

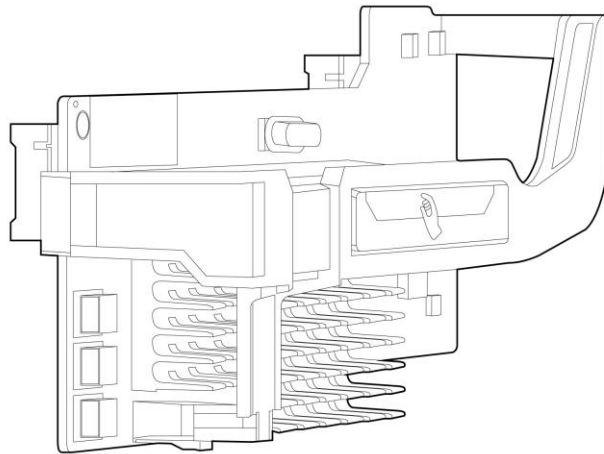
Overview

HP Flex-10 10Gb 2-port 530FLB Adapter

The HP Flex-10 10Gb 2-port 530FLB adapter features the next generation of 10Gb Ethernet offering in a single chip solution on a FlexibleLOM form factor, further reducing power requirements for 2 ports of 10Gb Ethernet. It is designed for use with HP BladeSystem c-Class Gen8 servers.

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 530FLB Flex-10 network adapter, in conjunction with HP Virtual Connect Flex-10 technology, helps to extend the benefits of virtualization beyond the server and into the rest of the infrastructure.

The HP 530FLB 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 and PXE boot. It also supports virtualization features such as SR-IOV, Network Partitioning (NPAR), VMware NetQueue and Microsoft VMQ.



HP Flex-10 10Gb 2-port 530FLB Adapter

Models

HP Flex-10 10Gb 2-port 530FLB Adapter

656590-B21

HP Flex-10 10Gb 2-port 530FLB FIO Adapter

684211-B21

NOTE: The HP 530FLB on each server blade connects to a 10Gb interconnect in bays 1-2 (HP BladeSystem c7000 Enclosure) or bay 1 (HP BladeSystem c3000 Enclosure).

NOTE: The 530FLB requires a minimum of 2 GB of server memory.

NOTE: The 530FLB supports linking at 1000Mbps or 10000Mbps when not connected to a Flex-10 device.

NOTE: The 530FLB will only support 1000Mbps when connected to a 1Gb Ethernet interconnect.

Kit Contents

- HP Flex-10 10Gb 2-port 530FLB adapter
- 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
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Supported Interconnect Modules

- HP Virtual Connect Flex-10/10D Module for c-Class BladeSystem
- HP Virtual Connect Flex-10/10D Module Enterprise Edition for BLc7000 Option
- HP Virtual Connect Flex-10 10Gb Ethernet Module for c-Class BladeSystem
- HP Virtual Connect Flex-10 Ethernet Module Enterprise Edition for BLc7000 Option
- HP 6120XG Blade Switch
- HP 6120G/XG Blade Switch
- HP 6125XLG Ethernet Blade Switch
- HP 6125XLG Ethernet Blade Switch with TAA
- HP 6125G/XG Ethernet Blade Switch
- HP 6125G/XG Ethernet Blade Switch with TAA
- HP 6125G Ethernet Blade Switch
- HP 6125G Ethernet Blade Switch with TAA
- 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 10GbE Pass Thru Module
- HP 1GbE Pass Thru Module

NOTE: 10GbE connectivity is supported in all HP Virtual Connect Flex-10 Ethernet, HP 6120XG, HP 6125XG series switches, and HP 10GbE Pass-Thru modules. All other supported interconnects and switches are limited to 1GbE per connection for Ethernet-only traffic.

Standard Features

Product Features

- Dual-port 10GbE Flex-10 FlexibleLOM network adapter that provides the flexibility to choose the type of LOM to meet growing infrastructure needs
- Industry-leading throughput and latency performance
- 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
- Improved small packet performance
- Support for Preboot eXecution Environment (PXE)
- Integrated PHY and MAC
- Supports for SR-IOV

Dual-port 10 Gigabit Ethernet Throughput (theoretical bandwidth) The HP 530FLB 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. 10Gb Ethernet bandwidth is ideal for high performance computing, database clusters.

HP Virtual Connect Flex-10 10Gb Ethernet Module for the c-Class BladeSystem Evolve 10Gb at your own speed! When paired with the HP Virtual Connect Flex-10 10Gb Ethernet Modules, take advantage of four Flex Nics, which are PCI Physical Function devices that are OS/ Hypervisor independent. 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 530FLB 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.

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.

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.

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

Standard Features

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 network scale with minimal impact to performance. HP Tunnel Offloading increases I/O throughput, reduces CPU utilization, and lowers power consumption. NVGRE tunnel offload supports Microsoft OS environments and VxLAN supports select VMware and Linux (RHEL and SUSE) environments.

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.

RDMA Not Supported

iSCSI The HP 530FLB does not support accelerated iSCSI or iSCSI boot.

Network Partitioning The HP 530M supports NIC partitioning for ProLiant Gen8 blade servers. Allowing administrators to configure a 10Gb 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.

Ease of Deployment and Management

PXE Boot Support Supports the Preboot eXecution Environment (PXE) allows the server to boot over the network and download software residing in the network

FlexibleLOM slot Compatibility Compatible with HP FlexibleLOM slot for c-Class Gen8 blade servers

Network Adapter Teaming The HP 530FLB 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 HP 530FLB 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 530FLB adapter can also be managed by other applications with SNMP support.

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.

Warranty HP branded hardware options qualified for BladeSystem c-Class and p-Class servers are covered by a global

Standard Features

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. If you are running business critical environments, HP 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, 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

HP 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 HP's enhanced call experience and advanced technical expertise

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>

Insight Remote Support

Provides 24 X 7 remote monitoring, proactive notifications, and problem resolution. Learn more

<http://www.hp.com/go/insightremotesupport>

Related Options

Additional c-Class BladeSystem Adapters	FlexibleLOM Adapters	
	HP FlexFabric 10Gb 2-port 554FLB Adapter	647586-B21
	HP FlexFabric 10Gb 2-port 534FLB Adapter	700741-B21
	Mezzanine Adapters	
	HP FlexFabric 10Gb 2-port 554M Adapter	647590-B21
	HP FlexFabric 10Gb 2-port 534M Adapter	700748-B21
	HP Flex-10 10Gb 2-port 530M Adapter	631884-B21
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HP 10Gb interconnects	HP Virtual Connect Flex-10/10D Module for c-Class BladeSystem	638526-B21
	HP Virtual Connect Flex-10/10D Module Enterprise Edition for BLc7000 Option	662048-B21
	HP 6125XLG Ethernet Blade Switch	711307-B21
	HP 6125XLG Ethernet Blade Switch with TAA	737230-B21
	HP 6125G/XG Ethernet Blade Switch	658250-B21
	HP 6125G/XG Ethernet Blade Switch with TAA	737226-B21
	HP 6125G Ethernet Blade Switch	658247-B21

Technical Specifications

General Specifications	Network processor	QLogic 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	FlexibleLOM		
	IEEE Compliance	802.3, 802.1ab, 802.3x, 802.3ad, 802.3p, 802.1q, 802.3ae, 802.1Qau, 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	<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 2008 SP2 and R2 w/SP1 (x86 and x64) Microsoft Windows Server 2012, 2012 R2 Microsoft Windows Hyper-V 2008 R2 w/SP1, 2012, 2012 R2		
	Linux:	Red Hat Enterprise Linux (RHEL) 5, 6 and 7 SUSE Linux Enterprise Server 11 and 12		
	Solaris:	Solaris 10 and 11		
	HyperVisors:	VMware ESXi 5.x and 6.x VMware vSphere 4.1, 5.0 and 5.5		
	NOTE: For more operating system support & certification information, please visit:			
	http://h10018.www1.hp.com/wwsolutions/index.html .			
	Environment-friendly Products and	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:	

Technical Specifications

Approach

<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.

Summary of Changes

Date	Version History	Action	Description of Change:
19-Jun-2015	From Version 8 to 9	Changed	Overview, Compatibility, Standard Features, Related Options and Technical Specifications sections were updated.
28-Nov-2014	From Version 7 to 8	Changed	Overview, Compatibility, Standard Features, Technical Specifications sections were updated
		Added	Sku added on models: <ul style="list-style-type: none"> • 684211-B21 Skus added on HP 10Gb interconnects: <ul style="list-style-type: none"> • 658250-B21 • 737226-B21 • 658247-B21 • 737220-B21 Skus added on Additional c-Class BladeSystem Adapters: <ul style="list-style-type: none"> • 700741-B21 • 700748-B21
18-Apr-2014	From Version 6 to 7	Changed	Service and Support was revised.
01-Mar-2013	From Version 5 to 6	Changed	Changes were made to the Overview Section and Standard Features Section.
14-Dec-2012	From Version 4 to 5	Changed	Changes were made in the following sections: Overview: Models;return needed Compatibility: HP Proliant Server Support spelling correction Standard Features: word deleted in Product Features and moved TCP/IP Stateless Offloading node
24-Aug-2012	From Version 3 to 4	Changed	Changes were made in Compatibility section.
22-Jun-2012	From Version 2 to 3	Changed	Changes were within the Standard Features section.
09-Mar-2012	From Version 1 to 2	Changed	Changes were within the Standard Features section.

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