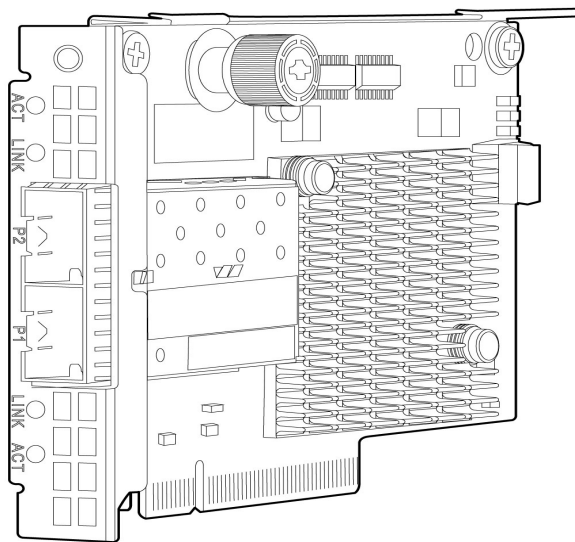


Overview

The HP FlexFabric 534M is a 2-port 10GbE Mezzanine adapter, featuring the next generation of 10Gb Ethernet offering in a single chip solution on a mezzanine form factor that further reduces power requirements for 2 ports of 10Gb Ethernet. It is designed for use with HP BladeSystem c-Class Gen8 blade server platform's type A and Type B mezzanine slots.

It provides full duplex high performance Ethernet connectivity with support for HP Virtual Connect Flex-10 blade interconnect technology, allowing each 10GbE port to be divided into four physical NICs and optimize bandwidth management for virtualized servers. The HP FlexFabric 534M adapter, now has new storage I/O functionality making it a full-Converged Network Adapter (CNA).

The HP 534M supports enterprise class features such as VLAN tagging, adaptive interrupt coalescing, MSI-X, NIC teaming (bonding), Receive Side Scaling (RSS), jumbo frames and PXE boot. It also supports virtualization features such as SR-IOV (Windows, Linux, VMware), VMware NetQueue and Microsoft VMQ.



HP FlexFabric 10Gb 2-port 534M Adapter

Models

HP FlexFabric 10Gb 2-port 534M Adapter

700748-B21

NOTE: The HP 534M requires a minimum of 2 GB of server memory.

NOTE: The HP 534M supports linking at 1000Mbps or 10000Mbps when not connected to a Flex-10 device. The HP 534M will only support 1000Mbps when connected to a 1Gb Ethernet interconnect.

Kit Contents

- HP FlexFabric 10Gb 2P 534M Adptr
- Quick install card
- Product warranty statement
- Drivers, user guide, and utilities via: <http://www.hp.com>

Compatibility

HP ProLiant Server Support

- HP ProLiant BL420c Gen8
 - HP ProLiant BL460c Gen8
 - HP ProLiant BL465c Gen8
 - HP ProLiant BL660c Gen8
-

Supported Interconnect Modules

- HP FlexFabric 10Gb/24-port Module
- HP Virtual Connect Flex-10/10D Module for BladeSystem c-Class
- HP 6120XG Blade Switch
- HP 6120G/XG Blade Switch
- HP 6125XLG Blade Switch
- HP 1:10Gb Ethernet BL-c Switch
- Cisco Catalyst 3120G Blade Switch for HP
- Cisco Catalyst 3120X Blade Switch for HP
- Cisco Catalyst 3020 Blade Switch
- Cisco Fabric Extender B22HP for HP
- HP GbE2c Layer 2/3 Ethernet Blade Switch
- HP 10GbE Pass-Thru Module
- HP 1GbE Pass Thru Module

NOTE: Except for the HP Virtual Connect Flex-10 Ethernet Module, HP Virtual Connect Flex Fabric Module, HP 6120XG, HP 10GbE Pass-Thru Module and the Cisco B22 Fabric Extender, all other supported interconnects are limited to 1Gb per port connection.

Standard Features

Performance

Product Features

- Full hardware offload of iSCSI and FCoE storage protocol processing for highest performance converged Ethernet data and storage networks.
- Dual-port Flex-10 10GbE Type A adapter for HP BladeSystem c-Class Gen8 blade servers
- Industry-leading throughput and latency performance
- The HP 534M is a Type A mezzanine adapter (works in Type A and Type B mezzanine slots)
- Supports HP's Flex-10 blade interconnect technology
- User configurable bandwidth settings when combined with the 10Gb Flex-10 Virtual Connect module. From 100Mb/s to 10Gb/s on up to four "Physical Function" NICs per port, in increments of 100Mb/s for NIC. The combined bandwidth of NICs cannot exceed port bandwidth i.e. 10 Gb.
- Up to 40Gb/s bi-directional near line rate throughput
- Hardware acceleration and offloads for stateless TCP/IP, TCP Offload Engine (TOE)
- Improved small packet performance
- Integrated PHY and MAC
- Support for Preboot eXecution Environment (PXE)
- Support for SR-IOV (Windows, Linux, VMware)

Dual-port 10 Gigabit Ethernet Throughput (theoretical bandwidth)

The HP 534M adapter delivers 20,000 Mbps full duplex Ethernet transfer rate per port (40 Gbps aggregate full duplex), 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 and virtualization.

HP Virtual Connect FlexFabric 10Gb Ethernet Module for the c-Class BladeSystem

Evolve 10Gb at your own speed! When paired with the HP Virtual Connect FlexFabric 10Gb Ethernet Modules, take advantage of four Flex Nics, which are PCI Physical Function devices that are OS/ Hypervisor independent. In addition take advantage of new storage I/O functionality making it a full-Converged Network Adapter (CNA)

Server ROM recognizes them as individual NICs

Speeds can be set per NIC from 100Mb to 10Gbs in 100Mb increments

Three fold increase in number of network connections per port.

Up to four physical function NICs per port.

Ideal for virtualized server environment, especially for dedicated bandwidth application like virtual machine migration from one physical server to another physical server.

Jumbo Frames

The HP 534M 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.

MSI and MSI-X

Message Signaled Interrupt (Extended) provides performance benefits for multi-core servers by load balancing interrupts between CPUs/cores.

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.

Standard Features

802.1Q VLANs

IEEE 802.1Q virtual local area network (VLAN) protocol allows each physical port of the HP 530M 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.

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.

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.

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.

Optimized for Virtualization

I/O Virtualization support for VMware NetQueue and Microsoft VMQ help meet the performance demands of consolidated virtual workloads

HP Sea of Sensors 3D

Support for HP'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.

RDMA

Not Supported

iSCSI/FCoE

The HP 534M does support accelerated iSCSI or iSCSI boot and FCoE.

Ease of Deployment and Management

PXE Boot Support

The HP 534M adapter supports the Preboot eXecution Environment (PXE) allows the server to boot over the network and download software residing in the network.

Compatible with Type A and B Mezzanine Slots

The HP 534M adapter is compatible with Type A and B mezzanine slots for greater deployment versatility

Network Adapter Teaming

The HP 534M 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.

Standard Features

Management Support

The HP 534M adapter can be administered from HP Systems Insight Manager (SIM). The adapters can be managed individually or in teams, providing SNMP based statistics for reporting purposes. The HP 534M adapter can also be managed by other applications with SNMP support.

Warranty

HP branded hardware options qualified for BladeSystem c-Class and p-Class servers are covered by a global limited warranty and supported by HP Services and a worldwide network of HP Authorized Channel Partners. The HP 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 HP Care Pack services or customized service agreements.

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 Services

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

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>

Service and Support

Related Services

Related HP Care Pack Services to enhance your HP product experience

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.

Service and Support

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.

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

Related Options

Additional c-Class BladeSystem Adapters

FlexibleLOM Adapters

HP Ethernet 10Gb 2-port 560FLB Adapter	655639-B21
HP FlexFabric 10Gb 2-port 554FLB Adapter	647586-B21
HP Flex-10 10Gb 2-port 530FLB Adapter	656590-B21
HP Ethernet 1Gb 2-port 361FLB Adapter	652500-B21

Mezzanine Adapters

HP Ethernet 10Gb 2-port 560M Adapter	665246-B21
HP FlexFabric 10Gb 2-port 554M Adapter	647590-B21
HP Flex-10 10Gb 2-port 530M Adapter	631884-B21
HP Ethernet 1Gb 4-port 366M Adapter	615729-B21

HP 10Gb interconnects

HP Virtual Connect Flex-10 10Gb Ethernet Module for c-Class BladeSystem	455880-B21
HP 6125XLG Ethernet Blade Switch	711307-B21
HP 6125G/XG Ethernet Blade Switch	658250-B21
HP 6120XG Blade Switch	516733-B21
HP 10GbE Ethernet Pass-Thru Module for c-Class BladeSystem	538113-B21

Technical Specifications

General Specifications	Network processor	Broadcom BCM 57810S with integrated MAC/PHY
	Data rate	Two ports, each at 20 Gbps full duplex; 40 Gbps aggregate full duplex theoretical bandwidth.
	Onboard memory	900MB (distributed memory)
	Bus type	PCI Express v2.0 (Gen 2) x8
	Form factor	The HP 530M is a Type A mezzanine adapter (works in Type A and Type B mezzanine slots)
	IEEE Compliance	802.3, 802.3ab, 802.3u, 802.3x, 802.3ad, 802.3p, 802.1q, 802.3ae, 802.3ap
Power and Environmental Specifications	Operating Temperature	0°C to 55°C / 32°F to 131°F
	Humidity	10% to 90% non-condensing
	Power requirement	max<12W
	Emissions classification	FCC Class A
	Agency approvals	USA: FCC Part 15 Class A
		Canada: ICES---3, Issue 4
		Japan: VCCI V3 (2010.04) Class A
		International: EN55022:2006 + A1:2007 Class A
		International: 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	
Safety	UL Mark (USA and Canada)	
	CE Mark	
	EN 60590	
Operating System Support	Microsoft:	
		Microsoft Windows Server 2012
		Microsoft Windows Server 2008 and 2008 R2
	Linux:	
		Red Hat Enterprise Linux (RHEL) 5.7 and 6.1
		SUSE Linux Enterprise Server (SLES) 10SP4 and 11 SP1
	Solaris:	
		Solaris 10
	Virtualization:	
		MS Virtual Server support on Windows 2008
	VMware vSphere 4.1 and 5.0	
	NOTE: For more operating system support & certification information, please visit: http://h10018.www1.hp.com/wwsolutions/index.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.

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