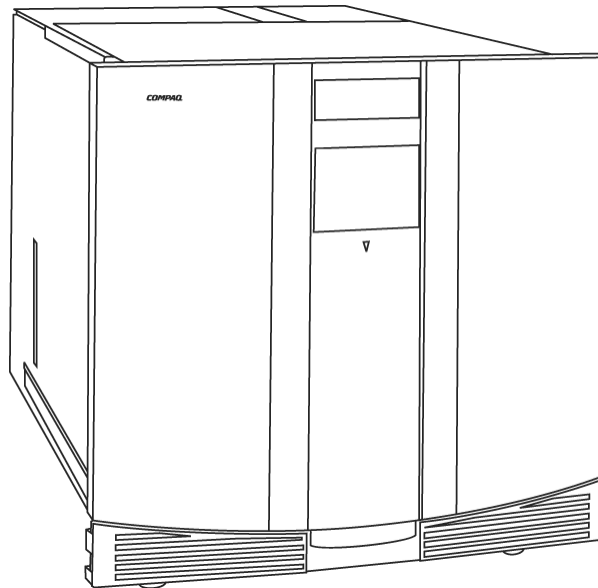


Overview



HP StorageWorks MSL5052S2

At A Glance

- The HP StorageWorks MSL5052S2 Tape Library is the latest addition to Hewlett-Packard tape automation products for the departmental automation segment. It offers high availability features with hot plug drives and dual redundant power supply.
- It offers 16.64 TB (2:1 compression) of storage, providing the highest capacity in its class in a compact 10U form factor, in tabletop or rackmount configurations.
- It is scalable up to four modules in a rackmount configuration to provide a maximum of 66.56TB (2:1 compression) of data backup capacity.

Product Highlights

HP StorageWorks MSL5052S2 Tape Library

The HP StorageWorks MSL5052S2 Tape Library comes with 52 media slots (including two mail slots) and up to four HP StorageWorks SDLT 160/320 GB Tape Drives (number of drives determined by SKU chosen).

MSL5052S2, 0 DRV, SDLT 160/320, RM Library	255102-B21
MSL5052S2, 2 DRV, SDLT 160/320, TT Library	293476-B21
MSL5052S2, 2 DRV, SDLT 160/320, RM Library	293474-B21
MSL5052S2, 2 DRV, SDLT 160/320, RM Library with embedded FC router option	293474-B24

Each library installation will require, (1) library system, (1) geographically specific power cord, (1) SCSI cable for each SDLT 160/320 drive pair, and SDLT media with bar code labels for each MSL5052S2. 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 pair, and media).

Installation services may also be ordered for customers who want to have a certified Hewlett-Packard Engineer perform an onsite library installation.

MSL5052S2 Library Customer Benefits

- High availability feature for minimum downtime
- Reliable, cost-effective backup, restoration and archival solution that fits a growing company's storage needs
- High storage capacity to back up large amounts of data in a small backup window
- Easy to operate which equates to lower cost of ownership
- Compact form factor only taking 10U of rack space with a single module
- Removable magazines for offsite 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
- Dual redundant power supplies to provide higher level of availability and reliability
- Up to four SDLT 160/320 GB drives, with a throughput of 16 MB/s (native) per drive, for a backup performance of up to 230.4 GB/hour for a single module
- Ultra2 LVD SCSI interface
- Fifty-two data slots (including two mail slots) for a native capacity of 8.32 TB, giving the highest density in a 10U form factor in the departmental segment (including one mail slot for quick load/unload and removable magazine)
- Five cPCI slots for added functionality through add-on cards in future
- Touch-screen GUI panel for easy library operation
- Available as either a rackmount or tabletop configuration
- Multi-unit modular scalability, up to four units, for future growth and investment protection. In addition can also scale with the MSL5026 library using the passthrough mechanism

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 MSL5052S2 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 MSL5052S2 accepts only library-ready drives specifically modified for use in the MSL5052S2 library.

Proven Reliability

Using SDLT tape drives, and proven library robotics with a rating of 2,000,000 robot load/unload cycles, the MSL5052S2 provides the necessary high reliability for today's demanding environment.

Product Highlights

SDLT Technology	DLT (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 generation SDLT tape drive, provides enhanced capacity and backup performance and includes 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 type IV format).
Manageability	HP StorageWorks tape storage management console (TSMC) software provides diagnostics and easy firmware upgrade capabilities.
Investment Protection	The MSL5052S2 can be upgraded to Ultrium tape drives simply by removing the current tape drives and magazines and replacing them with the desired Ultrium drive and magazine.
Remote Management Interface	The MSL5052S2 library features remote management through Ethernet interface using HP StorageWorks MSL5000 remote management console.
Embedded Fibre to SCSI Router Option	The MSL5052S2 library supports an embedded Fibre to SCSI router for easy connection to a FC SAN, thus enabling direct Fibre connection from within the library.
Multi-unit Modular Scalability	The MSL5052S2 has the capability for multi-unit scalability – up to four modules 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 and an MSL5000 10U passthrough extender. Additions of subsequent modules require additional MSL5000 10U pass-through extenders (one for each additional module).

Product Highlights

Server Support

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

ProLiant DL760	HP Ixr8500
ProLiant ML750	HP Ih6000
ProLiant DL580 G2	HP Ih6000r
ProLiant ML570 G2	HP It6000r
ProLiant ML530 G2	HP tc4100
ProLiant DL380 G2	HP tc3100
ProLiant ML370	HP Ih3000
ProLiant ML350	HP Ic2000r
ProLiant DL360	HP Ip2000r
ProLiant DL320	HP Ip1000r
AlphaServer GS320, GS160, GS 80	HP e200
AlphaServer ES40	HP e800
AlphaServer 4X00	Dell PowerEdge
AlphaServer DS20E	IBM Netfinity
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

Application Support

Automation and Network Utilities

HP Insight Manager v7.0
HP Tape Storage Management Console v2.3 (NT/2000) and 2.0 (NetWare)
MRU (media robot utility) v1.4
HP StorageWorks Library and Tape Tools v3.1

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>.

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 MSL5052 library	Band For Drive upgrade kits	Installation Band	Part Number
Initial Tape Library Installation	464	N/A	5DS	HA113A1
Initial Tape Library Implementation Into SAN	464	N/A	5DS	HA114A1
Subsequent Tape Installation	N/A	8G5	5DU	HA113A1
HW, "3-year", "next-day", "on-site"	464	8G5	N/A	HA101A3
HW, "3-year", "4-hour", "13 x 5", "on-site"	464	8G5	N/A	HA103A3
HW, "3-year", "4-hour", "24 x 7", "on-site"	464	8G5	N/A	HA104A3
Support plus, "3-year"*	464	8G5	N/A	HA109A3
Support plus 24, "3-year"*	464	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 MSL5052/5060	5AW	HA124A1

Related Options

		UPC Code	Part Number
MSL5052S2 Library System	MSL5052S2, 0 DRV, SDLT 160/320, Rackmount	720591169749	255102-B21
	MSL5052S2, 2 DRV, SDLT 160/320, Tabletop	613326517888	293476-B21
	MSL5052S2, 2 DRV, SDLT 160/320, Rackmount	613326517901	293474-B21
	MSL5052S2, 2 DRV, SDLT 160/320, Rackmount with embedded FC router option	613326517925	293474-B24

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

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: (Shipped with all units.) Order Local power cords separately.

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 SDLT 160/320 upgrade drive in Hot Plug Canister	613326517949	293475-B21
---	---	--------------	------------

Related Options

Media and Bar Code Labels	MSL5000 dual magazine DLT/SDLT pack (2 x 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	743172660824	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>

FC Host Bus Adapters	HSC-eff Tachlite Fibre Channel Adapter		A6684A
	HSC Tachlite Fibre Channel Adapter		A6685A
	PCI 4X 2Gbps single port Fibre Channel Adapter		A6795A
	1 Gb PCI Fibre Channel Adapter		176479-B21
	2 Gb PCI Fibre Channel Adapter		245299-B21

For more information on FC HBAs please consult the EBS connectivity matrix at <http://www.hp.com/go/ebs>

SCSI Host Bus Adapters	ProLiant/NetServer		
	64-bit 66 MHz PCI Dual Channel Wide Ultra3 SCSI adapter	743172876379	129803-B21
	Ultra3 LVD, single channel controller	743172991447	154457-B21
	HP-UX		
	Ultra 2 LVD single port		A5149A
	Ultra 2 LVD dual port		A5150A
	Ultra3 LVD single port		A6828
	Ultra3 LVD dual port		A6829
	LVD single port		A4999A
	For more information on SCSI HBAs please consult the EBS connectivity matrix at http://www.hp.com/go/ebs		

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

Related Options

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, 10U pass-through extender	720591743581	231824-B23
<hr/>			
Rack mounting Kits	MSL5000 system/e RM kit (HP racks)	613326628423	304826-B21
	MSL5000 TT-RM Kit, ProLiant Rack	720591734336	231894-B22
	MSL5000 TT-RM Kit, AlphaServer Rack	720591734312	231894-B21

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 -

Packaged	Height – in (cm)	Width – in (cm)	Depth – in (cm)	Weight – lb (kg)
MSL5052S2S 0 Drive, RM	33.00 (83.8)	47.00 (119.4)	31.00 (78.7)	147.0 (66.7)
MSL5052S2S 2 Drive, RM	33.00 (83.8)	47.00 (119.4)	31.00 (78.7)	161.0 (73.0)
MSL5052S2S 2 Drive, TT	33.00 (83.8)	47.00 (119.4)	31.00 (78.7)	174.0 (78.9)

Product Only

MSL5052S2S 0 Drive, RM	17.50 (44.5)	17.00 (43.2)	30.00 (76.2)	95.0 (43.1)
MSL5052S2S 2 Drive, RM	17.50 (44.5)	17.00 (43.2)	31.50 (80.0)	109.0 (49.4)
MSL5052S2S 2 Drive, TT	18.50 (47.0)	19.00 (48.3)	31.50 (80.0)	122.0 (55.3)

Capacity (native)	MSL5052S2S base unit	8.32 TB
Performance (native)	16 MB/s per drive	
	MSL5052S2S base unit	Supports up to 4 SDLT 160/320 GB drives for native transfer rates up to 230.4 GB/hour
	Maximum configuration (four modules with multi-unit scalability)	Supports up to 16 SDLT 160/320 GB drives for native transfer rates up to 921.6 GB/hour
Storage Capacity (compressed @ 2:1)	320GB per cartridge	
	MSL5052S2S base unit	52 slots (including two mail slots), for capacity of 16.64 TB (2:1 compressed)
	Maximum configuration (four modules with multi-unit scalability)	208 slots, for capacity up to 66.56TB (2:1 compressed)
Power Consumption	MSL5052S2S base unit	90 to 132V AC @ 47 to 63Hz 180 to 264V AC @ 47 to 63Hz
	Power requirement	300 Watts (typical) 360 Watts (maximum) 1020 BTU's/hour (typical) 1224 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	240 sec
	Inventory time	110 sec
	Cartridge swap (drive to slot)	22 sec average
Reliability	MTBF	250,000 hours (100% duty cycle) (excludes drives)
	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 MSL5052S2S SDLT library products. NOTE: Certain restrictions and exclusions apply. Consult the Hewlett-Packard Customer Support Center for details.

© Copyright 2003 Hewlett-Packard Development Company, L.P.
The information contained herein is subject to change without notice.

Windows NT is a US registered trademark of Microsoft Corporation. Unix is a registered trademark of The Open Group.

The only warranties for HP products and services are set forth in the express warranty statements accompanying such products and services. Nothing herein should be construed as constituting an additional warranty. HP shall not be liable for technical or editorial errors or omissions contained herein.