HP StorageWorks B-series Fibre Channel Host Bus Adapters

New 4Gb and 8Gb PCIe Fibre Channel Host Bus Adapters (HBAs)
for HP ProLiant servers and HP StorageWorks disk arrays

The HP StorageWorks B-series 4Gb and 8Gb PCIe Fibre Channel Host Bus Adapters (HBAs) provide a new level of server connectivity through high-performance hardware capabilities and unique software configurability. This new class of HBAs is designed to help IT organizations deploy and manage end-to-end SAN services across next-generation data centers.

Most data centers were designed to meet basic connectivity options for physical servers, switches, and storage. As demands grow, however, organizations require new connectivity options with higher performance, better service levels, simplified management, and greater data protection.

New higher powered servers, such as quad core, necessitate higher bandwidth in the network. Virtualization, while enabling multiple OS images to run on the same server and getting the server to

do more, also requires more bandwidth available to move the data. The same holds true for other high-bandwidth applications, such as rich media. Additionally, server virtualization increases I/O demand—the more virtual machines, the more I/O they require. A high bandwidth HBA has to deliver greater I/O processing power to free up server CPU cycles to handle a greater concurrent workload.

With the need to meet service-level agreements (SLAs), there is more pressure on resources. Many businesses are reducing IT budgets, which results in needing to do more with less. Getting results from fewer human resources and limited capital is the need of the hour. Without proper manageability, consolidation cost saving and efficiency improvements can be lost. With a single management interface to configure, monitor, and maintain server connectivity to the SAN, HP B-series customers do not have to give up their favorite tools, preserving their investment in training and simplifying the management process wither fewer interfaces to work from.

Key features and benefits

High-performance configuration
- Intelligent PCIe lane negotiation to increase bus throughput
- Parallel I/O engines to support simultaneous I/O transfers

Adaptive Networking
- Flow control to improve link utilization between HBAs and adjacent switch ports

Centralized management and provisioning
- Local and remote management of distributed HBAs with fabric-based boot LUN discovery for automated SAN boot configuration to quickly deploy diskless servers
- FC-ping, FC-Traceroute, and LED port beaconing to simplify fault isolation

Data protection
- Data protection across PCIe and FC (T10 CRC), memory blocks, and ASIC (ECC)

Enhanced server virtualization*
- Multiple I/O data queues to increase performance for virtualized environments
- Increases bus throughput with a Fibre Channel to PCIe 2.0a Gen2 (x8) bus interface with intelligent lane negotiation
- Increases I/O transfer rates with up to 500,000 IOPS per port at 4 or 8 Gbit/sec
- Supports virtualized environments with N_Port ID Virtualization (NPIV) for 255 virtual ports

End-to-end storage networking

The HP StorageWorks B-series PCIe Fibre Channel HBAs lay the foundation for extending fabric intelligence to servers, virtual machines, applications, and services—enabling end-to-end storage network management.

Unified management

For local or remote management, the Host Connectivity Manager (HCM) native GUI and CLI tools are included with each HBA for configuration and monitoring. In addition, HP StorageWorks Data Center Fabric Manager (DCFM™) provides unified, end-to-end management across fabrics with HP B-series Fibre Channel switches and HBAs. Both DCFM and HCM provide open APIs and standards-based interfaces for integration with popular third-party applications and higher-level frameworks to help orchestrate HP B-series hardware and SAN services.

Boot from SAN

Deployment and management of diskless servers is simplified with a unique fabric-based boot LUN discovery process that reduces errors during manual and tedious boot configuration tasks. HP B-series HBAs are enabled to automatically retrieve server boot LUN configuration from the SAN, eliminating the need to configure each server individually.

* This functionality is being planned.

Technical specifications:

	41B and 42B	81B and 82B
Data rate (half-duplex)	Per port: 4 Gbit/sec (400 MB/sec); 2 Gbit/sec (200 MB/sec); 1 Gbit/sec (100 MB/sec)	Per port: 8 Gbit/sec (800 MB/sec); 4 Gbit/sec (400 MB/sec); 2 Gbit/sec (200 MB/sec)
Performance	Up to 500,000 IOPS per port (maximum)	Up to 500,000 IOPS per port (maximum)
Protocols	SCSI-FCP, FCP-2, FC-SP	SCSI-FCP, FCP-2, FC-SP
Topology	Point-to-point (N_Port), switched fabric (N_Port)	Point-to-point (N_Port), switched fabric (N_Port)
Distance support	50 meters at 4 Gbit/sec on 62.5/125 μm Multi-Mode Fiber (MMF)	50 meters at 8 Gbit/sec on 62.5/125 μm Multi-Mode Fiber (MMF)
Server platform	HP ProLiant	HP ProLiant
Bus interface	PCI Express Gen 2.0 Compatible (x8), with MSI-X and INTx	PCI Express Gen 2.0 Compatible (x8), with MSI-X and INTx
APIs	SNIA-HBA-API 2.0 and FDMI-I	SNIA-HBA-API 2.0 and FDMI-I
Transceivers	4 Gbit/sec Fibre Channel LC-style pluggable (SFP)	8 Gbit/sec Fibre Channel LC-style pluggable (SFP+)
Form factor	Low-profile MD2 form factor PCI Express Card; 16.77 cm × 6.89 cm (6.60 in. × 2.71 in.)	Low-profile MD2 form factor PCI Express Card; 16.77 cm × 6.89 cm (6.60 in. × 2.71 in.)
Brackets	Shipped with both half-height and full-height brackets	Shipped with both half-height and full-height brackets
Airflow	No airflow required	No airflow required
Operating temperature **Non-operating temperature**	0° C/32° F to 50° C/122° F (dry bulb) −43° C/−40° F to 73° C/163° F (dry bulb)	0° C/32° F to 50° C/122° F (dry bulb) −43° C/−40° F to 73° C/163° F (dry bulb)
Operating humidity **Non-operating humidity**	5% to 93% (relative, non-condensing) 5% to 95% (relative, non-condensing)	5% to 93% (relative, non-condensing) 5% to 95% (relative, non-condensing)
Power dissipation	6W (typical) × 4 lanes; reduced in green power mode	6W (typical) × 4 lanes; reduced in green power mode
Operating voltage	3.3 V	3.3 V
Warranty	3/0/0	3/0/0
QuickSpec URL	http://h18000.www1.hp.com/products/quickspecs/12604_div/12604_div.html	http://h18000.www1.hp.com/products/quickspecs/12907_div/12907_div.html

41B and 42B

81B and 82B

Customer Technical Training

Consider education as an integral part of your strategy to get the best return on investment for your HP storage solution. HP offers a variety of training courses on storage software, networking, archiving, and disk storage systems. Our classes are available in many delivery modalities from traditional instructor-led courses at one of our 80 training centers worldwide to onsite training customized to your needs or online at: **www.hp.com/learn/storage**

Financial Services

HP Financial Services provides innovative financing and financial asset management programs to help customers cost-effectively acquire, manage and ultimately retire their HP solutions. For more information on these services, please contact your HP representative or visit: **www.hp.com/go/hpfinancialservices**

For more information

To help improve technology investments, HP and its partners offer complete solutions that include education, support, and services. For more information, contact an HP sales partner or visit: **www.hp.com/go/SAN**

HP Services

HP Technology Services, to help take the worry out of deploying, supporting, and managing your HP StorageWorks B-series 4Gb and 8Gb PCIe Fibre Channel Host Bus Adapters (HBAs) storage solution—trust the services professionals at HP to boost availability and avoid costly downtime.

Recommended Services

- HP Host Bus Adapters (HBA) take on the support level of the HP server in which they are installed. For HBAs installed outside of an HP environment: 3-Year HP Support Plus 24—for a higher return on your storage technology, this 3-year combined reactive support option delivers integrated onsite hardware/software support services available 24x7.

- HP Host Adapter Card/Router Installation—For customers purchasing an HBA as an add-on to an existing HP Server or installing into a non-HP Server, this service provides initial hardware installation of your product into your server (system configuration is not included) for smooth startup and better business outcomes.

For more information about HP services and support, contact your HP sales representative or HP-authorized Channel Partner or, visit: **www.hp.com/hps/storage**

Technology for better business outcomes

To learn more, visit www.hp.com/go/SAN

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