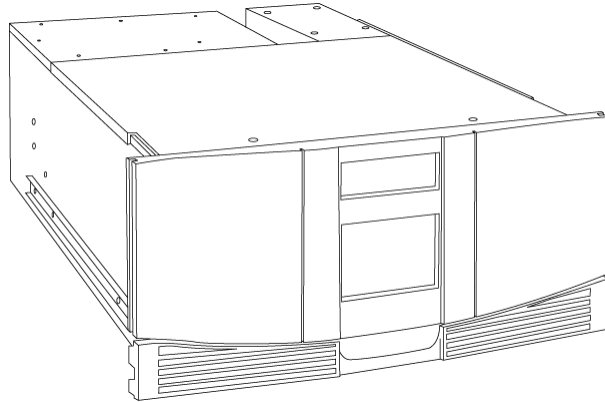


Overview



HP StorageWorks MSL5026S2 Tape Library

At A Glance

- The HP StorageWorks MSL5026S2 Tape Library is the latest addition to HP'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.

Product Highlights

HP StorageWorks MSL5026S2 Tape Library

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

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

Each library installation will require, (1) library system, (1) geographically specific power cord, (1) iSCSI 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 pass-through 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.

HP StorageWorks MSL5026S2 Tape Library Customer Benefits

- 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 online 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.

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 Tape Library 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 Tape Library.

Proven Reliability

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

Product Highlights

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 HP StorageWorks MSL5026S2 Tape 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.
Investment Protection	The MSL5026S2 can be upgraded to Ultrium tape drives simply by removing the current tape drives and magazines and replacing them with the desired Ultrium drive(s) and magazines.
Remote Management Interface	The MSL5026S2 Tape Library features remote management through Ethernet interface using HP StorageWorks MSL5000 remote management interface.
Embedded Fibre to SCSI router Option	The MSL5026S2 Tape 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 HP StorageWorks MSL5026S2 Tape Library 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 pass-through extender (one for each additional module).

Product Highlights

Server Support	Enterprise ProLiant Servers	ProLiant DL760	ProLiant ML750
	Departmental ProLiant Servers	ProLiant DL 580 G2	ProLiant ML530 G2
		ProLiant ML570 G2	
	Workgroup ProLiant Servers	ProLiant DL380 G2	ProLiant ML330 G2
		ProLiant ML370	ProLiant DL360
		ProLiant ML350	ProLiant 320
	AlphaServer Systems	AlphaServer GS160 and GS80	AlphaServer ES45
		AlphaServer ES40	AlphaServer DS20E
	HP-UX servers	Superdome	K class
		rp8400	D class
rp7400 (N class)		B-class workstations	
rp5400 series (L Class)		C-class workstations	
rp2400 series (A class)		J-class workstations	
HP NetServer	HP Ixr8500	HP lh3000	
	HP lh6000	HP lc2000r	
	HP lh6000r	HP lp2000r	
	HP lt6000r	HP lp1000r	
	HP tc4100	HP e200	
	HP tc3100	HP e800	
Non-HP systems	Dell PowerEdge	IBM RS6000	
	IBM Neffinity	Sun Sparc	

SCSI Controllers Supported	ProLiant Controllers	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
	Alpha Controllers	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 E1200-160 (FC embedded router within the library)		
	Network Storage Router N1200		

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
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ISV/OS Support For the most up-to-date ISV & OS support please consult the Enterprise Backup Solutions Compatibility Matrix at <http://www.hp.com/go/ebs>.

Product Highlights

Media Partitioning Support

Media partitioning is the capability to create logical pools or partitions in a tape library. The MSL Tape Libraries media partitioning capability supports multiple drives types within a single library or in a multi-unit stack. For current software supported, please consult the Enterprise Backup Solutions Compatibility Matrix at <http://www.hp.com/go/ebs>.

Software Components

SmartStart

Server configuration and software integration tool from Hewlett-Packard

Service and Support, HP Care Pack and Warranty Information

HP Installation and HP Care Pack Information

Hewlett-Packard provides a one year, limited warranty, together with phone support for the duration of the warranty. In order to provide ease of installation, maximize uptime and ROI, Hewlett Packard provides a range of upgradeable service options.

Description	Band For MSL5026 1 or 2 drive library	Band For Drive upgrade kits	Installation Band	Part Number
Initial Tape Library Installation	463	N/A	5DR	HA113A1
Initial Tape Library Implementation Into SAN	463	N/A	5DR	HA114A1
Subsequent Tape Installation	N/A	8G5	5DU	HA113A1
HW, "3-year", "next-day", "on-site"	463	8G5	N/A	HA101A3
HW, "3-year", "4-hour", "13 x 5", "on-site"	463	8G5	N/A	HA103A3
HW, "3-year", "4-hour", "24 x 7", "on-site"	463	8G5	N/A	HA104A3
Support plus, "3-year"*	463	8G5	N/A	HA109A3
Support plus 24, "3-year"*	463	8G5	N/A	HA110A3

Hewlett Packard also offers 1-year options for the services quoted above.

* Support Plus covers Hardware support only.

Due to the complexities involved with the initial installation of an enterprise Library into a SAN environment, Hewlett Packard recommends that customers take advantage of the SAN Implementation Service (HA114A1). This service covers pre-installation preparation activities, installation and configuration of the library and router, configuration of hosts and switches, verification testing and customer orientation.

In order to maximize ROI and product uptime, and minimize the cost of ownership, Hewlett-Packard recommends the 3-year, 24 x 7 service options. These offerings will ensure that any product issue can be tackled when they occur (most back up issues will occur outside standard business hours) and that the service coverage regarding period, covers the minimum expected life of the host system.

Auto Power On

Auto-power-on is a feature that allows the library to reboot in the event of a power failure without operator intervention. This feature must be installed by an authorized service technician.

Description	Band	Product Number
Auto-Power-On for MSL5026/5030	5AU	HA124A1

Related Options

The MSL5026S2 solution includes the following related options:

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

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

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

Auto-Power-On

Auto-Power-On allows the library to automatically reboot in the event of a power failure. For details on ordering this option, please visit the "Installation and HP Care Pack Services" section of this document.

Related Options

Drive, capacity, and memory upgrade kits	MSL5000 SDLT 160/320 upgrade drive in hot plug canister	613326517949	293475-B21
Media and Bar Code Labels	MSL5000 dual magazine pack DLT/SDLT (Two *13 slot magazines, left and right)		232136-B21
	HP Super DLTtape 1 Data Cartridge		C7980A
	HP Super DLTtape 1 Pre-labeled Data Cartridge, 20 pack (NA)		C7980AL
	HP Super DLTtape 1 Pre-labeled Data Cartridge, single pack (EURO)		C7980L
	HP SDLT Cleaning Cartridge		C7982A
	HP SDLT Bar Code Label Pack		Q2003A
	NOTE: Option kit includes 100 data and 10 cleaning labels.		
SCSI Cables	SCSI Cable, VHDCI/VHDCI, 6 feet	743172660817	341174-B21
	SCSI Cable, VHDCI/VHDCI, 12 feet	743172633927	341175-B21
	SCSI Cable, VHDCI/Wide, 6 feet	743172660831	341176-B21
	SCSI Cable, VHDCI/Wide, 12 feet	743172660848	341177-B21
	SCSI Cable, VHDCI/Wide, 10 meter	720591469108	201160-B21
	NOTE: 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		
	64-bit/66 MHz PCI dual channel Wide Ultra3 SCSI adapter	743172876379	129803-B21
	Alpha Controllers		
	Single Channel Ultra LVD Controller		3X-KZPCA-AA
	Network Storage Router (required for SAN configuration)		
	Network Storage Router M2402 (2FC X 4 LVD SCSI)	613326254516	262653-B21
	Network Storage Router E1200-160 – Fibre Channel to SCSI Router (Configured in the Compact PCI slot within the MSL library)		330728-B21
	Network Storage Router N1200 (1FC x 2 LVD SCSI)	613326408087	280823-B21
Pass-through Mechanism	MSL5000, universal pass-through 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	304825-B21
	MSL5000, 5U pass-through extender (required one for each unit connected to the stack, for third and additional units)	720591730079	231824-B22
	MSL5000 TT-RK KIT, ProLiant Rack	720591734336	231894-B22
	MSL5000 TT-RK KIT, Alpha Rack	720591734312	231894-B21
	MSL5000 system/e RM kit (HP racks)	613326628423	304826-B21
	Alpha Rail Kit	720591166243	254795-001

Technical 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 (cm)	Width – in (cm)	Depth – in (cm)	Weight – lb (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	Supports 1 or 2 HP StorageWorks SDLT 160/320 Tape Drives for native transfer rates up to 115.2 GB/hr
	Maximum configuration (8 modules with multi-unit scalability)	Supports up to 16 HP StorageWorks SDLT 160/320 Tape Drives for native transfer rates up to 921.6 GB/hr
Storage Capacity (compressed @ 2:1)	320 GB per cartridge	13.5 lb (6.12 kg per drive)
	MSL5026S2 base unit	26 slots (including one mail slot), for compressed (2:1) capacity up to 8.32 TB
	Maximum configuration (8 modules with multi-unit scalability)	Eight * 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) 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

Technical Specifications

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.

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