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Product Datasheet

HP StorageWorks MSL5026S2 Tape Library

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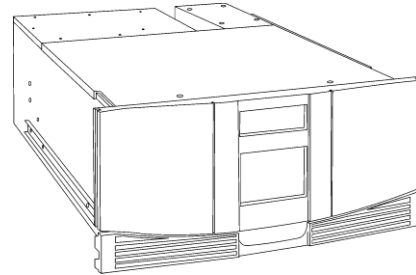
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MODELS

The HP StorageWorks MSL5026S2 Tape Library comes with 26 media slots (including one mail slot) and one or two HP SDLT 160/320 tape drives (number of drives determined by SKU chosen).

293472-B21	MSL5026S2, 0 DRV, RM Library
293472-B22	MSL5026S2, 1 DRV, SDLT 160/320, RM Library
293472-B23	MSL5026S2, 2 DRV, SDLT 160/320, RM Library
293472-B24	MSL5026S2, 1 DRV, SDLT 160/320, RM Library with embedded FC router option
293472-B25	MSL5026S2, 2 DRV, SDLT 160/320, RM Library with embedded FC router option
293473-B21	MSL5026S2, 1 DRV, SDLT 160/320, TT Library
293473-B22	MSL5026S2, 2 DRV, SDLT 160/320, TT Library
293475-B21	MSL5000, SDLT 160/320, upgrade drive in hot plug canister



Each library installation will require, (1) library system, (1) geographically specific power cord, (1) SCSI cable for each SDLT drive pair, and up to 26 pieces of SDLT media with bar code labels for each MSL5026S2. Multiple configurations will require additional passthrough kits. The minimum orderable configuration consists of a single library system (for instances where customer already has the necessary SCSI cables, power cord, and media). Installation services may also be ordered for customers who want to have a certified Hewlett-Packard Engineer perform an on-site library installation.

OVERVIEW

- The HP StorageWorks MSL5026S2 Tape Library is the latest addition to Hewlett-Packard's tape automation products for the mainstream automation segment. It offers high availability features with hot plug drives.
- It offers 8.32 TB (2:1 compression) of storage, providing the highest capacity in its class in a compact 5U form factor, in tabletop or rackmount configuration.
- It is scalable to up to eight units in a rackmount configuration to provide a maximum of 66.56 TB (2:1 compression) of data backup capacity.

MSL5026S2 Library Customer benefits include

- High availability feature for minimum downtime
- Reliable, cost effective backup, restoration and archival solution that fits a growing companies storage needs
- High storage capacity to backup large amounts of data in a small backup window
- Easy to operate which equates to lower cost of ownership
- Compressed form factor only taking 5U of rack space with a single module
- Removable magazines for off-site backup storage
- Multi-unit scalability for future growth and investment protection
- Compatible with a wide variety of operating systems, software applications, and server platforms



KEY FEATURES

- Hot plug drives for on line repair and capacity expansion, without interrupting library operations for minimum downtime
- One or two SDLT 160/320 drives, with a throughput of 16 MB/s (native) per drive for a backup performance of up to 115.2 GB/hr for a single unit
- Ultra2 LVD SCSI Interface
- Twenty-six data slots for a native capacity of 4.16 TB, giving the highest density in a 5U form factor in the mainstream segment (including one mail slot for quick load/unload and removable magazine)
- Two cPCI slots for added functionality through add-on cards in future
- GUI based touch screen panel for easy library operation
- Available as either a rackmount or tabletop configuration
- Multi-unit modular scalability, up to eight units, for future growth and investment protection

PRODUCT HIGHLIGHTS

High Availability and Hot Pluggable Drives

As data becomes more mission critical, and downtime becomes more costly, customers are requiring high availability features on tape automation devices. The MSL5026S2 uses hot pluggable SDLT drive carriers, allowing drive replacement without interrupting backup and restore functions. These hot pluggable drive trays allow for easy scalability of performance, as well as provide an easy upgrade path towards future SDLT drive technologies.

NOTE: The MSL5026S2 accepts only library-ready drives specifically modified for use in the MSL5026S2 library.

Proven Reliability

Using SDLT tape drives, and proven library robotics with a rating of 2,000,000 robot load/unload cycles, the MSL5026S2 provides the necessary high reliability for today's demanding environment.

DLT/SDLT Technology

Digital Linear Tape uses a proven linear recording technology, a highly accurate tape guide system, and a read-after-write correction system to provide high-capacity and high reliability data backup and restore. DLT has fast become the industry-standard secondary storage tape format for departmental and enterprise backup. The new generations of SDLT tape drive, in addition to enhanced capacity and backup performance, provide several new features such as Laser Guided Magnetic Recording (LGMR™) technology, Pivoting Optical Servo (POS), Magneto-Resistive Cluster Heads (MRC), Partial Response Maximum Likelihood (PRML) channel technology and backward read compatibility with earlier generations of DLT drives, to be able to read media written in DLT IV format.

Manageability

The MSL5026S2 library configurations are fully supported through Insight Manager v7.0, providing information to administrators for robotic status, tape status changes and fault status. HP's TSMC (tape storage management console) software provides diagnostics and easy firmware upgrade capabilities.

Remote Management Interface

The MSL5026S2 library features remote management through Ethernet interface using HP StorageWorks MSL5000 remote management interface.

Embedded Fibre to SCSI router Option

The MSL5026S2 library can optionally configure embedded Fibre to SCSI router to easy connection to a FC SAN, thus enabling direct Fibre connection to the library.

Multi-unit Modular Scalability

The MSL5026S2 has the capability for multi-unit scalability, up to eight modules can be scaled together in a virtual library. The first two modules are linked using the MSL5000 universal passthrough mechanism, which has the elevator mechanism for tape movement. Additions of subsequent modules require the MSL5000 5U passthrough extender (one for each additional module).

PRODUCT HIGHLIGHTS *(continued)*

Server Support

Enterprise ProLiant Servers

ProLiant DL760
ProLiant ML750

Departmental ProLiant Servers

ProLiant DL 580 G2
ProLiant ML570 G2
ProLiant ML530 G2

Workgroup ProLiant Servers

ProLiant DL380 G2
ProLiant ML370
ProLiant ML350
ProLiant ML330 G2
ProLiant DL360
ProLiant 320

AlphaServer Systems

AlphaServer GS160 and GS80
AlphaServer ES40
AlphaServer ES45
AlphaServer DS20E

HP-UX servers

Superdome
rp8400
rp7400 (N class)
rp5400 series (L Class)
rp2450/2470 (A class)
K class
D Class
B-class workstations
C-class workstations
J-class workstations

HP Netserver

HP lxr8500
HP lh6000
HP lh6000r
HP lt6000r
HP tc4100
HP tc3100
HP lh3000
HP lc2000r
HP lp2000r
HP lp1000r
HP e200
HP e800

Non-HP systems

Dell PowerEdge
IBM Netfinity
IBM RS6000
Sun Sparc

SCSI Controllers Supported

ProLiant Server Adapters

64-bit/66 MHz Dual Channel Wide Ultra 3 SCSI Adapter 129803-B21
64-bit/66 MHz Single Channel Wide Ultra 3 SCSI Adapter 154457-B21

AlphaServer Adapters

StorageWorks Ultra LVD single channel 3X-KZPCA-AA

Fibre Channel Controllers

HP HSC-eff Tachlite Fibre Channel Adapter A6684A
HP HSC Tachlite Fibre Channel Adapter A6685A
HP PCI 4X 2Gbps single port Fibre Channel Adapter A6795A

ProLiant Servers

64-Bit/66 MHz PCI to FC HBA (Persian/NetWare)
FCA2101 HBA (lp952)
QLA2200 (Linux)
QLA2340 (Linux and NetWare 6.0) FCA-2101 HBA (lp952)
KGPSA-CB HBA (NT lp8000)

AlphaServers

KGPSA-CA HBA (Alpha lp8000)
FCA-2354 HBA (lp9002)

Fibre Channel Routers

Network Storage Router m2402
Network Storage Router e1200 (FC embedded router within the library)
Network Storage Router n1200

PRODUCT HIGHLIGHTS *(continued)*

Application Support

Hewlett-Packard currently supports the following backup/restoration applications software packages:

Current support for the following Automation and Network Utilities

Insight manager v7.0

HP tape storage management console v2.3 (NT/2000), 2.0 (Netware)

MRU (media robot utility) v1.4

HP StorageWorks library and tape tools

Device/ISV/OS MSL SDLT160/320 Models Under SCSI, Direct-attach Fibre and SAN	Windows NT 4.0 SP6a	Windows 2000 SP2	Tru64 UNIX 4.0g 5.1a	HP-UX* 11i, 11.0, 10.2	NetWare 5.1 SP3	NetWare 6.0	Linux RH 7.1, 7.2 Linux SuSe 7.0	Sun Solaris 2.6, 2.7, 2.8	AIX 4.3.3
HP Omniback 4.x	✓	✓		✓	✓			✓	✓
HP Data Protector	✓	✓		✓	✓			✓	✓
VERITAS NetBackup 4.5	✓	✓	✓	✓				✓	✓
VERITAS NetBackup 3.4.3	✓	✓	✓	✓				✓	✓
Legato NetWorker 6.1.2	✓	✓	✓	✓			✓	✓	✓
VERITAS Backup Exec 8.6	✓	✓			✓	✓			
VERITAS Backup Exec 9.0					✓				
CA BrightStor ARCserve 2000	✓	✓							
CA BrightStor ARCserve 7					SCSI only	SCSI only			

* HP-UX commands fbackup/frecover and backups launched using HP-UX Site Area Manager are not supported

Media Partitioning Support

Media partitioning is the capability to create logical pools or partitions in a tape library. The MSL5026 supports media partitioning capability to support multiple drive types within a single library. Currently this capability supports SDLT 110/220, SDLT 160/320. Media partitioning capability is available via the ISV backup application software being used to perform backup and restores. The following applications support media partitioning capability:

Computer Associates Arcserve 2000 Build 15 for Windows NT/2000

VERITAS Backup Exec 8.6 for Windows NT/2000 Build 8.6.3808 and later

VERITAS NetBackup 3.4 or 3.4.1 with patch NB_3.4.1_1 for Windows NT/2000 and patch NB_3.4_1 for UNIX

Legato NetWorker 6.1.2 with Legato SmartMedia

Software Components

SmartStart: Server configuration and software integration tool from Hewlett-Packard.

SPECIFICATIONS

Control Panel	Library and Drive Status Move tape cartridges Load/Unload tape drives Maintenance (diagnostics) Library Configuration Statistics Inventory Check Security level set: operator, user, service Mail slot access Offline/Online Status Magazine removal/replacement							
SCSI Interface	Ultra2 LVD SCSI, VHDCI interconnect							
Form Factor	5U Rackmount Tabletop							
Shipping Dimensions - Product Only								
	Height [in]	Height [cm]	Width [in]	Width [cm]	Depth [in]	Depth [cm]	Weight [lb]	Weight [kg]
MSL5026S2 0 Drive, RM	8.75	22.2	17.00	43.2	30.00	76.2	43.0	19.5
MSL5026S2 1 Drive, RM	8.75	22.2	17.00	43.2	31.50	80.0	52.0	23.6
MSL5026S2 2 Drive, RM	8.75	22.2	17.00	43.2	31.50	80.0	61.0	27.7
MSL5026S2 1 Drive, TT	10.00	25.4	19.00	48.3	31.50	80.0	60.0	27.2
MSL5026S2 2 Drive, TT	10.00	25.4	19.00	48.3	31.50	80.0	69.0	31.3
Packaged								
MSL5026S2 0 Drive, RM	15.25	38.7	23.00	58.4	38.25	97.2	75.0	34.0
MSL5026S2 1 Drive, RM	15.25	38.7	23.00	58.4	38.25	97.2	84.0	38.1
MSL5026S2 2 Drive, RM	15.25	38.7	23.00	58.4	38.25	97.2	93.0	42.2
MSL5026S2 1 Drive, TT	15.75	40.0	25.25	64.1	40.00	101.6	90.0	40.8
MSL5026S2 2 Drive, TT	15.75	40.0	25.25	64.1	40.00	101.6	99.0	44.9
Capacity (native)	MSL5026S2 base unit		4.16 TB					
Performance (native)	16 MB/s per drive MSL5026S2 base unit Maximum configuration (8 modules with multi-unit scalability) Supports 1 or 2 SDLT 160/320 drives for native transfer rates up to 115.2 GB/hr Supports up to 16 SDLT 160/320 drives for native transfer rates up to 921.6 GB/hr							
Storage Capacity (compressed @ 2:1)	320 GB per cartridge MSL5026S2 base unit Maximum configuration (8 modules with multi-unit scalability) 26 slots (including one mail slot), for compressed (2:1) capacity up to 8.32 TB 8 * 26 slots, for compressed (2:1) capacity up to 66.56 TB							
Power Consumption	MSL5026S2 base unit 90 to 140V AC @47 to 63 Hz 176 to 259V AC @47 to 63 Hz Power requirement 180 Watts (typical) 200 Watts (maximum) Heat dissipation 612 BTU's/hour (typical) 671 BTU's/hour (maximum)							
Acoustic Noise	Noise Power Emission Level 8 bels, maximum Average sound pressure level 52 dBA							

SPECIFICATIONS *(continued)*

Robotics Performance	Initialization time	100 sec
	Inventory time	60 sec
	Cartridge swap (drive to slot)	15 sec average
Reliability	MTBF	250,000 hours (100% duty cycle)
	MSBF	2,000,000 robot load/unload cycles
Product Safety Requirements and Approvals	Safety EN60950/IEC950, UL, CSA/cUL, CE, VDE/TUV, GOST, BSMI	
	EMI, Class A FCC, C.I.S.P.R., ICES-003, CE, VCCI	

Warranty

One-year warranty, one-year onsite next day service.

Additional warranty protection can be purchased for all MSL5026S2 DLT library products.

NOTE: Certain restrictions and exclusions apply. Consult the Hewlett-Packard Customer Support Center for details.

HEWLETT-PACKARD INSTALLATION AND CAREPAQ INFORMATION

Hewlett-Packard Services provides warranty support for the MSL5026S2 via Hewlett-Packard Services and a worldwide network of authorized service providers. Toll-free 7 x 24 hardware technical phone support is provided for the duration of the product warranty. In addition, available service offerings include a full range of CarePacs packaged hardware and software services:

- Installation and start up
- Extended coverage hours and enhanced response times
- System management and performance services

Additional warranty protection and/or HP Installation packages can be purchased for the MSL5000 library products:

Software Product Services

- Stand-alone telephone support
- Rights to a new license
- Media and documentation updates

Hardware Product Services

- Installation services
- On-site Maintenance (includes warranty support)
- Response time upgrades during the warranty period
- Post-warranty coverage
- RAID setup and performance consulting via statement of work

For additional hardware installation and maintenance information please refer to the URL's listed below:

http://www.compaq.com/services/carepac/us/install/cp_storage.html

http://www.compaq.com/services/carepac/us/hardware/cp_storage.html

HEWLETT-PACKARD SERVICE AND WARRANTY SUPPORT

Warranty Upgrade Options

- Response - Upgrade on-site response from next business day to same day 4-hours
- Coverage - Extend hours of coverage from 5 days x 9 hours to 7 days x 24 hours
- Duration - Select duration of coverage for a period of 1, 3, or 5 years

NA CarePaq Information

Sample part numbers:

- FM-TLXHW-36 3 year, uplift to 5x9, next day response
- FM-TL4HR-36 3 year, uplift to 5x9, 4hr response
- FM-TL724-36 3 year, uplift to 7x24, 4hr response
- CarePaq is defined as an upgrade to the product warranty attribute, available for a specific duration and hours of coverage.
- CarePaq is not available for less than the products warranty duration.
- CarePaq is available for sale anytime during the warranty period for most products, but the commencement date will be the same as the warranty start date (delivery date to end user customer). Proof of purchase may be required.
- CarePaq services are prepaid.

For additional CarePaq (hardware & software) information, as well as, orderable part numbers please refer to the URL listed below:

<http://www.compaq.com/services/carepaq/index.html>

EMEA CarePaq Information

Additional CarePaq services are being developed to cover a broader range of StorageWorks Hardware and Software. Existing CarePaqs are available today MSL libraries.

Ask your local CarePaq Business Manager for the latest details.

CarePaq Priority Services (PS) Information for EMEA

- CarePaq Priority Services brings a totally new approach that removes the complexity from evaluating, planning and purchasing services on Hewlett-Packard Alpha and Storage platforms.
- CarePaq Priority Services are easy to purchase and easy to use and cover all external storage products not covered under server-based CarePaq services.

Standard Offerings

- CarePaq Priority Services provide an integrated hardware and software support that ensure consistent coverage across storage configurations.
- CarePaq Priority Service offers a rapid four-hour response with guaranteed work-through to completion for three years.
- CarePaq Priority Services have a standard call window of Monday to Friday 08:00 - 17:00 with uplifts to full 24x7 over three years with four-hour response time and work through to completion.
- CarePaq Priority Services also provide software support, with a two-hour response time for telephone access to highly trained support personnel.

For more information on how to order CarePaq Priority Services in EMEA please contact you local Certified Integration Partner or Authorized Reseller. Customized Installation Services (including installation of vendor backup software) and contract based support services are available by contacting your local Services department.

RELATED OPTIONS

The MSL5026S2 solution includes the following related options:

MSL5026S2 Libraries

293472-B21	MSL5026S2, 0 DRV, RM Library	613326517987
293472-B22	MSL5026S2, 1 DRV, SDLT 160/320, RM Library	613326517963
293472-B23	MSL5026S2, 2 DRV, SDLT 160/320, RM Library	613326517802
293472-B24	MSL5026S2, 1 DRV, SDLT 160/320, RM Library with embedded FC router option	613326517826
293472-B25	MSL5026S2, 2 DRV, SDLT 160/320, RM Library with embedded FC router option	613326583876
293473-B21	MSL5026S2, 1 DRV, SDLT 160/320, TT Library	613326517840
293473-B22	MSL5026S2, 2 DRV, SDLT 160/320, TT Library	613326517864

Supplied with each Library Unit:

- Library Unit (pre-configured with drives)
- Documentation Kit
 - EFIJS Translation CD
 - Users Guide
 - Diagnostic diskette/Software Guide
 - Warranty Card
 - Safety Card
 - Driver CD
- (1) SDLT 160/320 data Cartridge
- Bar Code Labels
- SCSI Terminators (1 per drive)
- SCSI Jumper Cable VHDCI
- Diagnostic Cable (for PC attach)
- Software: Tape Storage Management Console Media Robot Utility

Supplied with each library:

- Power Cord US/Canada
- Power Cord, specific to country of destination*
- * provided by local DCE where required

Power Cord (one required)

227099-001	Power Cord, US/Canada/Mexico (shipped with all units)	720591673581
227098-011	Power Cord, (Australia/China/New Zealand)	720591673567
157220-AR1	Power Cord, (South East Asia/India)	
157215-021	Power Cord, (Central Europe)	
157216-031	Power Cord, (United Kingdom/Hong Kong)	720591547288
157219-111	Power Cord, (Switzerland)	743172633156
157217-061	Power Cord, (Italy)	
157218-081	Power Cord, (Denmark)	
139867-006	Power Cord, (Japan)	

***NOTE:** US/Canada/Mexico power cords are shipped with all units. Order geographically specific power cords as needed.

RELATED OPTIONS *(continued)*

Drive, capacity, and memory upgrade kits

293475-B21	MSL5000 SDLT 160/320 upgrade drive in hot plug canister	613326517949
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Media and Bar Code Labels

232136-B21	MSL5000 dual magazine pack DLT/SDLT (2*13 slot magazines, left and right)	720591739829
188527-B21	SDLT Media 5-pack	720591390273
188527-B22	SDLT Media 10-pack	720591390587
188527-B26	SDLT Media 20- pack	720591433208
158398-001	DLT bar code labels 100 pieces	720591244507

- Additional media
- Additional magazines
- Bar Code Labels

SCSI Cables

341174-B21	SCSI Cable, VHDCI/VHDCI, 6 feet	743172660817
341175-B21	SCSI Cable, VHDCI/VHDCI, 12 feet	743172633927
341176-B21	SCSI Cable, VHDCI/Wide, 6 feet	743172660831
341177-B21	SCSI Cable, VHDCI/Wide, 12 feet	743172660848
201160-B21	SCSI Cable, VHDCI/Wide, 10 meter	720591469108

Check the cable-adapter matrix for tape libraries on:

<ftp://ftp.compaq.com/pub/products/storageworks/tape-and-optical-storage/adapter-cable-matrix.pdf>

SCSI Host Bus Adapter/Hewlett-Packard Fibre Channel to SCSI Router (optional)

Host bus adapter for SCSI connectivity from server to tape library in direct SCSI environment
 Network Storage Router, embedded FC Network Storage Routers to connect SCSI library to Fibre Channel hub/switch

SCSI Host Bus Adapters

	ProLiant Controllers	
129803-B21	64-bit/66 MHz PCI dual channel Wide Ultra3 SCSI adapter	743172876379
	Alpha Controllers	
3X-KZPCA-AA	Single Channel Ultra LVD Controller	
	Network Storage Router (required for SAN configuration)	
262653-B21	Network Storage Router m2402 (2FC X 4 LVD SCSI)	613326254516
262672-B21	MSL5000 Embedded Fibre Option Kit – Graphite (configured in the compact PCI slot within the MSL5000 library)	613326254417
280823-B21	Network Storage Router n1200 (1FC x 2 LVD SCSI)	613326408087

RELATED OPTIONS *(continued)*

Passthrough Mechanism

304825-B21	MSL5000, universal passthrough mechanism (includes elevator mechanism and router, required to connect first two units in a stack and can handle both SDLT and LTO Ultrium media)	613326628447
231824-B22	MSL5000, 5U passthrough extender (required one for each unit connected to the stack, for third and additional units)	720591730079
231894-B22	MSL5000 TT-RK KIT, ProLiant Rack	720591734336
231894-B21	MSL5000 TT-RK KIT, Alpha Rack	720591734312
304826-B21	MSL5000 system/e RM kit (HP racks)	613326628423
254795-001	Alpha Rail Kit	720591166243

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