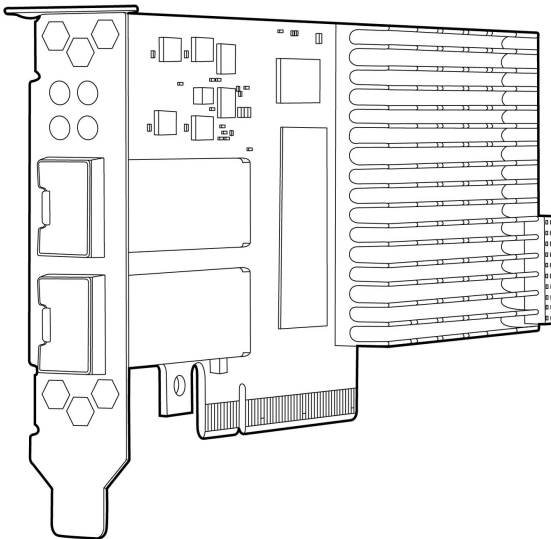


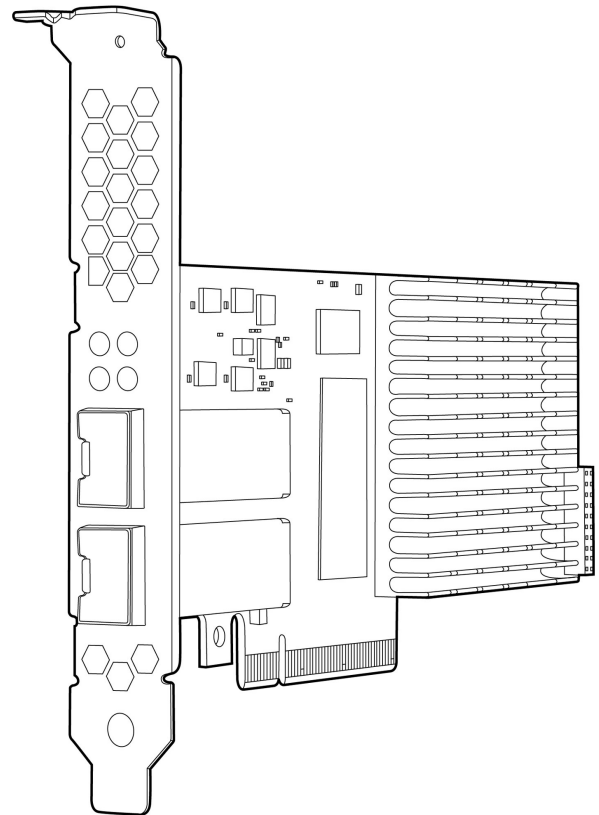
Overview

The NC523SFP is an eight lane (x8) PCI Express (PCIe) 10 Gigabit network solution offering superior bandwidth in a ProLiant Ethernet adapter. This dual port PCI Express Gen 2 adapter supports SFP+ (Small Form-factor Pluggable) connectors, requiring either Direct Attach Cable (DAC) for copper environments, or fiber transceivers supporting short haul (SR) optics plus fiber cables for fiber optic environments.

The NC523SFP ships with advanced server features that ProLiant customers have come to expect, such as support for TCP checksum and segmentation (LSO) offload capability, VLAN tagging, jumbo frames, IPv6, and more. Flexible to order and install, the NC523SFP can be used in either standard or low profile slots.



NC523SFP - Low profile bracket



NC523SFP - Standard bracket

Models

HP NC523SFP 10Gb 2-port Server Adapter

593717-B21

Kit Contents

- HP NC523SFP 10Gb 2-port Server Adapter
- Full height bracket (installed on card)
- Low-profile bracket
- Quick install card
- User documentation and driver download information
- Product warranty statement



Overview

Compatibility

Servers

ProLiant DL (rack-optimized):

- HP ProLiant DL160 G6
- HP ProLiant DL165 G7
- HP ProLiant DL180 G6
- HP ProLiant DL320 G6
- HP ProLiant DL360 G6
- HP ProLiant DL360 G7
- HP ProLiant DL370 G6
- HP ProLiant DL380 G7
- HP ProLiant DL385 G7
- HP ProLiant DL580 G7
- HP ProLiant DL585 G6
- HP ProLiant DL585 G7
- HP ProLiant DL785 G6
- HP ProLiant DL980 G7

ProLiant ML (expansion-optimized):

- HP ProLiant ML330 G6
- HP ProLiant ML350 G6
- HP ProLiant ML370 G6

ProLiant SL (scalable line):

- HP ProLiant SL160z G6
- HP ProLiant SL165z G7
- HP ProLiant SL170z G6
- HP ProLiant SL2x170z G6

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



Standard Features

Performance

Dual-port 10 Gigabit Ethernet Throughput

The 20,000 Mbps full duplex Ethernet transfer rate per port (40 Gbps aggregate full duplex) delivers outstanding network performance that improves response time and removes bottlenecks for the next generation data center. 10 Gigabit Ethernet bandwidth is ideal for high performance computing, database clusters, grid systems, virtualization, server and I/O consolidation, fabric consolidation, and more.

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 NC523SFP is designed with an eight lane (x8) PCI Express bus based on the PCIe v2.0 standard. The adapter is backward compatible with four lane (x4) PCI Express, automatically auto-sensing between x8 and x4 slots.

Jumbo Frames

Jumbo frames (also known as extended frames) permit a 9,000 byte transmission unit (MTU). The NC523SFP adapter supports 9KB jumbo frames as a way to achieve higher throughput and better CPU utilization. Jumbo frames are particularly useful for database transfers and tape backups.

SR-IOV

The NC523SFP supports industry standard SR-IOV (Single Root Input Output Virtualization), which boosts IO performance and simplifies configuration in virtual environments. SR-IOV reduces CPU overhead when sharing networking resources between numerous virtual machines, thereby boosting overall server performance.

TCP Stateless Offloading

For overall improved system response, the NC523SFP adapter 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 Coalescing

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.

802.1p QoS Tagging

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.

Network Management

Management Support

Like all HP ProLiant server adapters, the NC523SFP adapter ships with agents that can be managed from HP Systems Insight Manager or other management application that support SNMP.



Standard Features

Server Integration

The NC523SFP adapter is a validated, tested, and qualified solution that is optimized for HP ProLiant servers. This approach provides a more robust and reliable networking solution than offerings from other vendors and provides users with a single point of contact for both their servers and their network adapters.

LED Indicators

Bracket LED indicators show link integrity and network activity 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.

Additional information regarding worldwide limited warranty and technical support is available at:
<http://h18004.www1.hp.com/products/servers/platforms/warranty/index.html>



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>

HP Insight Remote Support software delivers secure remote support for your HP Servers and Storage, 24



Service and Support

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

Direct Attach Cable	HP 0.5m SFP+ 10GbE Copper Cable	487649-B21
	HP 1m SFP+ 10GbE Copper Cable	487652-B21
	HP 3m SFP+ 10GbE Copper Cable	487655-B21
	HP 5m SFP+ 10GbE Copper Cable	537963-B21
	HP 7m SFP+ 10GbE Copper Cable	487658-B21

NOTE: Direct Attach Cable (DAC) must be purchased separately for copper environments.

Fiber Optic Modules	HP BLc 10Gb SR SFP+	455883-B21
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NOTE: Fiber transceivers and cables must be purchased separately for fiber-optic environments.

Fiber Optic Cables	HP 2m SW LC/SC FC Cable Kit	221691-B21
	HP 5m SW LC/SC FC Cable Kit	221691-B22
	HP 15m SW LC/SC FC Cable Kit	221691-B23
	HP 2m SW LC/LC FC Cable Kit	221692-B21
	HP 5m SW LC/LC FC Cable Kit	221692-B22
	HP 15m SW LC/LC FC Cable Kit	221692-B23
	HP 30 m LC-LC Multi-Mode OM2 Fiber Optic Cable	221692-B26
	HP 50 m LC-LC Multi-Mode OM2 Fiber Optic Cable	221692-B27
	HP .5 m LC-LC Multi-Mode OM3 Fiber Optic Cable	AJ833A
	HP 1 m LC-LC Multi-Mode OM3 Fiber Optic Cable	AJ834A
	HP 5 m LC-LC Multi-Mode OM3 Fiber Optic Cable	AJ836A
	HP 15 m LC-LC Multi-Mode OM3 Fiber Optic Cable	AJ837A
	HP 30 m LC-LC Multi-Mode OM3 Fiber Optic Cable	AJ838A
	HP 50 m LC-LC Multi-Mode OM3 Fiber Optic Cable	AJ839A

NOTE: Fiber transceivers and cables must be purchased separately for fiber-optic environments.

NOTE: For additional information on 10Gb cable specifications go to:

http://www.hewlett-packard.com/rnd/pdfs/10gig_cabling_technical_brief.pdf

Gigabit Server Adapters	HP NC112T PCI Express Gigabit Server Adapter	503746-B21
	HP NC360T PCI Express Dual Port Gigabit Server Adapter	412648-B21
	HP NC364T PCI Express Quad Port Gigabit Server Adapter	435508-B21
	NOTE: Does not support Windows 2000.	
	HP NC365T 4-port Ethernet Server Adapter	593722-B21
	HP NC373F PCI Express Multifunction Gigabit Server Adapter	394793-B21
	HP NC373T PCI Express Multifunction Gigabit Server Adapter	394791-B21
	HP NC375T PCI Express Quad Port Gigabit Server Adapter	538696-B21
	NOTE: Supported on a full length-full height slot only.	
	HP NC382T PCI Express Dual Port Multifunction Gigabit Server Adapter	458492-B21



Related Options

10 Gigabit Server Adapters

NOTE: No more than two 10GbE I/O devices are supported in a single ProLiant server.

NOTE: A minimum of two Gigabytes (2 GB) of server memory is required per each adapter.

NOTE: Direct Attach Cable (DAC) for copper environments or fiber transceivers and cables for fiber-optic environments must be purchased separately.

HP NC522SFP Dual Port 10GbE Server Adapter

468332-B21

HP NC524SFP Dual Port 10GbE Server Adapter

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

NOTE: Please see the QuickSpecs for Technical Specifications and additional information: www.hp.com/go/ProLiantNICs



Technical Specifications

Compliance	IEEE	802.3ae,802.3ad, 802.1p, 802.1Q 802.3x	
	Safety	UL, Canada UL, EN 60950	
	Emissions	FCC Class A, VCCI Class A, BSMI Class A, CISPR 22 Class A, ACA Class A, EN55022 Class A, EN55024-1, ICES-003 Class A, MIC Class A	
	Other	PCIe v2.0	
		RoHS compliance 6 of 6	
IPv4, IPv6			
CE			
ACPI 1.1a			
General Specifications		Microsoft WHQL (Windows Hardware Quality Labs)	
		Server Design Guide version 3.0 (SDG 3.0)	
	Controller	QLogic cLOM8214	
	Onboard memory	256MB	
	Data rate	10,000 Mbps per port, (40 Gbps aggregate full duplex, dual ports)	
	Data Path	8 Lane (x8) PCI Express, compatible with x4 and x8 bus widths	
	Dimensions (LxW)	6.6 x 2.7 in (16.7 x 6.8 cm) without bracket	
Power and Environmental Specifications	Operating	Temperature	32° to 131° F (0° to 55° C)
		Humidity	10% to 90% non-condensing
	Non-operating	Temperature	-40° to 158° F (-40° to 70° C)
		Humidity	5% to 95%
	Power	17 Watts typical, 19 Watts maximum	
Operating System Support	Microsoft Windows Server 2008, Server 2008R2, and HPC Server 2008, 32 and 64-bit		
	Microsoft Windows Server Hyper-V		
	Red Hat Enterprise Linux 5.x and 6.0		
	SLES 10 and 11		
	VMware 4.0 and 4.1		
NOTE: For more Linux OS support & certification information, please visit our the ProLiant & BladeSystem Server Linux matrix: http://h18004.www1.hp.com/products/servers/linux/hpLinuxcert.html			

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.
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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.



Technical Specifications

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