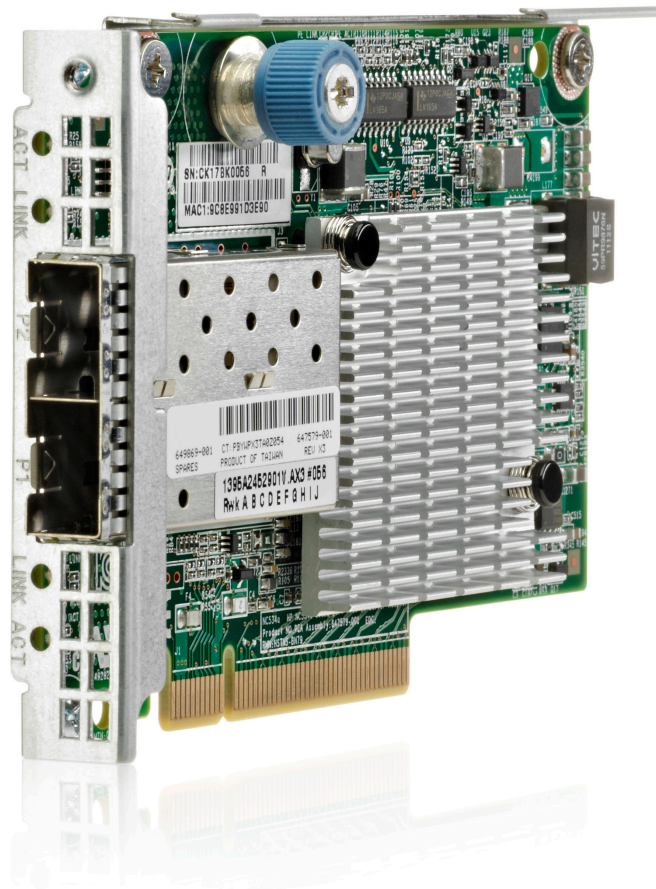


Overview

HPE Ethernet 10Gb 2-port 530FLR-SFP+ Adapter

The HPE Ethernet 10Gb 2-port 530FLR-SFP+ adapter features the next generation, single chip 10GbE solution from QLogic in a FlexibleLOM form factor designed for select HPE ProLiant servers.

The HPE 530FLR dual-port design with a total aggregate throughput of 20 Gb meets the needs for customers desiring high bandwidth. The HPE 530FLR supports enterprise class features such as VLAN tagging, adaptive interrupt coalescing, MSI-X, NIC teaming (bonding), Tunneling Offloads (NVGRE, VxLAN),# Receive Side Scaling (RSS), jumbo frames, PXE boot and virtualization features such as SR-IOV, Network Partitioning, VMware NetQueue and Microsoft VMQ.



HPE Ethernet 10Gb 2-port 530FLR-SFP+ Adapter

Platform Information

Models

HP Ethernet 10Gb 2-port 530FLR-SFP+ Adapter	647581-B21
HP Ethernet 10Gb 2-port 530FLR-SFP+ FIO Adapter	684210-B21

Kit Contents	HP Ethernet 10Gb 2-port 530FLR-SFP+ Adapter Quick install card Product warranty statement
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Compatibility - Supported Servers	HPE ProLiant DL160 Gen8 HPE ProLiant DL360p Gen8 HPE ProLiant DL380p Gen8 HPE ProLiant DL385p Gen8 HPE ProLiant DL560 Gen8 HPE ProLiant SL230s Gen8 HPE ProLiant SL250s Gen8 HPE ProLiant SL270s Gen8 HPE ProLiant XL220a Gen8 v2
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NOTE: This is a list of supported servers. Some may be discontinued.

Standard Features

At a Glance Features

- Flexible-LOM for select HPE Rack servers
- Hardware acceleration and offloads for stateless TCP/IP, TCP Offload Engine (TOE)
- Industry-leading throughput and latency performance
- Up to 40 Gb/s bi-directional near-line rate throughput
- Improved small packet performance
- Tunnel offload support (NVGRE, VxLAN)
- Integrated PHY and MAC
- Support for Preboot eXecution Environment (PXE)
- Optimized for virtual server environments with support for Network Partitioning (NPAR) and Single-Root I/O Virtualization (SR-IOV).

Throughput-Theoretical Bandwidth

This adapter delivers 20 Gb/s bi-directional Ethernet transfer rate per port (40 Gb/s per adapter), providing the network performance needed to improve response times and alleviate bottlenecks.

802.1Q VLANs

IEEE 802.1Q virtual local area network (VLAN) protocol allows each physical port of this 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.

Configuration Utilities

This 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 patented teaming GUI for Microsoft Windows operating systems. Additionally, support for scripted installations of teams in a Microsoft Windows environment allow for unattended OS installations.

DPDK

This adapter supports DPDK with benefit for packet processing acceleration and use in NFV deployments.

HPE Sea Of Sensors 3D

Support for the HPE Sea of Sensors which is a collection of 32 sensors that automatically track thermal activity - heat - across the server. When temperatures get too high, sensors can initiate fans and make other adjustments to reduce energy usage. A significant improvement lies in the ability to apply fan speed increases only to the portion of the system that is rising in temperature, rather than all six fans in unison, which reduces the amount of energy used for cooling.

Jumbo Frames

This adapter supports Jumbo Frames (also known as extended frames), permitting up to a 9,000 byte (KB) transmission unit (MTU) when running Ethernet I/O traffic. This is over five times 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.

LED Indicators

LED indicators show link integrity and network activity for easy troubleshooting.

Standard Features

Management Support	This adapter ships with agents that can be managed from HPE Systems Insight Manager or other management application that support SNMP.
Message Signaled Interrupt (Extended) (MSI-X)	Message Signaled Interrupt (Extended) provides performance benefits for multi-core servers by load balancing interrupts between CPUs/cores.
Network Adapter Teaming	This 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, providing support for several different types of teaming enabling IT administrators to optimize availability, improve performance and help reduce costs.
Network Partitioning (NPAR)	This adapter supports Network Partitioning (NPAR) allowing administrators to configure a 10 Gb port as four separate partitions or physical functions. Each PCI function is associated with a different virtual NIC. To the OS and the network, each physical function appears as a separate NIC port.
Optimized for Virtualization	I/O Virtualization support for VMware NetQueue and Microsoft VMQ helps meet the performance demands of consolidated virtual workloads.
Preboot eXecution Environment (PXE)	Support for 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.
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.
Server Integration	<p>This adapter is a validated, tested, and qualified solution that is optimized for HPE ProLiant servers. Hewlett Packard Enterprise validates a wide variety of major operating systems drivers with the full suite of web-based enterprise management utilities including HPE Intelligent Provisioning and HPE Systems Insight Manager that simplify network management.</p> <p>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.</p>
Single-Root I/O Virtualization	Single-Root I/O Virtualization (SR-IOV) provides a mechanism to bypass the host system hypervisor in virtual environments providing near metal performance and server efficiency. SR-IOV provides mechanism to create multiple Virtual Functions (VFs) to share single PCIe resources. The device is capable of SR-IOV, and requires Server BIOS support, controller firmware, and OS support.
TCP/UDP/IP	For overall improved system response, this adapter supports standard TCP/IP offloading techniques including:

Standard Features

TCP/IP, UDP 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.

TOE TCP/IP Offload Engine (TOE) shifts the processing of data in the TCP protocol stack from the server CPU to the adapter's processor, freeing server CPU cycles for other operations.

Tunnel Offload Minimize the impact of overlay networking on host performance with tunnel offload support for VXLAN and NVGRE. By offloading packet processing to adapters, customers can use overlay networking to increase VM migration flexibility and virtualized overlay networks with minimal impact to performance. HPE Tunnel Offloading increases I/O throughput, reduces CPU utilization, and lowers power consumption. Tunnel Offload supports VMware's VXLAN and Microsoft's NVGRE solutions.

Warranty Maximum: The remaining warranty of the HPE product in which it is installed (to a maximum three-year, limited warranty).
Minimum: One year limited warranty.
NOTE: Additional information regarding worldwide limited warranty and technical support is available at: <http://h17007.www1.hpe.com/us/en/enterprise/servers/warranty/index.aspx#.V4e3tPkrJhE>

Service and Support

Service and Support **NOTE: This adapter is covered under HPE Support Services/ Service Contract applied to the HPE ProLiant Server or enclosure. No separate HPE Support Services# need to be purchased.**

Most HPE branded options sourced from HPE that are compatible with your product will be covered under your main product support at the same level of coverage, allowing you to upgrade freely. Additional support is required on select workload accelerators, switches, racks and UPS options 12KVA and over. Coverage of the UPS battery is not included under HPE support services; standard warranty terms and conditions apply.

Warranty and Support Services

Warranty and Support Services will extend to include HPE options configured with your server or storage device. The price of support service is not impacted by configuration details. HPE sourced options that are compatible with your product will be covered under your server support at the same level of coverage allowing you to upgrade freely. Installation for HPE options is available as needed. To keep support costs low for everyone, some high value options will require additional support. Additional support is only required on select high value workload accelerators, fibre switches, InfiniBand and UPS options 12KVA and over. Coverage of the UPS battery is not included under TS support services; standard warranty terms and conditions apply.

Protect your business beyond warranty with HPE Support Services

HPE Technology Services delivers confidence, reduces risk and helps customers realize agility and stability. Connect to HPE to help prevent problems and solve issues faster. HPE Support Services enable you to choose the right service level, length of coverage and response time as you purchase your new server, giving you full entitlement to the support you need for your IT and business.
Protect your product, beyond warranty.

Parts and Materials

Hewlett Packard Enterprise will provide HPE-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. Parts and components that have reached their maximum supported lifetime and/or the maximum usage limitations as set forth in the manufacturer's operating manual, product quick-specs, or the technical product data sheet will not be provided, repaired, or replaced as part of these services. The defective media retention service feature option applies only to Disk or eligible SSD/Flash Drives replaced by Hewlett Packard Enterprise due to malfunction.

For more information

Visit the Hewlett Packard Enterprise Service and Support [website](#).

Related Options

Cables - Direct Attach	HP BladeSystem c-Class 10GbE SFP+ to SFP+ 0.5m Direct Attach Copper Cable	487649-B21
	HP BladeSystem c-Class 10GbE SFP+ to SFP+ 1m Direct Attach Copper Cable	487652-B21
	HP BladeSystem c-Class 10GbE SFP+ to SFP+ 3m Direct Attach Copper Cable	487655-B21
	HP BladeSystem c-Class 10GbE SFP+ to SFP+ 5m Direct Attach Copper Cable	537963-B21
	HPE FlexNetwork X240 10G SFP+ to SFP+ 3m Direct Attach Copper Cable	JD097C
	HPE FlexNetwork X240 10G SFP+ to SFP+ 1.2m Direct Attach Copper Cable	JD096C
	HPE FlexNetwork X240 10G SFP+ to SFP+ 0.65m Direct Attach Copper Cable	JD095C
	HPE FlexNetwork X240 10G SFP+ to SFP+ 5m Direct Attach Copper Cable	JG081C
	HPE FlexNetwork X240 10G SFP+ SFP+ 7m Direct Attach Copper Cable	JC784C

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

Cables - Fiber Optic	HPE LC to LC Multi-mode OM3 2-Fiber 0.5m 1-Pack Fiber Optic Cable	AJ833A
	HPE LC to LC Multi-mode OM3 2-Fiber 1.0m 1-Pack Fiber Optic Cable	AJ834A
	HPE LC to LC Multi-mode OM3 2-Fiber 5.0m 1-Pack Fiber Optic Cable	AJ836A
	HPE LC to LC Multi-mode OM3 2-Fiber 15.0m 1-Pack Fiber Optic Cable	AJ837A
	HPE LC to LC Multi-mode OM3 2-Fiber 30.0m 1-Pack Fiber Optic Cable	AJ838A
	HPE 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.

Transceivers	HP BladeSystem c-Class 10Gb SFP+ SR Transceiver	455883-B21
	HP BladeSystem c-Class 10Gb SFP+ LR Transceiver	455886-B21

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

Technical Specifications

General Specifications	Network Processor Data Rate	QLogic 57810S chipset Two ports, each at 20 Gb/s bi-directional; 40 Gb/s aggregate bi-directional theoretical bandwidth.
	Bus type Form Factor IEEE Compliance	PCI Express 2.0 (Gen 2) x8 FlexibleLOM 802.3, 802.1ab, 802.3x, 802.3ad, 802.3p, 802.1q, 802.3ae, 802.1Qau, 802.3ap
Power and Environmental Specifications	Power Temperature - Operating Temperature - Non-Operating Humidity - Operating Humidity - Non-operating Agency Approvals	<12W 0° to 55°C (32° to 131°F) -65° to 85° C (-85° to 185° F) 10% to 90% non-condensing 5% to 95% non-condensing USA: FCC Part 15 Class A Canada: ICES-003, Issue 4 Japan: VCCI V3 (2010.04) Class A International: EN55022:2006 + A1:2007 Class A; EN55024:1998+A1:2011+A2; EN61000-3-2:2006, EN61000-3-3:2008 Taiwan: BSMI, CNS13438 (2006) Class A Australia/New Zealand (AS/NZS): EN55022:2006+A12007 class A Korea: KN22 Class A, KN24
	RoHS Compliance Safety	6 of 6 UL Mark (USA and Canada) CE Mark EN 60590
Operating System and Virtualization Support	The Operating Systems supported by this adapter are based on the server OS support. Please refer to the OS Support Matrix at https://www.hpe.com/us/en/servers/server-operating-systems.html .	
Environment-friendly Products and Approach - End-of-life Management and Recycling	Hewlett Packard Enterprise offers end-of-life product return, trade-in, and recycling programs in many geographic areas, for our products. Products returned to Hewlett Packard Enterprise will be recycled, recovered or disposed of in a responsible manner. The EU WEEE Directive (2012/19/EU) 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 Enterprise web site . These instructions may be used by recyclers and other WEEE treatment facilities as well as Hewlett Packard Enterprise OEM customers who integrate and re-sell Hewlett Packard Enterprise equipment.	

Summary of Changes

Date	Version History	Action	Description of Change
23-Oct-2017	Version 22	Changed	Technical specifications - operating system, Service and Support and Part and Materials sections were updated.
23-Oct-2016	Version 21	Changed	Add DPDK support and update servers.
23-Sep-2016	Version 20	Changed	Overview, Standard Features, Service and Support, Related Options, Technical Specifications sections were updated.
		Removed	SKUs deleted in Related Options sections: 593722-B21, 647594-B21, 615732-B21, 652497-B21, 593717-B21, 614203-B21, 656596-B21, 665249-B21, 716591-B21, 718904-B21, 629135-B21, 665240-B21, 647581-B21, 665243-B21, 700699-B21, 717491-B21, 629138-B21, 700759-B21, 700751-B21, 629142-B21, 503746-B21.
19-Jun-2015	Version 19	Changed	Compatibility, Standard Features, Related Options and Technical Specifications sections were updated.
		Removed	Obsolete SKUs 221691-B21, 221691-B22, 221691-B23, 221692-B21, 221692-B22, 221692-B23, 221692-B26, 221692-B27, 412648-B21, 435508-B21, 394791-B21, 394793-B21, 538696-B21, 458492-B21, 468332-B21, 489892-B21, 581201-B21
28-Nov-2014	Version 18	Changed	Overview, Standard Features and Technical Specifications sections were updated
		Added	SKU Added on Models: 684210-B21
10-Sep-2013	Version 17	Changed	10 Gigabit Server Adapters and FlexibleLOM Adapters were revised.
01-Mar-2013	Version 16	Changed	Updated the Related Options Section.
19-Feb-2013	Version 15	Changed	Updated the Overview Section, Standard Features and Related Options Section.
04-Jan-2013	Version 14	Changed	A description and SKU change was made in the Related Options section.
04-Dec-2012	Version 13	Changed	Changes made in the Compatibility and Related Options sections.
10-Oct-2012	Version 12	Changed	Change made in the Compatibility section only.
28-Sep-2012	Version 11	Changed	Changes made in Related Options section.
24-Sep-2012	Version 10	Changed	Changes made in Compatibility section.
31-Aug-2012	Version 9	Removed	Removed a note in the Related Options sections.
20-Aug-2012	Version 8	Changed	Changes made in Overview and Related Options sections.
13-Jul-2012	Version 7	Added	Added Fiber Optic Module to Related Options.
12-Jun-2012	Version 6	Changed	Changes were made to General Specifications.
08-Jun-2012	Version 5	Changed	Changes were made to the Compatibly, Related Options and Technical Specifications sections.
18-May-2012	Version 4	Changed	Minor edit was made in Operating System Support.
30-Mar-2012	Version 3	Changed	Minor edit was made in Operating System Support.
09-Mar-2012	Version 2	Changed	Changes made in the Overview, Standard Features and Technical Specifications sections.
06-Mar-2012	Version 1	New	Initial Version.



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