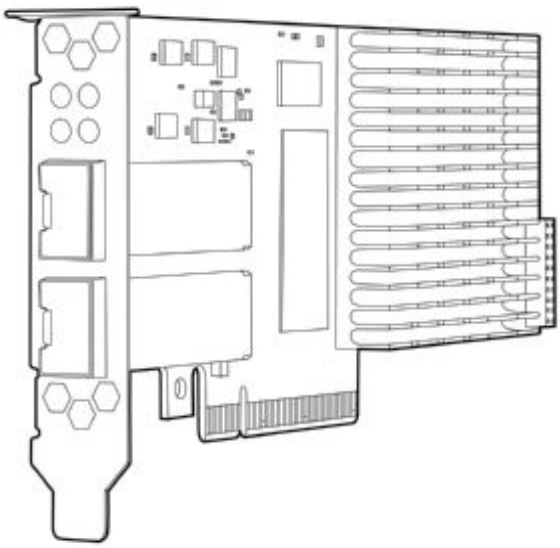
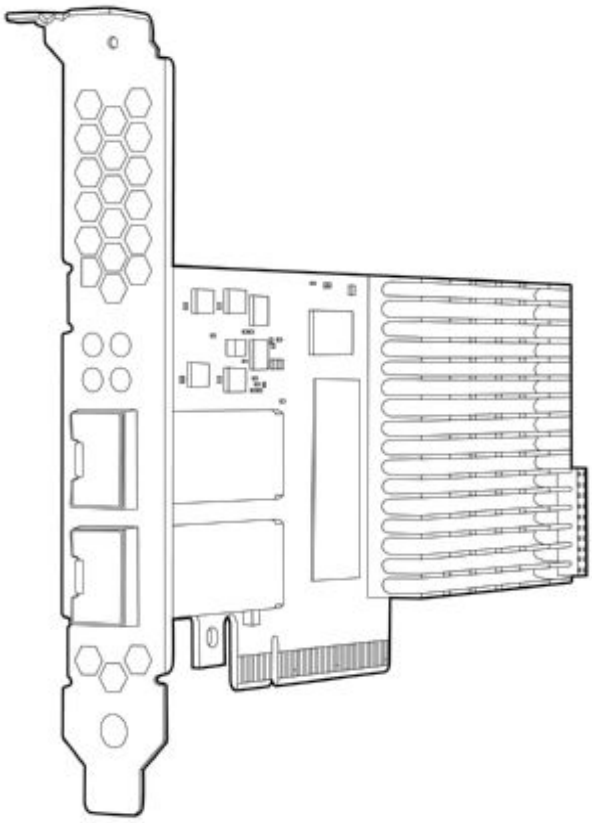
Overview

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 and 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

Compatibility

Servers

ProLiant DL (rack-optimized):

- HP ProLiant DL160 G6
- HP ProLiant DL160 Gen8
- HP ProLiant DL165 G7
- HP ProLiant DL180 G6
- 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 G7
- HP ProLiant DL380e Gen8
- HP ProLiant DL380p Gen8
- HP ProLiant DL385 G7
- HP ProLiant DL385p Gen8
- HP ProLiant DL560 Gen8
- 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 ML310e Gen8
- HP ProLiant ML310e Gen8 v2
- HP ProLiant ML330 G6
- 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 G7
- HP ProLiant SL170z G6
- HP ProLiant SL2x170z G6
- HP ProLiant SL210t Gen8
- HP ProLiant SL230s Gen8
- HP ProLiant SL250s Gen8
- HP ProLiant SL270s Gen8

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.

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.

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 venders 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

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 cos 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

Recommended HP Care Pack Services for optimal satisfaction with your HP produc

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

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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 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.

Service and Support

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/services/storage

Related Options

Direct Attach Cable	HP BladeSystem c-Class Small Form-Factor Pluggable .5m 10GbE Copper Cable	487649-B21
	HP BladeSystem c-Class Small Form-Factor Pluggable 1m 10GbE Copper Cable	487652-B21
	HP BladeSystem c-Class Small Form-Factor Pluggable 3m 10GbE Copper Cable	487655-B21
	HP BladeSystem c-Class Small Form-Factor Pluggable 5m 10GbE Copper Cable	537963-B21
	HP BladeSystem c-Class Small Form-Factor Pluggable 7m 10GbE Copper Cable	487658-B21
	NOTE: Direct Attach Cable (DAC) must be purchased separately for copper environments.	
Fiber Optic Modules	HP BladeSystem c-Class 10Gb Short Range Small Form-Factor Pluggable Option	455883-B21
	HP BladeSystem c-Class 10Gb Long Range Small Form-Factor Pluggable Option	455886-B21
	HP BladeSystem c-Class 10Gb Long Range Mode Small Form-Factor Pluggable Option	455889-B21
	NOTE: Fiber transceivers and cables must be purchased separately for fiber-optic environments.	
Fiber Optic Cables	HP 2M LC-SC Cable Kit (2Gb to 1Gb)	221691-B21
	5M LC-SC Cable Kit (2Gb to 1Gb)	221691-B22
	HP 15M LC-SC Cable Kit (2Gb to 1Gb)	221691-B23
	HP 2m LC-LC FC Cable Kit	221692-B21
	5m LC-LC FC Cable Kit	221692-B22
	HP 15m LC-LC FC Cable Kit	221692-B23
	HP 30m LC-LC FC Cable Kit	221692-B26
	HP 50m LC-LC FC Cable Kit	221692-B27
	HP LC to LC Multi-mode OM3 2-Fiber 0.5m 1-Pack Fiber Optic Cable	AJ833A
	HP LC to LC Multi-mode OM3 2-Fiber 1.0m 1-Pack Fiber Optic Cable	AJ834A
	HP LC to LC Multi-mode OM3 2-Fiber 5.0m 1-Pack Fiber Optic Cable	AJ836A
	HP LC to LC Multi-mode OM3 2-Fiber 15.0m 1-Pack Fiber Optic Cable	AJ837A
	HP LC to LC Multi-mode OM3 2-Fiber 30.0m 1-Pack Fiber Optic Cable	AJ838A
	HP LC to LC Multi-mode OM3 2-Fiber 50.0m 1-Pack 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	
Additional Supported Cables (Plug into HPN5900)	HP X240 10G SFP+ to SFP+ 0.65m Direct Attach Copper Cable	JD095C
	HP X240 10G SFP+ to SFP+ 1.2m Direct Attach Copper Cable	JD096C
	HP X240 10G SFP+ to SFP+ 3m Direct Attach Copper Cable	JD097C
	HP X240 10G SFP+ to SFP+ 5m Direct Attach Copper Cable	JG081C
	HP X240 10G SFP+ to SFP+ 7m Direct Attach Copper Cable	JC784C
	HP X240 QSFP+ 4x10G SFP+ 1m DAC Cable	JG329A
	HP X240 QSFP+ 4x10G SFP+ 3m DAC Cable	JG330A
	HP X240 QSFP+ 4x10G SFP+ 5m DAC Cable	JG331A
Additional Supported Cables (Plug into HPN6600)	HP X242 10G SFP+ to SFP+ 1m Direct Attach Copper Cable	J9281B
	HP X242 10G SFP+ to SFP+ 3m Direct Attach Copper Cable	J9283B
	HP X242 10G SFP+ to SFP+ 7m Direct Attach Copper Cable	J9285B
	HP X242 SFP+ 15m DAC Cable	J9287B

Related Options

Gigabit Server Adapters	HP NC112T PCI Express Gigabit Server Adapter	503746-B21
	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 NC373T PCI-E Multifunction Gigabit Server Adapter	394791-B21
	HP NC373F PCI-E Multifunction 1000SX Gigabit Svr Adapter	394793-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 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	**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 Microsoft WHQL (Windows Hardware Quality Labs) Server Design Guide version 3.0 (SDG 3.0)	
General Specifications	**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. 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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