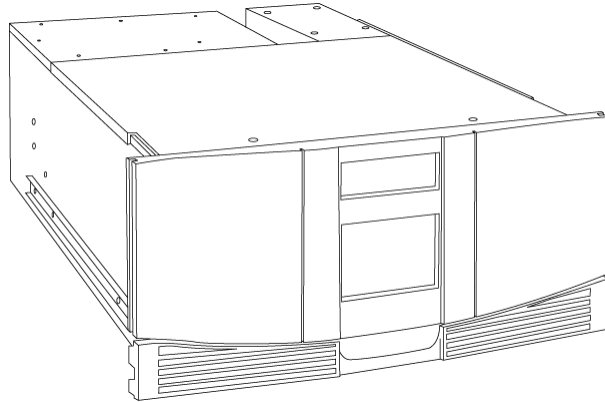


Overview



HP StorageWorks MSL5026SL Tape Library

At A Glance

- The HP StorageWorks MSL5026SL Tape Library starts HP's mid-range family of tape automation products for the mainstream automation segment. It is the first to offer high availability features in this segment with hot plug drives.
- It offers 5.72 TB (2:1 compression) of storage, providing the highest capacity in its class in a compact 5U form factor, in tabletop or rackmount configurations.
- It is scalable up to seven units in a rackmount configuration to provide a maximum of 40.04 TB (2:1 compression) of data backup capacity

Product Highlights

HP StorageWorks MSL5026SL Tape Library (graphite) Models

The HP StorageWorks MSL5026SL Tape Library comes with 26 media slots (including one mail slot) and one or two HP StorageWorks SDLT 110/220 Tape Drives (number of drives determined by SKU chosen).

MSL5026SL, 0 DRV, RM Graphite Library	293472-B21
MSL5026SL, 1 DRV, SDLT 110/220, TT Graphite Library	302511-B21
MSL5026SL, 2 DRV, SDLT 110/220, TT Graphite Library	302511-B22
MSL5026SL, 1 DRV, SDLT 110/220, RM Graphite Library	302512-B21
MSL5026SL, 2 DRV, SDLT 110/220, RM Graphite Library	302512-B22
MSL5000 Field Upgrade SDLT 110/220 Drive, LVD	231823-B22

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 MSL5026SL. Multiple configurations will require additional pass-through kits.

The minimum orderable configuration consists of a single library system (for instances where customers already have 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 onsite library installation.

MSL5026SL 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 110/220 drives, with a throughput of 11 MB/s (native) per drive for a backup performance of up to 79.2 GB/hr for a single unit
- Ultra2 LVD SCSI interface
- Twenty-six data slots for a native capacity of 2.86 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 MSL5026SL 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 MSL5026SL accepts only library ready drives specifically modified for use in the MSL5026SL library.

Proven Reliability

Using SDLT tape drives, and proven library robotics with a rating of 2,000,000 robotic load/unload cycles, the MSL5026SL 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, high reliability data backup and restoration. DLT has fast become the industry-standard secondary storage tape format for departmental and enterprise backup. The new generations of SDLT tape drives, 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 generation of DLT drives, to be able to read media written in DLT IV format.

Manageability

The HP StorageWorks MSL5026SL library configurations are fully supported through Hewlett-Packard Insight Manager 7.0, providing information to administrators for robotic status, tape status changes and fault status. Hewlett-Packard TSMC (tape storage management console) software provides diagnostics and easy firmware upgrade capabilities.

Investment Protection

The HP StorageWorks MSL5026SL can be upgraded to Ultrium tape drives simply by removing the current tape drives and magazines and replacing them with the desired Ultrium drive. The MSL5026SL can also be upgraded to SDLT 320 tape drives by simply removing the current tape drives and replacing them with SDLT 320 tape drives.

Multi-unit Modular Scalability

The HP StorageWorks MSL5026SL has the capability for multi-unit scalability; up to eight libraries can be scaled together in a virtual library. The first two modules are linked using pass-through mechanism, which has the elevator mechanism for tape movement. Additions of subsequent modules require the pass-through extender (one for each additional module).

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>.

Server Support

NOTE: Some servers may no longer be available for purchase.

ProLiant DL760	HP Ixr8500
ProLiant ML750	HP lh6000
ProLiant DL580 G2	HP lh6000r
ProLiant ML570 G2	HP lt6000r
ProLiant ML530 G2	HP tc4100
ProLiant DL380 G2	HP tc3100
ProLiant ML370	HP lh3000
ProLiant ML350	HP lc2000r
ProLiant DL360	HP lp2000r
ProLiant DL320	HP lp1000r
AlphaServer GS320, GS160, GS 80	HP e200
AlphaServer ES40	HP e800
AlphaServer 4X00	Dell PowerEdge
AlphaServer DS20E	IBM Neffinity
AlphaServer 1200	IBM RS6000
AlphaServer DS10/DS10L	Sun Sparc
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

Product Highlights

Application Support	Automation and Network Utilities	Media Robot Utility (MRU) v1.4 StorageWorks Tape Storage Management Console v2.3 Insight Manager v7.0 For the latest updated compatibility matrix for ISV backup software supported go to http://h18000.www1.hp.com/products/storageworks/tapecompatibility.html
	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

		UPC Code	Part Number
MSL5026SL - graphite Library System	MSL5026, 0 DRV, RM Library	613326517987	293472-B21
	MSL5026, 1 DRV, SDLT 110/220, TT Graphite Library	613326578636	302511-B21
	MSL5026, 2 DRV, SDLT 110/220, TT Graphite Library	613326578612	302511-B22
	MSL5026, 1 DRV, SDLT 110/220, RM Graphite Library	613326578490	302512-B21
	MSL5026, 2 DRV, SDLT 110/220, RM Graphite Library	613326578476	302512-B22

Supplied with each Library Unit

Library Unit (pre-configured with drives)
 One HP StorageWorks LTO Ultrium 200 GB (native) Data Cartridge
 One HP Ultrium Universal Cleaning Cartridge
 Bar Code Labels (35 Labels)
 SCSI Terminator(s) (1 per drive)
 SCSI Jumper Cable(s) VHDCI .5m (1 per drive)
 Diagnostic Cable (RJ11-DB9 for PC attach)
 MSL5000 and MSL6000 Series Documentation CD
 Driver CD – Media Robot utility CD
 MSL Utility floppy diskettes (2 disks)
 Warranty Card
 Safety Warnings Document
 ISS Safety Guide-HP
 5U/10U Rack Template Poster (RM only)

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.

Drive, capacity, and memory upgrade kits	MSL5000 Field Upgrade SDLT 110/220 DR, LVD	720591730017	231823-B22
	MSL5000 SDLT 160/320 Upgrade Drive in Hot Plug Canister	613326517949	293475-B21
	MSL6000 Ultrium 460 Upgrade Drive in Hot Plug Canister	808736892636	330729-B21

Related Options

Media and Bar Code Labels	MSL5000 Dual Magazine Pack DLT/SDLT (2x 13 slot magazines, left and right)	720591739829	232136-B21
	HP SDLT 1 220/320 Pre-labeled Data Cartridge		C7980A
	HP SDLT Cleaning Cartridge		C7982A
	HP Super DLTape 1 Pre-labeled Data Cartridge		C7980AL
	HP Super DLTape 1 Pre-labeled Data Cartridge, single pack (EURO)		C7980L
	HP SDLT bar code label pack		Q2003A
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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		
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SCSI Host Bus Adapter/Hewlett-Packard Fibre Channel to SCSI Router (optional)	Host Bus Adapter (HBA) for SCSI connectivity from server to tape library in direct SCSI environment		
	Network Storage Router, embedded FC Network Storage Router to connect SCSI libraries to Fibre Channel hub/switch		
	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	
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Fibre Channel Host Bus Adapter	HSC-eff Tachlite Fibre Channel Adapter		A6684A
	HSC Tachlite Fibre Channel Adapter		A6685A
	PCI 4X 2Gbps single port Fibre Channel Adapter		A6795A
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Pass-through Mechanism	MSL5000, 5U Pass-through extender (required one for each unit connected to the stack, for third and additional units)	720591730079	231824-B22
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Rack mounting Kits	MSL5000 system RM kit (HP racks)	613326628423	304826-B21
	MSL5026SL TT-RM KIT, ProLiant Rack	720591734336	231894-B22
	MSL5026SL TT-RM KIT, Alpha Rack	720591734312	231894-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)
MSL5026SL 0 Drive, RM	8.75 (22.2)	17.00 (43.2)	30.00 (76.2)	43.0 (19.5)
MSL5026SL 1 Drive, RM	8.75 (22.2)	17.00 (43.2)	31.50 (80.0)	52.0 (23.6)
MSL5026SL 2 Drive, RM	8.75 (22.2)	17.00 (43.2)	31.50 (80.0)	61.0 (27.7)
MSL5026SL 1 Drive, TT	10.00 (25.4)	19.00 (48.3)	31.50 (80.0)	60.0 (27.2)
MSL5026SL 2 Drive, TT	10.00 (25.4)	19.00 (48.3)	31.50 (80.0)	69.0 (31.3)

Packaged

MSL5026SL 0 Drive, RM	15.25 (38.7)	23.00 (58.4)	38.25 (97.2)	75.0 (34.0)
MSL5026SL 1 Drive, RM	15.25 (38.7)	23.00 (58.4)	38.25 (97.2)	84.0 (38.1)
MSL5026SL 2 Drive, RM	15.25 (38.7)	23.00 (58.4)	38.25 (97.2)	93.0 (42.2)
MSL5026SL 1 Drive, TT	15.75 (40.0)	25.25 (64.1)	40.00 (101.6)	90.0 (40.8)
MSL5026SL 2 Drive, TT	15.75 (40.0)	25.25 (64.1)	40.00 (101.6)	99.0 (44.9)

Capacity (native)	MSL5026SL base unit	2.86 TB
Performance (native)	15 MB/s per drive	
	MSL5026SL base unit	Supports 1 or 2 SDLT 110/220 drives for native transfer rates up to 79.2 GB/hr
	Maximum configuration (7 modules with multi-unit scalability)	Supports up to 14 SDLT 110/220 drives for native transfer rates up to 554.4 GB/hr
Storage Capacity (compressed @ 2:1)	200 GB per cartridge	
	MSL5026SL base unit	26 slots (including one mail slot), for native capacity up to 2.86 TB
	Maximum configuration (7 modules with multi-unit scalability)	7 * 26 slots, for native capacity up to 20.02 TB
Power Consumption	MSL5026SL 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	EN60950 (IEC 950), UL1950, CSA C22.2 950, VDE 0805/11.92 (TUV), EMKO-TSE 207/94 (NEMKO, FIMKO, DEMKO, SEMKO), SCFI-1993, KONKAR, MEEI, EVPU, SIQ, VCCI Class 1, C-Tick (Class A) SMA AZ/NZS 3548 Class A, BCIQ, CE Marking Directive (93/68/EEC) (Class A), EMC Directive [89/336/EEC], Low Voltage Directive [73/23/EEC] (some in process)	
Warranty	One-year warranty, one-year onsite next day service. Additional warranty protection can be purchased for all MSL5026SL SDLT library products. NOTE: Certain restrictions and exclusions apply. Consult the Hewlett-Packard Customer Support Center for details.	

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