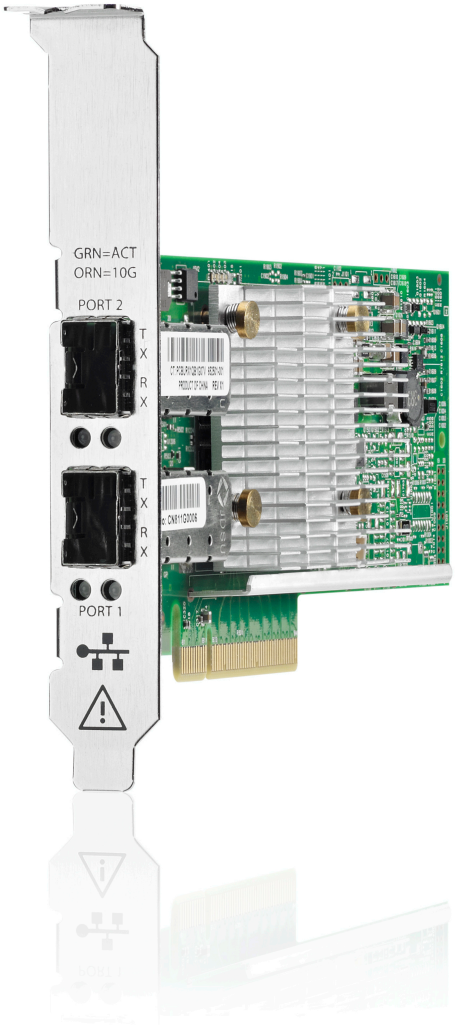
Overview **For latest information on this product please use HPE Ethernet 10Gb SFP+ Adapters QuickSpecs**

HPE Ethernet 10Gb 2-port 530SFP+ Adapter

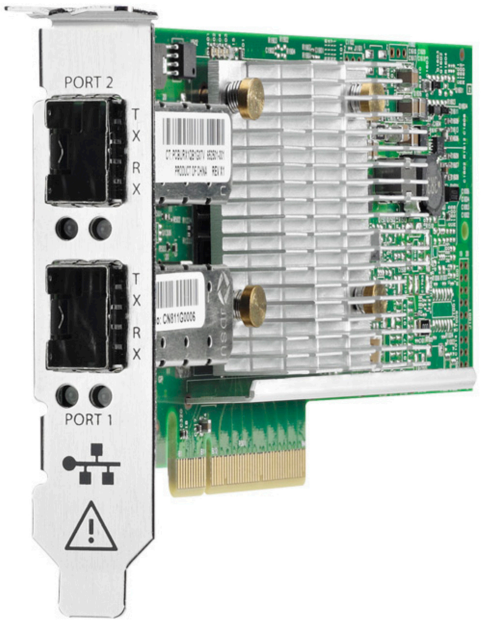
Recommended SKU - This adapter is a recommended option that has been selected by HPE experts to provide the right technology for a range of workloads and market segments offering the best combination of performance, value and availability.
The HPE 530SFP+ is a dual-port 10Gb Ethernet adapter featuring the next generation 57810S single-chip solution from QLogic in a PCIe 2.0 compliant form factor designed for select HPE ProLiant servers.
Leveraging QLogic's market-proven architecture and software, the HPE 530SFP+ delivers full line-rate performance across all ports with low power consumption.
The HPE 530SFP+ supports enterprise class features such as VXLAN 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.
Support for HPE Sea of Sensors 3D Technology enhances server performance while reducing energy use and expense.

Overview



HPE Ethernet 10Gb 2-port 530SFP+ Adapter, with full-height bracket

Overview



HPE Ethernet 10Gb 2-port 530SFP+ Adapter, with half-height bracket

Platform Information

Models

HPE Ethernet 10Gb 2-port 530SFP Adapter	652503-B21

Kit Contents	HPE Ethernet 10Gb 2-port 530SFP+ Adapter Quick install card Product warranty statement
Compatibility - Supported Servers	HPE ProLiant DL20 Gen9 Server HPE ProLiant DL60 Gen9 Server HPE ProLiant DL80 Gen9 Server HPE ProLiant DL120 Gen9 Server HPE ProLiant DL160 Gen9 Server HPE ProLiant DL180 Gen9 Server HPE ProLiant DL360 Gen9 Server HPE ProLiant DL360 Gen10 Server HPE ProLiant DL380 Gen9 Server HPE ProLiant DL380 Gen10 Server HPE ProLiant DL560 Gen9 Server HPE ProLiant DL560 Gen10 Server HPE ProLiant DL580 Gen9 Server HPE ProLiant DL580 Gen10 Server HPE ProLiant ML30 Gen9 Server HPE ProLiant ML350 Gen9 Server HPE Apollo 2000-XL170r Gen9 Server HPE Apollo 2000-XL190r Gen9 Server HPE Apollo 4200 Gen9 Server HPE Apollo 4500 XL450 Gen9 Server HPE Apollo 6500 XL270d Gen9 Server **NOTE:** This is a list of supported servers. Some may be discontinued.

Standard Features

At a Glance Features

- Industry-leading throughput and latency performance
- Operates at 1 Gbps/10 Gbps, auto-negotiation, on both ports
- Up to 40 Gb/s bi-directional near line rate throughput
- Hardware acceleration TCP/IP/UDP stateless offloads, as well as for TCP Offload Engine (TOE)
- Improved small packet performance: Supports UEFI and legacy boot options and Tunnel offload support (NVGRE, VXLAN)
- Low profile design shipping with standard height and low-profile brackets
- Optimized for virtual server environments with support for Network Partitioning (NPAR) and Single-Root I/O Virtualization (SR-IOV)Active Health Systems support via FW (OCBB), I2C capable
- PXE, Jumbo Frames, Checksum & Segmentation Offload, IPv6 and RSS
- On chip temperature monitor (OCSD)
- Standard server operating system support
- Field replaceable and upgradeable
- Support for Preboot eXecution Environment (PXE)
- Integrated PHY and MAC
- IEEE 1588 (Time Synchronization)

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.

Checksum & Segmentation Offload

Normally the TCP Checksum is computed by the protocol stack. 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).

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.

Converged Network Utility (CNU)

This adapter supports Converged Network Utility (CNU) a manageability application to configure converged network adapters (CNAs) and Ethernet adapters on HPE servers. This host based utility supports for both GUI and Command Line Interface (scriptable), and can be used to configure Ethernet, FCoE, iSCSI and NPAR related features/functionality on multiple OS platforms including Windows and Linux. CNU is able to configure

Standard Features

	multiple HPE adapters from various network controllers at the same time. Users can benefit easier setup steps, shorter re-boot time, and one-stop solution for multiple adapters via CNU.
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.
IPv6	IPv6 uses 128-bit addressing allowing for more devices and users on the internet. IPv4 supported 32-bit addressing.
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.
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.

Standard Features

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	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. 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.
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: 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.
Precision Time Protocol (IEEE 1588 PTP)	Synchronization of system clocks throughout a network, achieving clock accuracy in the sub-microsecond range, making it suitable for measurement and control systems.
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, NVGRE and GENEVE. 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, Microsoft's NVGRE solutions and Generic Network Virtualization Encapsulation (GENEVE) solutions.

Standard Features

VMware NewQueue and Microsoft Virtual Machine Queue (VMQ)	VMware NetQueue is technology that significantly improves performance of 10 Gigabit Ethernet network adapters in virtualized environments. Windows Hyper-V VMQ (VMQ) is a feature available on servers running Windows Server 2008 R2 with VMQ-enabled Ethernet adapters. VMQ uses hardware packet filtering to deliver packet data from an external virtual machine network directly to virtual machines, which reduces the overhead of routing packets and copying them from the management operating system to the virtual machine.
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	HPE BladeSystem c-Class 10GbE SFP+ to SFP+ 0.5m Direct Attach Copper Cable	487649-B21
	HPE BladeSystem c-Class 10GbE SFP+ to SFP+ 1m Direct Attach Copper Cable	487652-B21
	HPE BladeSystem c-Class 10GbE SFP+ to SFP+ 3m Direct Attach Copper Cable	487655-B21
	HPE BladeSystem c-Class 10GbE SFP+ to SFP+ 5m Direct Attach Copper Cable	537963-B21
	HPE BladeSystem c-Class 10GbE SFP+ to SFP+ 5m Direct Attach Copper Cable	487658-B21
	HP X242 10G SFP+ to SFP+ 1m Direct Attach Copper Cable	J9281B
	HP X242 10G SFP+ to SFP+ 3m Direct Attach Copper Cable	J9283B
	HPE BladeSystem c-Class 10GbE SFP+ to SFP+ 5m Direct Attach Copper Cable	J9285B
	HP X240 10G SFP+ SFP+ 3m DAC Cable	JD097C
	HP X240 10G SFP+ SFP+ 5m DAC Cable	JG081C
	HP X240 10G SFP+ SFP+ 0.65m DAC Cable	JD095C
	HP X240 10G SFP+ SFP+ 1.2m DAC Cable	JD096C
	HP X240 10G SFP+ SFP+ 7m DAC 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	HPE BladeSystem c-Class 10Gb SFP+ SR Transceiver	455883-B21
	HPE 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**	Cavium 57810S chipset
	Data Rate	Two ports, each at 20 Gb/s bi-directional; 40 Gb/s aggregate bi-directional theoretical bandwidth.
	Onboard Memory	PCI Express 2.0 (Gen 2) x8
	Form Factor	Standard and low profile adapter compliant with the PCIe standard
	IEEE Compliance	802.3, 802.3ae, 802.3x, 802.2x, 802.3ad, 802.1Qaz, 802.1Qau, 802.1Qbb, 802.1Qbg, 802.1ax
Power and Environmental Specifications	**Power**	9W maximum
	Temperature - Operating	0° to 55°C (32° to 131°F)
	Humidity - Operating	5% to 95% non-condensing
	Agency Approvals	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 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	6 of 6
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
07-May-2018	Version 30	Changed	Compatibility section was updated
05-Mar-2018	Version 29	Changed	General Specifications section was updated
05-Feb-2018	Version 28	Changed	Overview section was updated
18-Dec-2017	Version 27	Changed	Standard Features-At a Glance Features was updated
06-Nov-2017	Version 26	Changed	Technical Specifications-OS and Virtualization Support section was updated.
		Added	SKUs added in Related Options section: 487658-B21, J9281B, J9283B, J9285B, JD097C, JG081C, JD095C, JD096C, JC784C
16-Oct-2017	Version 25	Changed	Overview and Technical Specifications-OS were updated.
11-Jul-2017	Version 24	Changed	Compatibility section was updated.
10-Feb-2017	Version 23	Changed	Overview, Compatibility, Standard Features and Technical Specifications sections were updated.
07-Oct-2016	Version 22	Changed	Add DPDK support
23-Sep-2016	Version 21	Changed	QuickSpecs sections were updated.
22-Jul-2016	Version 20	Changed	QuickSpecs sections were updated.
		Removed	Obsolete SKUs were deleted: 503746-B21.
19-Jun-2015	Version 19	Changed	Compatibility, Standard Features, Related Options sections were updated.
		Removed	Obsolete SKUs removed: 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, Compatibility, Standard Features and Technical Specifications were updated
10-Sep-2013	Version 17	Changed	Compatibility, 10 Gigabit Server Adapters, and FlexibleLOM Adapters were revised.
15-Mar-2013	Version 16	Added	Technical Specifications: Added 802.3ae to the General Specifications section.
01-Mar-2013	Version 15	Changed	Updated the Related Options section.
19-Feb-2013	Version 14	Changed	Updated Overview, Standard Features, Related Options and Technical Specifications.
04-Jan-2013	Version 13	Changed	A description and SKU change was made in the Related Options section.
04-Dec-2012	Version 12	Changed	Changes made in the Compatibility, Related Options and Technical Specifications sections.
15-Nov-2012	Version 11	Changed	Change made in the Technical Specifications section only.
24-Oct-2012	Version 10	Changed	Changes made in the Related Options section.
10-Oct-2012	Version 9	Changed	Changes made in the Compatibility section.
09-Oct-2012	Version 8	Changed	Changes made in Compatibility section.
03-Oct-2012	Version 7	Changed	Changes were made in Related Options section.
28-Sep-2012	Version 6	Changed	Changes were made in Related Options section.
24-Sep-2012	Version 5	Changed	Changes were made in Compatibility section.

Date	Version History	Action	Description of Change
20-Aug-2012	Version 4	Changed	Changes were made in Compatibility section.
13-Jul-2012	Version 3	Changed	Changes were made in Related Options.
25-Jun-2012	Version 2	Changed	Changes were made in Technical Specifications.
04-Jun-2012	Version 1	New	QuickSpecs was created.

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