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Product Datasheet

HP StorageWorks MSL5052S2 Tape Library

For UK Pricing, Sales and Support please contact:

Targetfour Limited. Imperial House, 8 Oaklands Park, Wokingham, Berks. RG41 2FD

Tel. 0118 936 4300 Fax. 0118 936 4329

Email. sales@targetfour.com Website: www.targetfour.com

MODELS

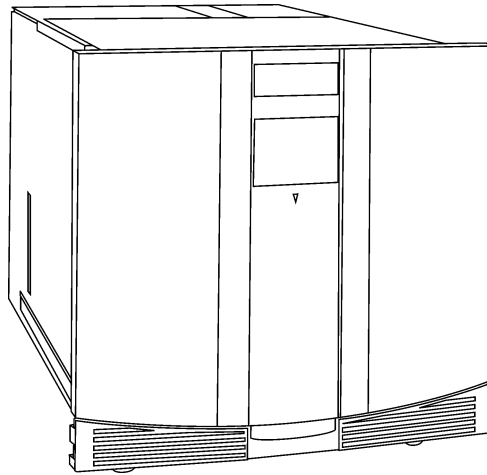
The HP StorageWorks MSL5052S2 Tape Library comes with 52 media slots (including two mail slots) and up to four HP StorageWorks SDLT 160/320 GB tape drives (number of drives determined by SKU chosen).

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

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.



OVERVIEW

- 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

MSL5052S2 Library Customer Benefits Include:

- 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

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 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.

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.

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 passthrough mechanism, which has the elevator mechanism for tape movement and an MSL5000 10U passthrough extender. Additions of subsequent modules require additional MSL5000 10U passthrough extenders (one for each additional module).

PRODUCT HIGHLIGHTS *(continued)*

Server Support

Enterprise ProLiant Servers

ProLiant DL760
ProLiant ML750

Departmental ProLiant Servers

ProLiant DL580 G2
ProLiant ML570 G2
ProLiant ML530 G2

Workgroup ProLiant Servers

ProLiant DL380 G2
ProLiant ML370
ProLiant ML350
ProLiant DL360
ProLiant DL320

AlphaServer Systems

AlphaServer GS320, GS160, GS 80
AlphaServer ES40
AlphaServer 4X00
AlphaServer DS20E
AlphaServer 1200
AlphaServer DS10/DS10L

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 Ixr8500
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

PRODUCT HIGHLIGHTS *(continued)*

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-O/S Support

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® Red Hat® 7.1, 7.2 Linux SuSe® 7.3	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 MSL5052S2 tape library supports media partitioning capability to support multiple drive types within a single library. Currently this capability supports SDLT 110/220 and SDLT 160/320 tape drives. 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	Rackmount 10U abletop							
Shipping Dimensions	Height [inches]	Height [cm]	Width [inches]	Width [cm]	Depth [inches]	Depth [cm]	Weight [lb]	Weight [kg]
Packaged								
MSL5052S2S (0 Drive, RM)	33.00	83.8	47.00	119.4	31.00	78.7	147.0	66.7
MSL5052S2 (2 Drive, RM)	33.00	83.8	47.00	119.4	31.00	78.7	161.0	73.0
MSL5052S2 (2 Drive, TT)	33.00	83.8	47.00	119.4	31.00	78.7	174.0	78.9
Product Only								
MSL5052S2 (0 Drive, RM)	17.50	44.5	17.00	43.2	30.00	76.2	95.0	43.1
MSL5052S2 (2 Drive, RM)	17.50	44.5	17.00	43.2	31.50	80.0	109.0	49.4
MSL5052S2 (2 Drive, TT)	18.50	47.0	19.00	48.3	31.50	80.0	122.0	55.3
Capacity (native)	MSL5052S2 base unit		.32 TB					
Performance (native)	16 MB/s per drive							
	MSL5052S2 base unit		Supports up to four 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							
	MSL5052S2 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	MSL5052S2 base unit		90 to 132V AC @ 47 to 63Hz 180 to 264V AC @ 47 to 63Hz					
	Power requirement		300 Watts (typical) 360 Watts (maximum)					
	Heat dissipation		1020 BTU's/hour (typical) 1224 BTU's/hour (maximum)					
Acoustic Noise	Noise power emission level		8 bels, maximum					
	Avg. sound pressure level		52 dBA					
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 MI, Class A FCC, C.I.S.P.R., ICES-003, CE, VCCI							

Warranty

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

Additional warranty service protection can be purchased for all MSL5052S2 DLT Library products.

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

HEWLETT-PACKARD INSTALLATION AND CAREPAQ SERVICES

HP services provides warranty support for the MSL5052S2 via HP Global 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

Hewlett-Packard Service and Warranty Support

Additional warranty service protection and/or Hewlett-Packard installation packages can be purchased for the MSL5052S2 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

For additional hardware installation and maintenance information please refer to the URLs listed below:

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

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 CarePac Information

Sample part numbers:

146840-002	(FM-T8XHW-36)	3-year, uplift to 5x9, next day response
146832-002	(FM-T84HR-36)	3-year, uplift to 5x9, 4 hour response
146835-002	(FM-T8724-36)	3-year, uplift to 7x24, 4 hour response
146839-002	(FM-T8INS-IN)	MSL5000 hardware installation

- CarePac is defined as an upgrade to the product warranty attribute, available for a specific duration and hours of coverage.
- CarePac is not available for less than the products warranty duration.
- CarePac 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.
- CarePac services are prepaid.

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

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

HEWLETT-PACKARD INSTALLATION AND CAREPAQ SERVICES *(continued)*

EMEA CarePaq Information

Additional CarePaq services are being developed to cover a broader range of HP StorageWorks hardware and software. Existing CarePaqs are available today for LTO Ultrium and DLT/SDLT technologies. 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 8:00 – 5:00 with upgrades 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 your 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

MSL5052S2 LIBRARY SYSTEM

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

Supplied with each library:

- 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

RELATED OPTIONS *(continued)*

Power Cord (Pair 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. (Unit requires 2 power cords – one for each power supply)

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 DLT/SDLT pack (2 x 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	743172660824
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>

FC Host Bus Adapters

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

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

RELATED OPTIONS *(continued)*

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

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

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 e1200 - graphite (configured in the compact PCI slot within the MSL5000 library - graphite colored)	613326254417
280823-B21	Network Storage Router N1200 (1FC x 2 LVD SCSI)	613326408087
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-B23	MSL5000, 10U passthrough extender	720591743581
Rack Mounting Kits		
304826-B21	MSL5000 system/e RM kit (HP racks)	613326628423
231894-B22	MSL5000 TT-RM Kit, ProLiant Rack	720591734336
231894-B21	MSL5000 TT-RM Kit, AlphaServer Rack	720591734312

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