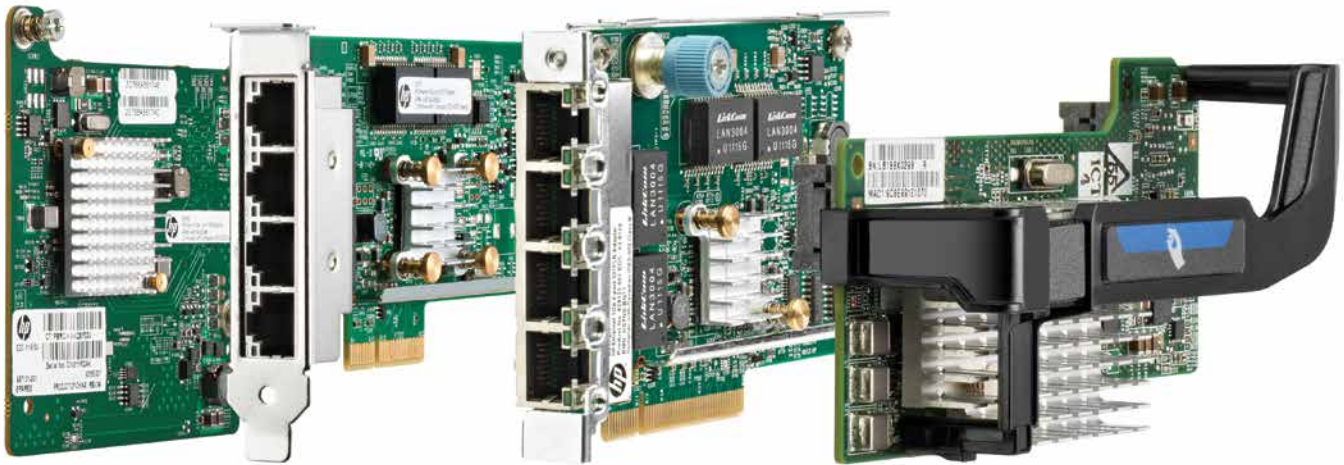




# Broadcom NetXtreme network adapters for HP ProLiant Gen8 servers

Performance and flexibility needed for today's data center environments



HP offers the world's fastest 10GbE networking solutions for its Generation 8 (Gen8) family of ProLiant BL, DL, ML, and SL servers. Using Broadcom's NetXtreme II BCM57810S controller, the portfolio of HP Converged Network Adapters provides the highest throughput, lowest processor utilization, and the highest small packet performance for Ethernet connectivity. Full hardware offload of Fibre Channel over Ethernet (FCoE) and iSCSI storage protocols provide best-in-class performance for converged networking and storage data connectivity.

The HP FlexibleNetwork Adapters powered by Broadcom are available in all major form factors, including standard PCIe CNA, innovative HP FlexibleLOM and mezzanine card formats. Broadcom's NetXtreme network controllers, with over 13 generations of Ethernet design and development experience, are the most reliable market-tested solutions available.

In addition to 10GbE solutions, HP also offers 1GbE FlexibleNetwork Adapters leveraging Broadcom's NetXtreme BCM5719 and BCM5720 high-performance 1GbE controllers. Designed for today's enterprise data centers, these adapters are the ideal solution for multi-core servers, delivering full line-rate throughput across all ports. With support for the Energy Efficient Ethernet (EEE) standard, these adapters deliver greater energy savings while in idle mode.

The HP FlexibleNetwork Adapters based on Broadcom's Ethernet Controllers and physical layer device (PHY) technology deliver unsurpassed reliability and performance required for today's data center networking demands.

### **Industry leadership**

- Over 13 generations of Ethernet design and development experience
- Market-tested Ethernet solutions

### **Increase energy efficiency**

- Support for Energy Efficient Ethernet (EEE)
- Reduced energy consumption by up to 42%<sup>1</sup>
- Support for HP 3D Sea of Sensors for automated energy optimization
- Reduced OPEX and extended IT budgets

### **Simplify deployment and management**

- Comprehensive product portfolio
- 1GbE and 10GbE solutions for HP Gen8 server family
- FlexibleLOM, NIC, and mezzanine form factors

### **Best reliability and performance**

- 2.5M FCoE IOPS – 250% faster than the nearest CNA competitor<sup>2</sup>
- 1.5M iSCSI IOPS – 100% faster than the nearest CNA competitor<sup>2</sup>
- Full line-rate throughput performance—up to 37,000 Mbps across two 10GbE full-duplex ports
- Low CPU utilization—as low as 12%
- Superior small packet performance—up to 5.7 million packets per second
- Single Root I/O Virtualization (SR-IOV) support
- Support for Jumbo Frames larger than 1500 bytes
- Broadcom-designed Ethernet controllers
- Broadcom-designed PHYs

### **Boost network synchronization**

- Support for Precision Time Protocol (PTP)
- Faster time synchronization across the network
- More accurate time-stamping of packet delivery
- Critical for fast-paced banking/financial transaction environments

### **Increase asset utilization**

- Network bandwidth tuned at the server edge
- Each 10GbE port partitions into four independent ports
- Bandwidth allocated when and where needed

<sup>1</sup>EEE White Paper

<sup>2</sup>Demartek Labs, June 2012

## HP FlexibleNetwork adapters (continued next page)

Powered by Broadcom NetXtreme controllers



**HP Ethernet 1Gb 4-port 331T Adapter**



**HP Ethernet 1Gb 2-port 332T Adapter**



**HP Ethernet 1Gb 4-port 331FLR Adapter**



**HP Ethernet 10GBASE-T 2-port 530T Adapter**



**HP FlexFabric 10GBASE-T 2-port 533FLR-T Adapter**

<b>Speed</b>	1GbE	1GbE	1GbE	10GbE	10GbE
<b>HP part number</b>	647594-B21	615732-B21	629135-B21	656596-B21	700759-B21
<b>Broadcom controller part number</b>	BCM5719	BCM5720	BCM5719	BCM57810S	
<b>Interface Type</b>	HP Ethernet 1Gb 4-port RJ45 Adapter	HP Ethernet 1Gb 2-port RJ45 Adapter	HP Ethernet 1Gb 4-port RJ45 Adapter	HP Ethernet 10GBASE-T 2-port RJ45 Adapter	HP FlexFabric 10GBASE-T 2-port RJ45 Adapter
<b>Supported protocols</b>	L2 Networking	L2 Networking	L2 Networking	L2 Networking	L2 Networking + FCoE/iSCSI-Ready
<b>Ports</b>	4	2	4	2	2
<b>Form factor</b>	Stand-up card (NIC)	Stand-up card (NIC)	FlexibleLOM rack	Stand-up card (NIC)	FlexibleLOM rack
<b>HP ProLiant Gen8 servers supported*</b>	DL, SL, and ML servers	DL, SL, and ML servers	DL and SL servers	DL, SL, and ML servers	SL and SL servers
<b>OS support</b>	Windows® Server 2008 & 2012, Red Hat RHEL 5.x & 6.x, SUSE SLES 10 & 11, vSphere 5.x, Citrix XenServer 6.x				
<b>Technical specifications</b>	PCI Express 2.0 (5.0 GT/s) Stateless offload Support for VMware NetQueue and Microsoft® VMQ PCI bus power management interface (v 1.2) Advanced Error Reporting Jumbo Frame Support TCP segmentation/large send offload Preboot eXecution Environment (PXE Boot) ACPI v2.0 SMBus 2.0 IEEE 1588—Precision Time Protocol (PTP)-ready IEEE 802.1q—Virtual LAN (VLAN) tagging IEEE 802.3x—Flow control IEEE 802.3az—Energy Efficient Ethernet IPv4 and IPv6 offload Teaming support MSI-X supports independent queues				

\* Certain G7 DL servers are also supported, please check the adapter QuickSpecs for the latest list of servers supported.

## HP FlexibleNetwork adapters (continued from previous page)

Powered by Broadcom NetXtreme controllers



**HP 10Gb 2-port SFP+ CN1100R CNA**



**HP FlexFabric 10Gb 2-port SFP+ 534FLR CNA**



**HP FlexFabric 10Gb 2-port 534FLB CNA**



**HP FlexFabric 10Gb 2-port 534M Mezzanine CNA**

<b>Speed</b>	10GbE	10GbE	10GbE	10GbE
<b>HP part number</b>	QW990A	700751-B21	700741-B21	700748-B21
<b>Broadcom controller part number</b>	BCM57810S	BCM57810S	BCM57810S	BCM57810S
<b>Interface Type</b>	HP Ethernet 1Gb 2-port SFP+ Adapter	HP Ethernet 10Gb 2-port SFP+ Adapter	HP Flex-10 10Gb 2-port Backplane Adapter	HP Flex-10 10Gb 2-port Backplane Adapter
<b>Supported protocols</b>	L2 Networking + FCoE/iSCSI	L2 Networking + FCoE/iSCSI	L2 Networking + FCoE/iSCSI	L2 Networking + FCoE/iSCSI
<b>Ports</b>	2	2	2	2
<b>Form factor</b>	Stand-up card (NIC)	FlexibleLOM rack	FlexibleLOM blade	Mezzanine adapter
<b>HP ProLiant Gen8 servers supported*</b>	DL, SL, and ML servers	DL and SL servers	BL servers	BL servers
<b>OS support</b>	Windows® Server 2008 & 2012, Red Hat RHEL 5.x & 6.x, SUSE SLES 10 & 11, vSphere 5.x, Citrix XenServer 6.x			
<b>Technical specifications</b>	x8 PCI Express 2.0 (5.0 GT/s) Hardware and stateless offload Support for VMware NetQueue and Microsoft VMQ PCI bus power management interface (v 1.2) Advanced Error Reporting Jumbo Frame Support TCP segmentation/large send offload Preboot eXecution Environment (PXE Boot) ACPI v2.0 SMBus 2.0 IEEE 1588—Precision Time Protocol (PTP)-ready IEEE 802.1q—Virtual LAN (VLAN) tagging IEEE 802.3x—Flow control IPv4 and IPv6 offload Teaming support MSI-X supports independent queues			

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**For more information on HP Flexible Networking Adapters powered by Broadcom, please visit [hp.com/go/ProLiantNICs](http://hp.com/go/ProLiantNICs).**

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