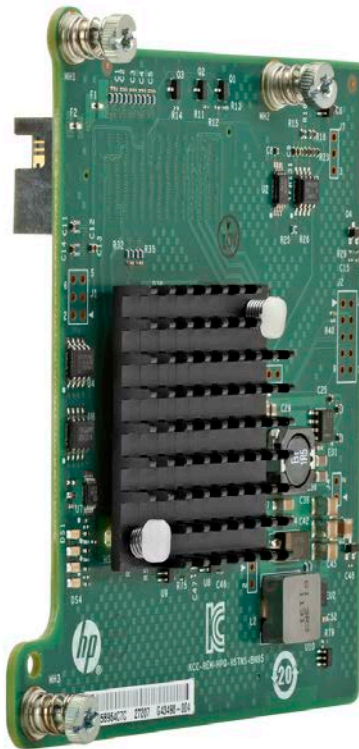


Overview

HPE Ethernet 10Gb 2-port 560M Adapter

The HPE Ethernet 10Gb 2-port 560M adapter features the latest generation 10GbE Intel® 82599 controller. The HPE 560M is a low cost, low-power dual port PCIe v.2.0 x8 lane mezzanine adapter designed for HPE ProLiant Gen8 BL-c servers. The HPE 560M addresses the demanding needs of the next-generation cloud and data center by providing unmatched features for virtualization, scalability to keep up with the HPE ProLiant Gen8 server platform, with proven and reliable performance Hewlett Packard Enterprise customers have come to expect.

The HPE 560M supports enterprise class features such as VLAN tagging, adaptive interrupt coalescing, MSI-X, NIC teaming (bonding), Receive Side Scaling (RSS), jumbo frames, IEEE 1588, PXE boot and virtualization features such as VMware NetQueue, Microsoft VMQ, Intel VMDq and Intel VT-c. The HPE 560M is SR-IOV ready.



HPE Ethernet 10Gb 2-port 560M Adapter

Models

HPE Ethernet 10Gb 2-port 560M Adapter

665246-B21

NOTE: The HPE 560M on each server blade connects to a 10Gb interconnect in bays 3-8 (HPE BladeSystem c7000 Enclosure) or bays 2-4 (HPE BladeSystem c3000 Enclosure).

Overview

NOTE: The HPE 560M adapter requires a minimum of 2 GB of server memory.

Kit contents

- HPE Ethernet 10Gb 2-port 560M Adapter
- Quick install card
- Product warranty statement

Compatibility

- HPE ProLiant Server Support**
- BL460c Gen9
 - WS460c Gen9
 - BL660c Gen9

-
- Supported Interconnect Modules**
- HPE 6120XG Blade Switch
 - HPE 6120G/XG Blade Switch
 - HPE 6125G/XG Ethernet Blade Switch
 - HPE 6125XLG Ethernet Blade Switch
 - HPE 6127XLG Ethernet Blade Switch
 - HPE 1:10Gb Ethernet BL-c Switch
 - Cisco Catalyst 3120G Blade Switch for HPE
 - Cisco Catalyst 3120X Blade Switch for HPE
 - Cisco Catalyst 3020 Blade Switch
 - Cisco Fabric Extender B22HP for HPE
 - HPE GbE2c Layer 2/3 Ethernet Blade Switch
 - HPE 10GbE Pass-Thru Module
 - HPE 1GbE Pass Thru Module

NOTE: 10GbE converged connectivity is supported in all HPE 6120XG, HPE 6125XG series switches, Cisco B22 Fabric Extender and HPE 10GbE Pass-Thru modules. All other supported interconnects and switches are limited to 1GbE per connection for Ethernet-only traffic.

Standard Features

Product Features	<ul style="list-style-type: none">• Industry-leading throughput and latency performance• Supports HPE ProLiant Gen8 BL-c servers• Type A Mezzanine Adapter• Dual 10Gb ports provide up to 40Gb full duplex per adapter• Hardware and software acceleration and intelligent offloads for stateless TCP/IP Jumbo frames support• Supports receive-side scaling (RSS) for efficient distribution of network receive processing across multiple CPUs in multiprocessor systems.• Supports the Preboot eXecution Environment (PXE)• Support Wake-on-LAN (at 1Gb) <p>NOTE: Wake-on-LAN is supported only on Port1 from system power state S5.</p>
Dual-port 10 Gigabit Ethernet Throughput (theoretical bandwidth)	The 20 Gbps full duplex Ethernet transfer rate per port (40 Gbps aggregate full duplex) delivers outstanding network performance that improves response time and removes bottlenecks.
Jumbo Frames	The HPE 560M adapter supports jumbo frames (also known as extended frames) with a maximum transmission unit (MTU) of up to 9.5K bytes when running Ethernet and/or, which is over five times the size of standard 1500-byte Ethernet frame. Jumbo frames can help achieve higher throughput and better CPU utilization. Jumbo frames are particularly useful for database transfers.
DPDK	The HPE 560M adapter supports DPDK with benefit for packet processing acceleration and use in NFV deployments.
Interrupt Coalescence	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.
802.1Q VLANs	The HPE 560M adapter supports the IEEE 802.1Q virtual local area network (VLAN) protocol that allows each physical port to be assigned to a VLAN 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.
TCP/IP Stateless Offloading	For overall improved system response, the HPE 560M adapter supports standard TCP/IP stateless offloading techniques including: <ul style="list-style-type: none">• TCP/IP checksum offload (TCO) moves the TCP and IP checksum offloading from the CPU to the network adapter.• Large send offload (LSO), also known as TCP segmentation offload (TSO), allows TCP segmentation to be handled by the adapter rather than the CPU.
Optimized for Virtualization	Intel Virtualization Technology for Connectivity (VT-c) with VMDq and SR-IOV provides I/O Virtualization support for VMware NetQueue, Microsoft VMQ to 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 device is capable of SR-IOV, and requires Software and OS support.
IEEE 1588 &	Support hardware-enabled IEEE 1588, a standard that defines PTP (Precision Time Protocol), a high-precision

Standard Features

802.1AS	time protocol for clock synchronization used in measurement and control systems.
PXE Boot Support	Supports the Preboot eXecution Environment (PXE) allows the server to boot over the network and download software residing in the network.
Network Adapter Teaming	The HPE 560M adapter support for NIC teaming helps IT administrators increase network fault tolerance and improve workload balance. These capabilities optimize availability, improve performance and help reduce costs.
Management Support	The HPE 560M 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 560M adapter can also be managed by other applications with SNMP support.
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.
HPE Active Health System	Supports HPE Active Health System monitors and records changes in the server hardware and configuration enabling customers to have accurate information that will assist in diagnosing problems and delivering rapid resolution when server failures occur.
RDMA	The HPE 560M does not support RDMA
iSCSI	The HPE 560M does not support iSCSI

Hewlett Packard Enterprise branded hardware options qualified for BladeSystem c-Class and p-Class servers are covered by a global limited warranty and supported by Hewlett Packard Enterprise Services and a worldwide network of Hewlett Packard Enterprise Authorized Channel Partners. The Hewlett Packard Enterprise branded hardware option diagnostic support and repair is available for one year from date of purchase, or the length of the server they are attached to, whichever is greater. Support for software and initial setup is available for 90 days from date of purchase. Additional support may be covered under the warranty or available for an additional fee. Enhancements to warranty services are available through HPE Care Pack services or customized service agreements.

Additional information regarding worldwide limited warranty and technical support is available at:
<http://h17007.www1.hpe.com/us/en/enterprise/servers/warranty/index.aspx>

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. If you are running business critical environments, Hewlett Packard Enterprise offers Proactive Care. 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 Services

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

Hewlett Packard Enterprise recommends Proactive Care for your BladeSystem servers, enclosures and components to prevent problems with proactive advice and assistance, resolve issues and rapidly recover by connecting to the Hewlett Packard Enterprise enhanced call experience and advanced technical expertise

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 Hewlett Packard Enterprise. 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 Hewlett Packard Enterprise 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 Services

Related HPE Care Pack Services to enhance your HPE product experience

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.

<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 Hewlett

Service and Support

Packard Enterprise. In case, the issue is with Hewlett Packard Enterprise 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 Hewlett Packard Enterprise 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 Hewlett Packard Enterprise experts, access support resources or collaborate with peers. Learn more <https://www.hpe.com/us/en/services/it-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.

NOTE: The Hewlett Packard Enterprise Support Center Mobile App is subject to local availability.

HPE Insight Remote Support and HPE Support Center are available at no additional cost with a Hewlett Packard Enterprise warranty, HPE Care Pack or Hewlett Packard Enterprise contractual support agreement.

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 Hewlett Packard Enterprise 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 Hewlett Packard Enterprise 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 HPE ESSN Options, please contact your Hewlett Packard Enterprise sales representative or Hewlett Packard Enterprise Authorized Channel Partner. Or visit:

<https://www.hpe.com/us/en/servers.html>

Related Options

c-Class BladeSystem	HPE 6125XLG Ethernet Blade Switch	711307-B21
Interconnect	HP Cisco B22HP Fabric Extender for BladeSystem c-Class	641146-B21
Options	HP GbE2c Ethernet Blade Switch for HP c-Class BladeSystem	410917-B21
	HP 1GB Ethernet Pass-Thru Module for c-Class BladeSystem	406740-B21
	HPE 6125G Ethernet Blade Switch	658247-B21
	HPE 6125G/XG Ethernet Blade Switch	658250-B21

Technical Specifications

General Specifications

Network processor	Intel® 82599 Controller
Data rate	Two ports, each at 20 Gbps full duplex; 40 Gbps aggregate full duplex theoretical bandwidth.
Bus type	PCI Express v2.0 (Gen 2) x8
Form factor	Type A Mezzanine Card
IEEE Compliance	802.3, 802.1ab, 802.3x, 802.3ad, 802.3p/802.1q, 802.3ae, 802.1qau, 802.3ap, 802.1as, 802.1qaz, 802.1Qbb

Power and Environmental Specifications

Operating Temperature	0°C to 55°C / 32°F to 131°F												
Humidity	10% to 90% non-condensing												
Power requirement	6.5W maximum												
Agency Approvals	<table> <tr> <td>USA</td> <td>FCC (CFR 47 part 15) and UL 60950</td> </tr> <tr> <td>Canada</td> <td>ICES-003 and CSA60950</td> </tr> <tr> <td>Japan</td> <td>VCCI</td> </tr> <tr> <td>Korea</td> <td>MIC (RRL), EMC Registration</td> </tr> <tr> <td>Australia</td> <td>ACA, AS/NZS3548/EN55022:1998, EN55024:1998</td> </tr> <tr> <td>European Union</td> <td>EN55022:1998 (CISPR 22), EN55024:1998, and IEC60950:1999 (EN60950:2000)</td> </tr> </table>	USA	FCC (CFR 47 part 15) and UL 60950	Canada	ICES-003 and CSA60950	Japan	VCCI	Korea	MIC (RRL), EMC Registration	Australia	ACA, AS/NZS3548/EN55022:1998, EN55024:1998	European Union	EN55022:1998 (CISPR 22), EN55024:1998, and IEC60950:1999 (EN60950:2000)
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RoHS Compliance	6 of 6												

Operating System Support

Microsoft:	<p>Microsoft Windows Server 2012</p> <p>Microsoft Windows Server 2008 SP2, R2 (x86 and x64)</p> <p>Microsoft Windows Hyper-V, R2 SP1</p>
Linux:	<p>Red Hat Enterprise Linux (x86 and EM64T/AMD64) 5.7, 6.1</p> <p>SUSE Linux Enterprise Server (x86 and EM64T/AMD64)</p>
Solaris:	<p>Solaris 10 (x86 and x64)</p>
Virtualization:	<p>VMware ESX/ESXi 4.1u2, ESXi 5.0u1 and ESXi 5.1.</p> <p>Citrix XenServer 6.0</p> <p>vSphere 6.5</p>

NOTE: For more operating system support & certification information, please visit:

http://h17007.www1.hp.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.hp.com/us/en/living-progress.html>. To recycle your product, please go to: <https://www.hp.com/us/en/living-progress.html> or contact your nearest Hewlett Packard Enterprise sales office. Products returned to Hewlett Packard Enterprise will be recycled, recovered or

Technical Specifications

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 Hewlett Packard Enterprise equipment.

Summary of Changes

Date	Version History	Action	Description of Change
10-Feb-2017	From Version 10 to 11	Changed	Compatibility and Technical Specifications sections were updated.
		Removed	Obsolete SKU was deleted: 516733-B21
07-Oct-2016	From Version 9 to 10	Changed	Add DPDK and 6127XLG switch
22-Jul-2016	From Version 8 to 9	Changed	QuickSpecs sections were updated.
17-Dec-2015	From Version 7 to 8	Changed	Compatibility section was updated.
		Removed	Obsolete SKUs were deleted: 451438-B21, 451439-B21
19-Jun-2015	From Version 6 to 7	Changed	Compatibility section was updated.
18-Apr-2014	From Version 5 to 6	Changed	Changes made in Service and Support section.
21-Mar-2014	From Version 4 to 5	Changed	HPE 6125XLG Ethernet Blade Switch was added.
05-Jul-2013	From Version 3 to 4	Changed	Supported Interconnect Modules were revised in Compatibility c-Class BladeSystem Interconnect Options was added to Related Options
15-Mar-2013	From Version 2 to 3	Removed	Removed some content from the Supported Interconnect Modules.
01-Mar-2013	From Version 1 to 2	Changed	Updated the Compatibility Section.



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