

Overview

Introducing the 64-Bit/66-MHz Dual Channel Alt OS Wide Ultra3 SCSI Adapter which allows customers to store data at the Ultra 3 SCSI speeds. The flexible 64-bit/66-MHz single and dual channel PCI SCSI adapters provide support for up to 28 SCSI devices with data transfer rates up to 160 MB/s per second.

Models

64-Bit/66-MHz Dual Channel Alt OS Wide Ultra3 SCSI Adapter

284688-B21

Standard Features

Performance

Designed as to be as flexible as HP's legendary servers, the HP StorageWorks SCSI adapter family provides support for up to 28 SCSI devices, while only taking up a single PCI slot. HP adapters deliver exceptional system performance, along with up to two separate Wide Ultra3 SCSI channels that each provide up to 64-bit/66-MHz bus-master capabilities, transferring data as fast as 160 MB/s between storage subsystem and system memory.

HP Server Integration Fully integrated and tested with the entire line of ProLiant servers and management software.

Tagged Command Queuing Improves performance by accepting commands simultaneously, sorting efficiently and minimizing response time.

Suggested Solutions HP's dual channel adapters are ideal for high-end tape drives, tape automation and disk storage solutions such as the Ultrium 460 & 230 tape drives, SDLT 320 & 220 tape drives, both ESL and MSL Series Libraries, and the StorageWorks 43xx Enclosure.

Fault Tolerance

Supports software-based fault tolerant configurations available under NetWare.

Compatibility

Available for all HP PCI server configurations and compatible with a variety of SCSI devices, including hard drives, CD-ROM drives and tape drives.

Option Kit Contents

- Adapter
- Installation Guide
- Warranty Card
- Support Software CD

Warranty

Maximum: The remaining warranty of the HP product in which it is installed (to a maximum three-year limited warranty)

Minimum: One-year, on-site limited warranty

NOTE: Certain restrictions and exclusions apply. Consult the Customer Support Center at 1-800-345-1518 for details.

Options

NOTE: This is a list of supported options – some may be discontinued.

Hard Drives

NOTE: For complete compatibility information, refer to the HP SCSI Hard Drive Compatibility table located at <http://www.hp.com/servers/hdd-documentation>.

Ultra320 Universal Drives - Hot Plug

HP 300GB U320 10K Universal HDD	350964-B22
HP 146GB U320 10K Universal HDD	286716-B22
HP 72GB U320 10K Universal HDD	286714-B22
HP 146GB U320 15K Universal HDD	347708-B22
HP 72GB U320 15K Universal HDD	286778-B22
HP 36GB U320 15K Universal HDD	286776-B22

Ultra320 Drives - Non Hot Plug

HP 146GB U320 10K NHP HDD	356990-B21
HP 72GB U320 10K NHP HDD	332751-B21
HP 36GB U320 15K NHP HDD	357012-B21

Tape Drives

Internal and External DAT Tape Drives

HP StorageWorks DAT 24 SCSI Internal Tape Drive (Flint)	C1555D
HP StorageWorks DAT 24 SCSI External Tape Drive (Flint)	C1556D
HP StorageWorks DAT 40 SCSI Internal Tape Drive (Carbon)	C5686B
HP StorageWorks DAT 40 SCSI External Tape Drive (Carbon)	C5687C
HP StorageWorks DAT 40 SCSI Hot-plug Tape Drive (Carbon)	Q1546A
HP StorageWorks DAT 72 SCSI Internal Tape Drive (Carbon)	Q1522B
HP StorageWorks DAT 72 SCSI External Tape Drive (Carbon)	Q1523B
HP StorageWorks DAT 72 SCSI Hot-plug Tape Drive (Carbon)	Q1529A

Internal and External Ultrium Tape Drives

HP StorageWorks Ultrium 215 Internal Tape Drive (Carbon)	Q1543A
HP StorageWorks Ultrium 215 External Tape Drive (Carbon)	Q1545A
HP StorageWorks 1U Rack-mount kit with one Ultrium 215 (Carbon)	A7444A
HP StorageWorks 3U Rack-mount kit with one Ultrium 215 (Carbon)	350544-B21
HP StorageWorks Ultrium 215 Array Module (Carbon)	C7492B
HP StorageWorks Ultrium 230 Internal Tape Drive (Carbon)	Q1515A
HP StorageWorks Ultrium 230 External Tape Drive (Carbon)	Q1517A
HP StorageWorks Ultrium 230 Array Module (Carbon)	C7470B
HP StorageWorks 3U Rack-mount kith with one Ultrium 230 (Carbon)	350545-B21
HP StorageWorks Ultrium 232 Internal Tape Drive(Carbonite)	DW064A
HP StorageWorks Ultrium 232 External Tape Drive (Carbonite)	DW065B
HP StorageWorks Ultrium 448 Internal Tape Drive (Carbonite)	DW016A
HP StorageWorks Ultrium 448 External Tape Drive (Carbonite)	DW017B
HP StorageWorks 1U Rack-mount kit with one Ultrium 448 (Carbonite)	DW028B
HP StorageWorks Ultrium 460 Internal Tape Drive (Carbon)	Q1518A
HP StorageWorks Ultrium 460 External Tape Drive (Carbon)	Q1520A

Options

HP StorageWorks 3U Rack-mount kit with one Ultrium 460 (Carbon)	350546-B21
HP StorageWorks Ultrium 460,Array Module (Carbon)	Q1512B
HP StorageWorks Ultrium 960 Internal Tape Drive (Carbonite)	Q1538A
HP StorageWorks Ultrium 960 External Tape Drive (Carbonite)	Q1539B
HP StorageWorks 3U Rack-mount kit with one Ultrium 960 (Carbonite)	Q1595A
HP StorageWorks Ultrium 960 Array Module (Carbonite)	Q1540A

Internal and External DLT VS/SDLT Tape Drives

HP StorageWorks DLT VS80 Internal Tape Drive (Carbon)	337699-B21
HP StorageWorks DLT VS80 External Tape Drive, North America (Carbon)	337699-B22
HP StorageWorks DLT VS80 External Tape Drive, International (Carbon)	337699-B31
HP StorageWorks DLT VS160 Internal Tape Drive (Carbon)	A7569A
HP StorageWorks DLT VS160 External Tape Drive, North America (Carbon)	A7570A
HP StorageWorks DLT VS160 External Tape Drive, International (Carbon)	A7571A
HP StorageWorks SDLT 320 Internal Tape Drive (Carbon)	257319-B21
HP StorageWorks SDLT 320 External Tape Drive, North America(Carbon)	257319-001
HP StorageWorks SDLT 320 External Tape Drive, International (Carbon)	257319-B31
HP StorageWorks SDLT 320 External Tape Drive, Japan (Carbon)	257319-291
HP StorageWorks SDLT 600 Internal Tape Drive (Carbon)	A7518A
HP StorageWorks SDLT 600 External Tape Drive, North America (Carbon)	A7519A
HP StorageWorks SDLT 600 External Tape Drive, Worldwide (Carbon)	A7520A
HP StorageWorks 3U Rack-mount kit with one SDLT 600 (Carbon)	A7965A

Tape Autoloaders

SSL1016 Tape Autoloaders

HP StorageWorks SSL1016 Ultrium 460 Tape Autoloader	330821-B21
HP StorageWorks SSL1016 SDLT 320 Tape Autoloader	330816-B21

1/8 Autoloader

HP StorageWorks 1/8 Ultrium 960 Tape Autoloader	AF204A
HP StorageWorks 1/8 Ultrium 448 Tape Autoloader	AF203A
HP StorageWorks 1/8 Ultrium 232 Tape Autoloader	AF202A
HP StorageWorks 1/8 SDLT 320 Tape Autoloader	AA926A
HP StorageWorks 1/8 DLT VS80 Tape Autoloader	C9264CB

DAT Autoloader

HP StorageWorks DAT 72x6 Tape Autoloader (Internal)	Q1566A
HP StorageWorks DAT 72x6 Tape Autoloader (External)	Q1567A

Tape Libraries

StorageWorks MSL2024 System Library

HP StorageWorks MSL2024 1 Ultrium 960 Drive Library	AG115A
HP StorageWorks MSL2024 1 Ultrium 448 Drive Library	AG116A
HP StorageWorks MSL2024 2 Ultrium 448 Drive Library	AG117A

Options

HP StorageWorks MSL4048 Tape Library

HP StorageWorks MSL4048 1 Ultrium 448 Drive Library	AG320A
HP StorageWorks MSL4048 2 Ultrium 448 Drive Library	AG321A
HP StorageWorks MSL4048 1 Ultrium 960 Drive Library	AG322A
HP StorageWorks MSL4048 2 Ultrium 960 Drive Library	AG323A

StorageWorks MSL6000 System Library

MSL6060 Libraries

HP StorageWorks MSL6060 0 Drive Ultrium Library	AD602A
HP StorageWorks MSL6060 2 Ultrium 960 Dr LVDS Library	AD610A
HP StorageWorks MSL6060 2 Ultrium 960 Dr FC Library	AD611A
HP StorageWorks MSL6060 2 Ultrium 460 Dr LVDS Library	AD603A
HP StorageWorks MSL6060 2 Ultrium 460 Dr FC Library	AD604A

MSL6030 Libraries

HP StorageWorks MSL6030 0 Drive Ultrium Library	AD597A
HP StorageWorks MSL6030 1 Ultrium 960 Dr LVDS Library	AD606A
HP StorageWorks MSL6030 2 Ultrium 960 Dr LVDS Library	AD607A
HP StorageWorks MSL6030 1 Ultrium 960 Dr FC Library	AD608A
HP StorageWorks MSL6030 2 Ultrium 960 Dr FC Library	AD609A
HP StorageWorks MSL6030 1 Ultrium 460 Dr LVDS Library	AD598A
HP StorageWorks MSL6030 2 Ultrium 460 Dr LVDS Library	AD599A
HP StorageWorks MSL6030 1 Ultrium 460 Dr FC Library	AD600A
HP StorageWorks MSL6030 2 Ultrium 460 Dr FC Library	AD601A

MSL6052 Libraries

HP StorageWorks MSL6052 0 SDLT Drive Library	AD586A
HP StorageWorks MSL6052 2 SDLT 600 Dr LVDS Library	AD587A
HP StorageWorks MSL6052 2 SDLT 600 Dr FC Library	AD588A

MSL6026 Libraries

HP StorageWorks MSL6026 0 SDLT Drive Library	AD581B
HP StorageWorks MSL6026 1 SDLT 600 Dr LVDS Library	AD582B
HP StorageWorks MSL6026 2 SDLT 600 Dr LVDS Library	AD583B
HP StorageWorks MSL6026 1 SDLT 600 Dr FC Library	AD584B
HP StorageWorks MSL6026 2 SDLT 600 Dr FC Library	AD585B

StorageWorks MSL5000 System Library

MSL5052S2 Libraries (SDLT320 drives)

HP StorageWorks MSL5052S2, 0 DRV, SDLT RM Library	255102-B21
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Options

HP StorageWorks MSL5052S2, 2 DRV, SDLT 320, RM Library	293474-B21
HP StorageWorks MSL5052S2, 2 DRV, SDLT 320, RM Library with embedded FC router option	293474-B24

MSL5026S2 Libraries (SDLT320 drives)

HP StorageWorks MSL5026S2, 0 DRV, RM Library	293472-B21
HP StorageWorks MSL5026S2, 1 DRV, SDLT 320, RM Library	293472-B22
HP StorageWorks MSL5026S2, 2 DRV, SDLT 320, RM Library	293472-B23
HP StorageWorks MSL5026S2, 2 DRV, SDLT 320, RM Library with embedded FC router option	293472-B24
HP StorageWorks MSL5026S2, 1 DRV, SDLT 320, RM Library with embedded FC router option	293472-B25

ESL-E Series Libraries

HP StorageWorks ESL 712e Tape Library	AA934B
HP StorageWorks ESL 630e Tape Library	AA935B
HP StorageWorks ESL 322e Tape Library	AA939B
HP StorageWorks ESL 286e Tape Library	AA940B

Rack-mount Tape Drive Kits

HP StorageWorks 1U Rack-Mount Kit NOTE: The 1U Rack-mount Kit can support up to (2) half-height tape drives and compatible with multiple Single-Ended and LVD SCSI tape drives including the DAT 24, DAT 40, DAT 72, DLT VS80, DLT VS160, Ultrium 215, Ultrium 232 and Ultrium 448 tape drives.	A7445B
HP StorageWorks 1U USB Rack-Mount Kit	A8007A
HP StorageWorks 3U Rack-mount Kit NOTE: The 3U Rack-mount Kit can support up to (2) full-height or (4) half-height tape drives and compatible with multiple Single-Ended and LVD SCSI tape drives including DAT 24, DAT 40, DAT 72, DLT VS80, DLT VS160, SDLT 320, SDLT 600, Ultrium 215, Ultrium 230, Ultrium 232, Ultrium 460, Ultrium 448 and Ultrium 960 tape drives.	274338-B22
HP StorageWorks 5U Rack-mount Kit NOTE: The 5U Rack-mount Kit (PN 274339-B21) can support up to (4) full-height tape drives and is compatible with the Ultrium 960, Ultrium 460, SDLT 320 and SDLT 600 tape drives.	274339-B21

External Cables

VHDCI (Very High Density Cable Interconnect) to Wide, 6 foot (1.83 meter)	295644-B21
VHDCI to Wide, 12 foot (3.66 meter) for racks	295645-B21
VHDCI to Narrow, 6 foot (1.83 meter)	295646-B21
VHDCI to Narrow, 12 foot (3.66 meter) for racks	295647-B21

Internal Cables

LVD cable (Ultra2 or Ultra3)	166389-B21
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Options

External Storage Systems	HP StorageWorks Modular Smart Array 30 Enclosure, SB	302969-B21
	HP StorageWorks Modular Smart Array 30 Enclosure, DB	302970-B21

NOTE: Ultra3 LVD SCSI adapters must be used with Ultra3 LVD SCSI capable HDDs, cables, drivers and servers/workstations. Ultra3 LVD SCSI operation is only supported for drives internally mounted in the server. Ultra3 LVD SCSI is not supported for external storage systems. HP adapters will default to Wide Ultra2 SCSI for external storage subsystems.

Technical Specifications

SCSI Protocols	Wide Ultra3 SCSI Wide Ultra2 SCSI Wide-Ultra SCSI-3 Fast-Wide SCSI-2 Fast SCSI-2
Electrical Protocol	Low Voltage Differential (LVD)
Drives Supported	Up to 28 (14 per channel)
Storage Capacity	Up to 509.6 GB
Data Transfer Method	64-Bit/66-MHz PCI bus-master
Maximum Host Bus Transfer Rate	532 MB/s per channel
Maximum SCSI Transfer Rate	160 MB/s per channel
Operating System Support	OpenUNIX Solaris OS/2 Novell NetWare 3.2, 4.2, 5 Unixware 2.x, 7.x
External SCSI Connectors	Two 68-Pin VHDCI connectors
Internal SCSI Connectors	Two 68-Pin Wide-Ultra SCSI-3 connectors One 50-Pin Narrow Ultra connector

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For hard drives, 1 GB = 1 billion bytes. Actual formatted capacity is less.