Overview

HPE Ethernet 10Gb 2-port 562SFP+ Adapter

The HPE Ethernet 10Gb 2-port 562SFP+ Adapter features the latest Intel controller. It is a low-cost, low-power dual port PCIe v3.0 x8 adapter designed for HPE ProLiant Gen9 servers. The HPE 562SFP+ addresses the demanding needs of the next-generation data center by providing unmatched features for virtualization and scalability that complement the HPE Gen9 server platform.

The HPE 562SFP+ comes with both low profile and standard brackets and has two SFP+ cages that enable connections with DACs as well as SR fiber optic modules. The HPE 562SFP+ adapter supports SR-IOV and high performance networking features such as VLAN tagging, low latency interrupts, TCP and UDP checksum offloading, MSI-X, NIC teaming (bonding), Receive Side Scaling (RSS), jumbo frames, and PXE boot.

Models

HPE Ethernet 10Gb 2-port 562SFP+ Adapter   727055-B21

Kit contents
- HPE Ethernet 10Gb 2-port 562SFP+ Adapter
- Quick install card
- Product warranty statement

Compatibility

Servers
- DL60 Gen9
- DL80 Gen9
- DL120 Gen9
- DL160 Gen9
- DL180 Gen9
- DL360 Gen9
- DL380Gen9
- DL560 Gen9
- DL580 Gen9
  ML110 Gen9
- ML150 Gen9
- ML350 Gen9
  Apollo 2000 XL170r Gen9
- Apollo 2000 XL190r Gen9
- Apollo 4200 Gen9
- Apollo 4500 - XL450 Gen9
- Apollo 6000 – XL230a Gen9
- Apollo 6000 – XL250a Gen9
- Apollo 6000 – XL260a Gen9
- Apollo 6000 – XL270d Gen9

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

Standard Features

Product Features	• Industry-leading throughput and latency performance
	• Up to 40Gb/s bi-directional near line rate throughput
	• Hardware acceleration TCP/IP/UDP stateless intelligent offloads
	• No firmware updates required - less management and downtime
	• Low profile design shipping with standard height and low-profile brackets
	• Supports SR-IOV (requires server FW, SW and OS support)
	• PXE, Jumbo Frames, Checksum & Segmentation Offload, IPv6 and RSS
	• On chip temperature monitor
	• Standard server operating system support
	• Standard NC series option kit warranty, support, services
	• Field replaceable and upgradeable
	• Support for Preboot eXecution Environment (PXE)
	• Integrated PHY and MAC
	• IEEE 1588 (Time Synchronization)

Dual-port 10 Gigabit Ethernet Throughput

The HPE 562SFP+ Adapter delivers 20 Gbps full duplex Ethernet transfer rate per port (40 Gbps per adapter), providing the network performance needed to improve response times and alleviate bottlenecks that impact performance of next generation data centers. 10Gb Ethernet bandwidth is ideal for high performance computing, database clusters, video on demand and more.

PCI Express Interface

The HPE 562SFP+ Adapter is designed with an eight lane (x8) PCI Express bus based on the PCIe v3.0 standard. The adapter is backward compatible with four lane (x4) PCI Express, automatically auto-sensing between x8 and x4 slots.

Jumbo Frames

The HPE 562SFP+ 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.

DPDK

The HPE 562SFP+ adapter supports DPDK with benefit for packet processing acceleration and use in NFV deployments.

TCP/IP Stateless Offloading

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.

The HPE 562SFP+ Adapter powered by Intel® X710 controller offers TCP/IP stateless intelligent offloading capability.

MSI and MSI-X

Message Signaled Interrupt (Extended) provides performance benefits for multi-core servers by load balancing interrupts between CPUs/cores. The HPE 562SFP+ Adapter supports MSI and MSI-X.

802.1Q VLANs

IEEE 802.1Q virtual local area network (VLAN) protocol allows each physical port of the HPE 562SFP+ 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 HPE 562SFP+ Adapter provides support for 802.1Q (VLAN).

Standard Features

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 HPE 562SFP+ Adapter supports SR-IOV, requiring software and OS support
Checksum & Segmentation Offload	Normally the TCP Checksum is computed by the protocol stack. By selecting one of the "Checksum Offload" parameters, the checksum can be 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 HPE 562SFP+ 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 HPE 562SFP+ 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 HPE 562SFP+ Adapter has RSS capabilities.
Time synchronization implementations (PTP)	Synchronization of system clocks throughout a network, achieving clock accuracy in the sub-microsecond range, making it suitable for measurement and control systems.
	The HPE 562SFP+ Adapter supports Precision Time Protocol-ready (PTP) IEEE 1588 & 802.1AS
Network Adapter Teaming	The HPE 562SFP+ 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 HPE 562SFP+ 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	The HPE 562SFP+ Adapter can be administered from HPE Systems Insight Manager (SIM). The adapters can be managed individually or in teams, providing SNMP based statistics for reporting purposes. The HPE 562SFP+ Adapter can also be managed by other applications with SNMP support.
Server Integration	The HPE 562SFP+ 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

Standard Features

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 HPE 562SFP+ 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.
LED Indicators	The colored LEDs on each port of the HPE 562SFP+ Adapter indicate link status and link activity.
Preboot eXecution Environment (PXE)	PXE allows the server to boot over the network and download software residing in the network.
HPE Sea of Sensors 3D	Support for HPE's 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 kick on fans and make other adjustments to reduce energy usage. What makes it better is the upgrade from all six fans kicking on at one time to a new system where only one kicks on - the one in proximity of the area that started heating up - thus reducing the amount of energy used for cooling.
VMware NetQueue 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. The HPE Ethernet 10Gb 2-port 560SFP+ Adapter support VMware NetQueue and Windows Hyper-V VMQ.
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. 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	**HPE Technology Services** HPE 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 HPE Care Pack Services
When you buy HPE Options, it's also a good time to think about what level of service you may need. HPE Care Pack services provide total care and support expertise with committed response choices designed to meet your IT and business need.

HPE Foundation Care services deliver scalable support-packages for Hewlett Packard Enterprise 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 HPE Collaborative Support. If you are running business critical environments, Hewlett Packard Enterprise 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, Hewlett Packard Enterprise 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 HPE Care Pack Services for optimal satisfaction with your HPE product

Recommended Services

3-Year HPE 24x7 4 hour Response, Hardware Support Onsite Service
Provides you with rapid remote support and if required an Hewlett Packard Enterprise 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://h20566.www2.hpe.com/portal/site/hpsc?ac.admitted=1467740454177.125225703.1938120508

OR
3-Year HPE 24x7 4 hour Response, HPE 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 HPE. If the problem is with HPE 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 HPE or supported third-party software product and cannot be resolved by applying known fixes, Hewlett Packard Enterprise will contact the third-party vendor and create a problem incident on your behalf.

HPE ProLiant Server Hardware Installation
Provides for the basic hardware installation of Hewlett Packard Enterprise branded servers, storage devices and networking options to assist you in bringing your new hardware into operation in a timely and professional manner
https://www.hpe.com/h20195/v2/GetDocument.aspx?docname=5981-9356EN

Related HPE Care Pack Services to enhance your HPE product experience

Related Services   **3-Year HPE 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

Service and Support

http://h20566.www2.hpe.com/portal/site/hpsc?ac.admitted=1467740454177.125225703.1

OR
3-Year HPE 6-hour Onsite Call-to-Repair, HPE 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 HPE Global Solution Center, and basic software problem diagnosis, fault isolation, and resolution if available to HPE. In case, the issue is with HPE or supported third-party software product and cannot be resolved by applying known fixes, Hewlett Packard Enterprise will contact the third-party vendor and create a problem incident on your behalf.

HPE Proactive Select Service
Provides a flexible way to purchase HPE 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.
https://www.hpe.com/h20195/v2/GetDocument.aspx?docname=4AA3-8855ENW&search=4AA3-8855ENW

Insight Remote Support	Provides 24 X 7 remote monitoring, proactive notifications, and problem resolution. Learn more **http://h20564.www2.hpe.com/hpsc/doc/public/display?docId=c04844073**
HPE Support Center	Personalized online support portal with access to information, tools and experts to support Hewlett Packard Enterprise business products. Submit support cases online, chat with HPE experts, access support resources or collaborate with peers. Learn more **https://www.hpe.com/us/en/support.html**
	The HPE 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.
	HPE Insight Remote Support and HPE Support Center are available at no additional cost with a HPE warranty, HPE Care Pack or Hewlett Packard Enterprise contractual support agreement.
	NOTE: The Hewlett Packard Enterprise Support Center Mobile App is subject to local availability
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. 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.
Warranty / Service Coverage	For ProLiant servers and storage systems, this service covers HPE-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 HPE 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 HPE 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.

Service and Support

For more   To learn more on services for HPE ESSN Options, please contact your Hewlett Packard Enterprise sales
information   representative or Hewlett Packard Enterprise Authorized Channel Partner. Or visit:
                    https://www.hpe.com/us/en/servers

Related Options

Direct Attach Cable	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 FlexNetwork X240 10G SFP+ to SFP+ 0.65m Direct Attach Copper Cable	JD095C
	HPE FlexNetwork X240 10G SFP+ to SFP+ 1.2m Direct Attach Copper Cable	JD096C
	HPE FlexNetwork X240 10G SFP+ to SFP+ 3m Direct Attach Copper Cable	JD097C
	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
	HPE X242 10G SFP+ to SFP+ 1m Direct Attach Copper Cable	J9281B
	HPE X242 10G SFP+ to SFP+ 3m Direct Attach Copper Cable	J9283B
	HPE X242 10G SFP+ to SFP+ 7m Direct Attach Copper Cable	J9285B
	HP X242 10G SFP+ to SFP+ 15m Direct Attach Copper Cable	J9287B

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

Fiber Optic Modules	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.

Fiber Optic Cables	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.

Technical Specifications

General Specifications	Network Processor	Intel® X710 Controller	
	Data rate	Two ports, each at 20 Gbps full duplex; 40 Gbps aggregate full duplex theoretical bandwidth.	
	Onboard Memory	256MB	
	Bus type	PCI-e v3.0 at 8 GT/s, x8	
	Form factor	Standard and low profile adapter compliant with the PCIe standard	
	IEEE Compliance	802.3, 802.1ab, 802.3x, 802.3ad, 802.3p, 802.1q, 802.3ae, 802.1au, 802.3ap, 802.1as, 802.3ak,802.1qaz, 802.1Qbb	

Power and Environmental Specifications	Operating	Temperature	32° to 131° F (0° to 55° C)
		Humidity	5% to 95% non-condensing
	Power	10.8W maximum (10 W Typical)	
	Emissions classification	Class B	
	Agency Approvals	USA	FCC Part 15 Class B
		Canada	ICES=--3, Issue 5
		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 B
		Australia/New Zealand (AS/NZS):	AS/NZS CISPR 22: 2009+A1:2010 Class
		Korea	KN22 Class B, KN24
	RoHS Compliance	5 of 6	
	Safety	UL Mark (USA and Canada)	
		CE Mark	
		EN 605901 2nd edition	

Operating System Support	Microsoft Windows Server 2012 R2, Server 2008, Server 2008R2, and HPC Server 2008, 32 and 64-bit
	Microsoft Windows Server Hyper-V
	Microsoft Windows Small Business Server 2011
	Red Hat Enterprise Linux 5.7 and 6.1
	SLES 10 and 11
	VMware 4.1u2 and 5.0u1
	Solaris 10
	NOTE: For more Linux OS support & certification information, please visit our the ProLiant & BladeSystem Server Linux matrix: **http://h17007.www1.hpe.com/us/en/enterprise/servers/supportmatrix/redhat_linux.aspx#.V4e8tPkrJD8**

Environment-friendly Products and Approach	End-of-life Management and Recycling	Hewlett Packard Enterprise offers end-of-life Hewlett Packard Enterprise product return, trade-in, and recycling programs in many geographic areas. For trade-in information, please go to: **https://www.hpe.com/us/en/living-progress.html.** To recycle your product, please go to: **https://www.hpe.com/us/en/living-**

Technical Specifications

progress.html or contact your nearest Hewlett Packard Enterprise sales office. Products returned to Hewlett Packard Enterprise 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 Enterprise web site at: **https://www.hpe.com/us/en/living-progress.html** 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 equipment.

Summary of Changes

Date	Version History	Action	Description of Change
10-Feb-2017	From Version 2 to 3	Changed	Compatibility, Standard Features, Service and Support, Related Options, and Technical Specifications sections were updated.
		Removed	Obsolete SKUs were deleted: 453151-B21, 647594-B21, 615732-B21, 652497-B21, 652503-B21, 656596-B21, 665249-B21, 716591-B21, 718904-B21, 665240-B21, 647581-B21, 665243-B21, 700699-B21, 717491-B21, 700759-B21, 700751-B21.
07-Oct-2016	From Version 1 to 2	Changed	Add DPDK support
31-Mar-2016	Version 1	Created	New QuickSpecs

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