hp server connectivity

tachlite fibre channel adapters

hp enhances lineup of fibre channel adapters

hp tachlite fibre channel adapters now offer double the performance

It is truly the Information Age. Nothing but the best information management is acceptable for system-wide success. While many think computers process data into information, computers actually spend much more of their time organizing the data and managing the storage of information. This reality has been forming over time, but certainly graphical user interface programs have accelerated the trend, along with web page types of applications.

The early 1990s first saw massive disk farms created specifically to store data in very large disk arrays. Designers of storage systems quickly realized that centralized storage and retrieval of data makes information technology (IT) much more manageable. After all, when even the data that drives a meager spreadsheet on a desktop may be the decision maker for the next corporate merger or venture, it is quickly apparent that this data is too important to trust individuals to back it up regularly.

Storage area networks (SANs) are an emerging methodology for maintaining enterprise-level quantities of data. Data storage management, data integrity, cross-systems storage—all can be ensured by the use of a SAN, while they also ensure data retrieval and storage is quick and transparent to the end user. The appropriate architecture for connecting these gigantic arrays of disks becomes an important part of the decision of how to implement SANs.

benefits of hp tachlite fibre channel host bus adapters (HBAs)

- maximum I/O performance
  - auto-negotiates 2Gb or 1Gb transfer rates (A6795A only)
- superior quality with next-generation functionality:
  - switched fabric capability enabled—supports sophisticated recovery and backup scenarios, eventually without server intervention
  - online add/replace (OLAR) capable
  - increased performance with 66% less CPU utilization for I/O operations
  - full switched fabric support on HP-UX, up to 14 million nodes on a SAN
  - existing Arbitrated Loop supported
- one-stop shopping through HP for SANs, with full support for mission-critical environments

selecting your tachlite fibre channel HBA

- A6795A—PCI 2Gb Fibre Channel adapter
  - Superdome, rp8400, rp7410, rp7400, rp5400 series, rp2400 series
- A5158A—PCI 1Gb Fibre Channel adapter
  - V-class, Itanium™
  - legacy adapter for PCI-based systems
- A6685A—HSC 1Gb Fibre Channel adapter
  - K-class
- A6684A—HSC-eff 1Gb Fibre Channel adapter
  - D-class, R-class

fibre channel provides for SAN implementations

The eventual promise of SAN technology is that regardless of where the data originates (Internet or intranet) or where it is processed (on UNIX® or Windows NT® or other operating systems), the economies of scale, ease of operations, data integrity, and performance characteristics of SANs makes them appropriate data storage/delivery architectures.

Therefore, the demand for Storage Area Networks is exploding. Through centralization, tradeoffs are made between ease of management and assurance of recovery, and, for example, more complex SAN wiring topologies.

Storage Area Networks offer flexible pools of secure storage, 100% data availability, and practically infinite scalability.

HP is committed to providing strategic technology for mass storage interconnects to its enterprise customers. For example, HP's Switched Fabric functionality allows up to 14 million nodes to be connected on a SAN. The technology usually chosen to deploy in SAN environments is Fibre Channel, which provides optimum levels of reliability, speed, and distance.

HP's Fibre Channel solution uses a standard SCSI protocol to provide a fast, robust connection to storage devices.

improved performance and investment protection

The HP PCI 2Gb Fibre Channel adapter—A6795A, available on HP-UX 11.0 and later operating systems—for Superdome, rp8400, rp7410, rp7400, rp5400 series, and rp2400 series systems, improves SAN performance and efficiency.

This adapter, also known as Tachlite, enhances HP servers' capabilities in the Storage Area Network. First, the A6795A offers data transfer rates up to 400 megabytes per second (full-duplex), effectively doubling performance over previous-generation Fibre Channel adapters. Next, the 2Gb Fibre Channel adapter auto-negotiates 1Gb or 2Gb transfer rates. This feature allows full legacy support for 1Gb SAN infrastructures, thus protecting your current SAN investment.

optimizes functionality

With all Tachlite adapters, HP delivers Switched Fabric Fibre Channel (FC-SW) functionality to HP-UX. The switched fabric functionality allows HP-UX servers to conveniently participate as a node in SAN environments.

The FC-SW functionality of Tachlite is supported on all current and future PCI platforms and offers the significant benefit of allowing servers to boot across switches. This FC-SW functionality is supported on the HP Surestore Director FC-64, FC switches 6164, 16B, and 8B, Brocade Switch 2800 and 2400, and EMC Connectrix switches.

Tachlite dramatically increases HP servers' SAN performance, resulting in 66% lower CPU utilization during I/O cycles. The new interface offers full support for peripherals and online add/replace (OLAR) in supported versions of the operating system.

HSC (K-, D-, and R-class) Switched Fabric Fibre Channel support is also available with A6685A and A6684A Tachlite adapters.

For more information, please visit the HP Web site:
www.hp.com/go/hp9000io

tachlite features and benefits

features	benefits
2Gb and 1Gb Fibre Channel technology	• highest I/O performance for faster accessibility of databases and media-rich data • increased performance over previous-generation Fibre Channel adapters
full switched fabric Fibre Channel (FC-SW) capability	• support for sophisticated storage area network (SAN) configurations • increases scalability of SAN infrastructure up to 14 million nodes • customization of complex recovery and backup scenarios
online add/replace (OLAR)	• maximizes server uptime with OLAR • no need to bring down server to add new or replace failed adapter
arbitrated loop support	• flexibility to integrate into various SAN configurations
less CPU usage	• minimizes requirements of CPU utilization for I/O to allow for maximum cycles for other operations

product description

product number	A6795A	A5158A	A6685A	A6684A
description	**PCI 2Gb Tachlite Fibre Channel Adapter**	**PCI Tachlite Fibre Channel Adapter**	**HSC Tachlite Fibre Channel Adapter**	**HSC eff Tachlite Fibre Channel Adapter**
form factor	• standard PCI • 64-bit PCI interface, compliant with PCI Specification v2.1 • compatible with 3.3V and 5V, 32-bit and 64-bit • L=6.6 in (168 mm) W=3.5 in (89 mm) H=0.7 in (20 mm)	• standard PCI • 64-bit PCI interface, compliant with PCI Specification v2.1 • compatible with 3.3V and 5V, 32-bit and 64-bit • L=6.5 in (165 mm) W=4.7 in (120 mm) H=0.7 in (19 mm)	• HP-HSC (3x5) • HSC support (32-bit 40MHz) • L=5.7 in (145 mm) W=3.2 in (82 mm) H=1.0 in (26 mm)	• HSC EISA form factor • HSC support (32-bit 40MHz) • L=6.6 in (168 mm) W=4.2 in (107 mm) H=0.8 in (20 mm)
transfer rate	2Gb or 1Gb auto-negotiates	1Gb	1Gb	1Gb
max transfer rate	400 MB/s full duplex 200 MB/s half duplex	200 MB/s full duplex 100 MB/s half duplex	200 MB/s full duplex 100 MB/s half duplex	200 MB/s full duplex 100 MB/s half duplex
systems supported (maximum adapters)	Superdome (96) rp8400 (16) rp7410 (12) rp7400 (12) rp5400 series (10) rp2400 series (4)	Superdome (96) V-class (20) N-class (12) L-class (10) A500 (4)/A400 (2) rx9610 (16) Itanium rx4610 (10) Itanium	K-class (3–9) Kx70/Kx80 Kx60 Kx50 Kx20	D-class (3) R-class (3) Dx70/Dx80/D390 Dx20/Dx30 R380/R390
boot support	yes	yes	Kx70/Kx80 Kx60	D390 R390
operating systems	HP-UX 11.0 and later	HP-UX 11.0 and later	HP-UX 11i, 11.0, 10.20	HP-UX 11i, 11.0, 10.20
connector type	LC (SFF)	SC	SC	SC
dc power characteristics	draws 1.8 amps @ 5V	draws 1.8 amps @ 5V	draws 1.8 amps @ 5V	draws 1.8 amps @ 5V

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invent

environmental and regulatory specifications

product number	A6795A	A5158A	A6685A	A6684A
temperature	• non-operating: -40° to +70° C (-40° to 158° F) • operating: +5° to +40° C (41° to 104° F) • recommended operating: +20° to +30° C	• non-operating: -40° to +70° C (-40° to 158° F) • operating: +5° to +40° C (41° to 104° F) • recommended operating: +20° to +30° C	• non-operating: -40° to +70° C (-40° to 158° F) • operating: +5° to +40° C (41° to 104° F) • recommended operating: +20° to +30° C	• non-operating: -40° to +70° C (-40° to 158° F) • operating: +5° to +40° C (41° to 104° F) • recommended operating: +20° to +30° C
humidity	• operating humidity range @ 22° C: 15% to 80% RH • recommended operating: 15% to 80% RH at 22° C (70° F)	• operating humidity range @ 22° C: 15% to 80% RH • recommended operating: 15% to 80% RH at 22° C (70° F)	• operating humidity range @ 22° C: 15% to 80% RH • recommended operating: 15% to 80% RH at 22° C (70° F)	• operating humidity range @ 22° C: 15% to 80% RH • recommended operating: 15% to 80% RH at 22° C (70° F)
altitude	• non-operating: 15,000 ft • operating: 10,000 ft (3.1 km)	• non-operating: 15,000 ft • operating: 10,000 ft (3.1 km)	• non-operating: 15,000 ft • operating: 10,000 ft (3.1 km)	• non-operating: 15,000 ft • operating: 10,000 ft (3.1 km)
radiated field immunity	• EN 55022 Class A	• EN 55022 Class A	• EN 55022 Class A	• EN 55022 Class A

ordering information

product number	A6795A	A5158A	A6685A	A6684A
factory integration	• Option #0D1	• Option #0D1	• Option #0D1	• Option #0D1
release notes	• Option #AVN	• Option #AVN	• Option #AVN	• Option #AVN

for more information

For additional information on this or other HP enterprise connectivity solutions, please visit us on the Web at **www.hp.com/go/hp9000io**, or contact any of our worldwide sales offices or HP Channel Partners. (In the U.S., call 1 800 637 7740.)

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