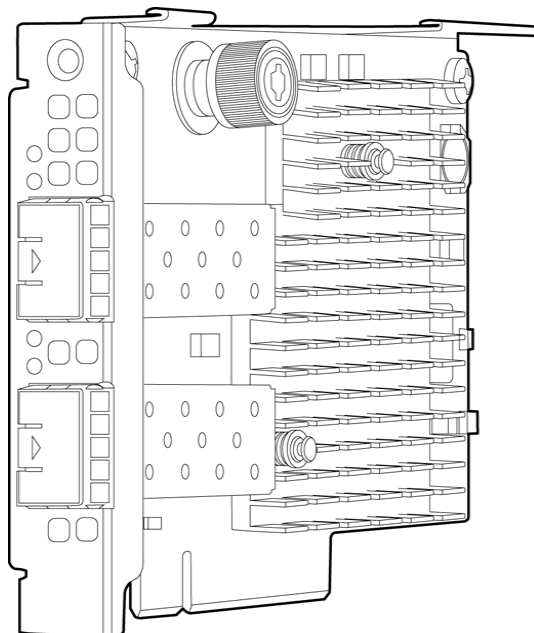## Overview

The HP Ethernet 10Gb 2-port 571FLR-SFP+ Adapter based on the Performant SFC9020 controller from Solarflare is designed to address issues facing data center managers today. Equipped to handle the application loads of the latest multi-core processors, the HP Ethernet 571 adapter also delivers unmatched power efficiency for the consolidation and deployment of high-density servers.

Models

HP Ethernet 10Gb 2-port 571FLR-SFP+ Adapter	728992-B21
HP Ethernet 10Gb 2-port 571FLR-SFP+ FIO Adapter	728993-B21

Kit contents

- HP Ethernet 10Gb 2-port 571FLR-SFP+ Adapter
- Quick install card
- Product warranty statement

Compatibility

Servers

ProLiant DL (rack-optimized):

- HP ProLiant DL360p Gen8
- HP ProLiant DL380p Gen8

NOTE: This is a list of Supported Servers. Some may be discontinued.

Standard Features

Product Features	• Supports Open-Onload® high-performance user-level network stack for Linux • Industry-leading throughput and latency performance • Up to 40Gb/s bi-directional near line rate throughput • Hardware acceleration TCP/IP/UDP stateless intelligent offloads • SR-IOV capable in hardware (requires server FW, SW and OS support) • PXE, Jumbo Frames, Checksum & Segmentation Offload, IPv6 and RSS • On board temperature monitor • Standard server operating system support • Standard NC series option kit warranty, support, services • Field replaceable and upgradeable • Preboot eXecution Environment (PXE) enabled • Integrated PHY and MAC
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 financial services, high performance computing, database clusters, iSCSI storage, storage backups, grid systems, virtualization, server and I/O consolidation, fabric consolidation, and more.
PCI Express Interface	The HP 571FLR-SFP+ Adapter is designed with an eight lane (x8) PCI Express bus based on the PCIe v2.0 standard.
Jumbo Frames	The HP 571FLR-SFP+ Adapter supports jumbo frames (also known as extended frames), permitting up to a 9K byte (KB) transmission unit (MTU) when running Ethernet I/O traffic. This is over 5X the size of a standard 1500-byte Ethernet frame. With jumbo frames, networks can achieve higher throughput performance and greater CPU utilization. These attributes are particularly useful for database transfer and tape backup operations.
TCP/IP Stateless Offloading	For overall improved system response, the HP 571FLR-SFP+ 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. TCP, IP, UDP checksum offload, Large Send Offload (LSO), TCP, Segmentation Offload (TSO). These features optimize host efficiency, leaving the CPU available for other duties.

Standard Features

MSI and MSI-X & Interrupt Coalescing	Interrupt coalescing (interrupt moderation) groups multiple packets, thereby reducing the number of interrupts sent to the host. This process can optimize host efficiency by improving peak throughput and reducing CPU utilization. Message Signaled Interrupt (Extended) provides performance benefits for multi-core servers by load balancing interrupts between CPUs/cores. The HP 571FLR-SFP+ Adapter supports MSI and MSI-X.
802.1Q VLANs	IEEE 802.1Q virtual local area network (VLAN) protocol allows each physical port of the HP 571FLR-SFP+ adapter to be separated into multiple virtual NICs for added network segmentation and enhanced security and performance. VLANs increase security by isolating traffic between users. Limiting the broadcast traffic to within the same VLAN domain also improves performance. The HP 571SFP+ Adapter provides support for 802.1Q (VLAN).
Optimized for Virtualization	I/O Virtualization support for VMware NetQueue, Microsoft VMQ and Virtualization Technology for Connectivity (VT-c) help meet the performance demands of consolidated virtual workloads. Compliant with Single-Root I/O Virtualization (SR-IOV), accommodating multiple Virtual Machines (VMs) to share single PCIe resources. The HP 570FLR-SFP+ Adapter is SR-IOV ready, requiring software and OS support.
Checksum & Segmentation Offload	Normally the TCP Checksum is computed by the protocol stack. However, with the 570SFP+ the checksum is computed by the adapter. Segmentation Offload is technique for increasing outbound throughput of high-bandwidth network connections by reducing CPU overhead. The technique is also called TCP segmentation offload (TSO) when applied to TCP, or generic segmentation offload (GSO). The HP 570FLR-SFP+ Adapter has Checksum and Segmentation Offload capabilities
IPv6	IPv6 uses 128-bit addressing allowing for more devices and users on the internet. IPv4 supported 32-bit addressing. The HP 571FLR-SFP+ Adapter supports IPv6.
Receive Side Scaling (RSS)	RSS resolves the single-processor bottleneck by allowing the receive side network load from a network adapter to be shared across multiple processors. RSS enables packet receive-processing to scale with the number of available processors. The HP 571FLR-SFP+ Adapter has RSS capabilities.

Standard Features

Receive Flow Steering (RFS)	Receive Flow Steering (RFS) acceleration improves processing efficiency by steering received packets to the CPU core that is running the application that consumes those packets. Aligning I/O processing to the CPU core running the application improves cache efficiency, CPU utilization, throughput and latency. The HP 571FLR-SFP+ Adapter can accelerate RFS in hardware.
Network Adapter Teaming	The HP 571FLR-SFP+ Adapter support for NIC teaming helps IT administrators increase network fault tolerance and increased network bandwidth, The team of adapters can work together as a single virtual adapter. The HP 571SFP+ Adapter provides support for several different types of teaming enabling IT administrators to optimize availability, improve performance and help reduce costs.

Network Management

Management Support	Like all HP ProLiant server adapters, the HP 571FLR- SFP+ adapter ships with agents that can be managed from HP Systems Insight Manager or other management application that support SNMP.
Server Integration	The HP 571FLR-SFP+ Adapter is a validated, tested, and qualified solution that is optimized for HP ProLiant servers. HP validates a wide variety of major operating systems drivers with the full suite of web-based enterprise management utilities including HP Intelligent Provisioning and HP Systems Insight Manager that simplify network management. 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.
Configuration Utilities	Each HP 571FLR-SFP+ Adapter ships with a suite of operating system-tailored configuration utilities that allow the user to enable initial diagnostics and configure adapter teaming. This includes a teaming GUI for Microsoft Windows operating systems. Additionally, support for scripted installations of teams in a Microsoft Windows environment allow for unattended OS installations.
LED Indicators	Bracket LED indicators show link integrity and network activity for easy troubleshooting.
Preboot eXecution Environment (PXE)	Pre-boot execution environment (PXE) enables automatic deployment of computing resources remotely from anywhere. It allows a new or existing server to boot over the network and download software, including the operating system, from a management / deployment server at another location on the network. Additionally, PXE enables decentralized software distribution and remote troubleshooting and repairs.
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 Technology Services** HP Technology Services offers you consultants and support experts to solve your most complex infrastructure problems. We help keep your business running, boost availability, and avoid downtime. **Protect your business beyond warranty with HP Care Pack Services** When you buy HP Options, it's also a good time to think about what level of service you may need. HP Care Pack services provide total care and support expertise with committed response choices designed to meet your IT and business need. HP Foundation Care services deliver scalable support-packages for HP industry-standard servers and software. You can choose the type and level of service that is most suitable for your business needs. New to this portfolio is HP Collaborative Support. If you are running business critical environments, HP offers Proactive Care or Critical Advantage. These services help you deliver high levels of application availability through proactive service management and advanced technical response. Here is the support service recommendation from the Foundation Care and Proactive Care portfolio. For customized support service solution, HP can work with you to tailor a service solution for your unique support requirements using broader services portfolio of Foundation Care and Proactive Care.

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

Recommended Services	**3-Year HP 24x7 4 hour Response, Hardware Support Onsite Service** 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. http://h20195.www2.hp.com/V2/GetPDF.aspx/5982-6547EEE.pdf **OR** **3-Year HP 24x7 4 hour Response, HP Collaborative Support** Offers customers a single point of contact for server problem diagnosis, hardware problem resolution, and basic software problem diagnosis, fault isolation, and resolution if available to HP. If the problem is with HP HW, the representative 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. In case, the issue is with HP or supported third-party software product and cannot be resolved by applying known fixes, HP will contact the third-party vendor and create a problem incident on your behalf. **HP ProLiant Server Hardware Installation** Provides for the basic hardware installation of HP branded servers, storage devices and networking options to assist you in bringing your new hardware into operation in a timely and professional manner http://h20195.www2.hp.com/V2/GetPDF.aspx/5981-9356EN.pdf

QuickSpecs

Service and Support

Related HP Care Pack Services to enhance your HP product experience

Related Services

3-Year HP 24x7 4 hour Response, Proactive Care or Critical Advantage
Helps optimize your systems and delivers high levels of application availability through proactive service management and advanced technical response. A skilled Technical Manager will own your query or issue end to end until resolved, delivering a single point of contact for you
http://h20195.www2.hp.com/V2/GetPDF.aspx/4AA3-2140ENW.pdf

OR

3-Year HP 6-hour Onsite Call-to-Repair, HP Collaborative Support
Offers customers a single point of contact for server problem diagnosis, hardware problem resolution to return the hardware in operating condition within 6 hours of the initial service request to the HP Global Solution Center, and basic software problem diagnosis, fault isolation, and resolution if available to HP. In case, the issue is with HP or supported third-party software product and cannot be resolved by applying known fixes, HP will contact the third-party vendor and create a problem incident on your behalf.

HP Proactive Select Service
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.pdf

Insight Remote Support

Provides 24 X 7 remote monitoring, proactive notifications, and problem resolution. Learn more http://www.hp.com/go/insightremotesupport

HP Support Center

Personalized online support portal with access to information, tools and experts to support HP business products. Submit support cases online, chat with HP experts, access support resources or collaborate with peers. Learn more http://www.hp.com/go/hpsc

HP's Support Center Mobile App* allows you to resolve issues yourself or quickly connect to an agent for live support. Now, you can get access to personalized IT support anywhere, anytime.
HP Insight Remote Support and HP Support Center are available at no additional cost with a HP warranty, HP Care Pack or HP contractual support agreement.

*HP' Support Center Mobile App is subject to local availability

Parts and materials

HP will provide HP-supported replacement parts and materials necessary to maintain the covered hardware product in operating condition, including parts and materials for available and recommended engineering improvements. Supplies and consumable parts will not be provided as part of this service; standard warranty terms and conditions apply. Parts and components that have exceeded their maximum supported lifetime and/or the maximum usage limitations as set forth in the manufacturer's operating manual or the technical product data sheet will not be provided, repaired or replaced as part of this service.

QuickSpecs

Service and Support

Warranty / Service Coverage

For ProLiant servers and storage systems, this service covers HP-branded hardware options qualified for the server, purchased at the same time or afterward, internal to the enclosure, as well as external monitors up to 22" and tower UPS products; these items will be covered at the same service level and for the same coverage period as the server unless the maximum supported lifetime and/or the maximum usage limitation has been exceeded. Coverage of the UPS battery is not included; standard warranty terms and conditions apply.

The defective media retention service feature option applies only to Disk or eligible SSD/Flash Drives replaced by HP due to malfunction. It does not apply to any exchange of Disk or SSD/Flash Drives that have not failed. SSD/Flash Drives that are specified by HP as consumable parts and/or that have exceeded maximum supported lifetime and/or the maximum usage limit as set forth in the manufacturer's operating manual or the technical data sheet are not eligible for the defective media retention service feature option.

For more information

To learn more on services for HP ESSN Options, please contact your HP sales representative or HP Authorized Channel Partner. Or visit: http://www.hp.com/services/proliant or www.hp.com/services/bladesystem

QuickSpecs

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 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+ SFP+ 7m Direct Attach Copper Cable	JC784C

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 BLc Virtual Connect 1Gb SX Small Form Factor Pluggable Option Kit	453151-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

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 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
	HP Ethernet 10Gb 2-port 571SFP+ Adapter	728987-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
	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

General Specifications	Network Processor	Solarflare (SFC 9020)	
	Data rate	Two ports, each at 20 Gbps full duplex; 40 Gbps aggregate full duplex theoretical bandwidth.	
	Bus type	PCI-e v2.0 at 5 GT/s, x8	
	Form factor	Standard and low profile adapter compliant with the PCIe standard	
	IEEE Compliance	802.3, 802.3x, 802.3ad, 802.3p, 802.1q, 802.3ae	
Power and Environmental Specifications	Operating	Temperature	41° to 131° F (5° to 55° C)
		Humidity	5% to 95% non-condensing
	Power	7.5W maximum (5.9 W Typical)	
	Emissions classification	Class B	
	Agency Approvals	USA	FCC Part 15 Class B
		Canada	CAN ICES-3 (B)/NMB-3 (B)
		Japan	VCCI 2011-04 Class B
		International	EN55022:2010 + Class B, EN55024:2010; EN61000-3-2:2006, EN61000-3-3:2008
		Taiwan	BSMI, CNS13438 (2006) Class A
		Australia/New Zealand (AS/NZS)	AS/NZS CISPR 22: 2009+A1:2010 Class
		Korea	KN22 Class B, KN24
	RoHS Compliance	EU RoHS Directive 2011/65/EU	
	Safety	UL Mark (USA and Canada)	
		CE Mark	
		EN 605901 2nd edition	

Operating System Support	Red Hat Enterprise Linux 5. 8, 5.9, 6.2 and 6.3
	SLES 10 SP4 and 11SP2
	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

Technical Specifications

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.