equipment for proper grounding, have an authorized reseller install the part.

For more information on static electricity or assistance with product installation, contact an authorized reseller.

Acronyms and abbreviations

CE

Conformité Européenne (European Conformity)

CSA

Canadian Standards Association

DAC

direct attach cable

EN

Ethernet

IPv4

Internet Protocol version 4

IPv6

Internet Protocol version 6

PCI Express

Peripheral Component Interconnect Express

PCIe

Peripheral Component Interconnect Express

RoHS

Restriction of Hazardous Substances

SFF

small form factor

SFP

small form-factor pluggable

UDP

User Datagram Protocol

UL

Underwriters Laboratory

Documentation feedback

HP is committed to providing documentation that meets your needs. To help us improve the documentation, send any errors, suggestions, or comments to Documentation Feedback (<mailto:docsfeedback@hp.com>). Include the document title and part number, version number, or the URL when submitting your feedback.