

HP StorageWorks MSL2024/MSL4048/MSL8048/ MSL8096 Tape Libraries

Family data sheet

HP StorageWorks MSL Tape Libraries can simplify your data protection infrastructure by managing multiple single-tape drives, consolidating them to a single hardware device that meets a broad range of demanding data storage needs, including unattended backup, archive, and disaster recovery. Designed for medium-to large-sized businesses, workgroups, or remote offices, HP MSL Tape Libraries provide the high performance you need in a condensed physical size that conserves rack and desktop space inside crowded data centers. Their primary job is to automate your backups so that they occur right on schedule, without worries that someone will forget to do them or use the wrong tape.



With a range of products designed to span from small businesses to larger data centers, the HP StorageWorks MSL Tape Libraries simplify your data protection and offer remarkable storage density without consuming valuable rack space.

	HP MSL2024	HP MSL4048	HP MSL8048/8096
Form Factor	2U	4U	8U
Number of slots	24 slots	48 slots	48 -96 slots
Maximum capacity*	Up to 72TB	Up to 144TB	Up to 288TB
Maximum transfer rate*	Up to 1TB/hour	Up to 2TB/hour	Up to 4TB/hour

*compressed 2:1

HP MSL Tape Libraries offer customers a choice of LTO Ultrium Tape Drive configurations including the latest generation of LTO-5 Ultrium 3280 Tape Drive and a choice of interfaces. Library partitioning provides added flexibility and tape-based encryption provides added security to comply with government and industry guidelines. You can also manage your media both in and out of the library with a standard barcode reader and removable magazines. All HP MSL Tape Libraries arrive rack-ready for quick installation in a standard 19" rack, but both the HP MSL2024 and MSL4048 can be converted to a tabletop configuration with a conversion kit. And when the time comes to add performance, you can protect your investment with tool-free, next-generation upgrades.

Monitoring and managing these devices is simple. If you need to manage multiple remote sites, Web based remote management lets you control HP MSL Tape Libraries from across the room, away from your desk, or outside the office. The HP TapeAssure dashboard makes managing, optimizing, and archiving faster and easier through comprehensive summaries and detailed information about the status, performance, utilization, and health of all tape drives and tapes within the HP MSL Tape Library.

HP StorageWorks MSL2024

The compact HP StorageWorks MSL2024 Tape Library is the ideal entry-level tape library with the capacity and features to handle backup and recovery jobs typically handled by mid-range tape libraries. The MSL2024 provides a compressed capacity (2:1) of up to 72TBs when configured with two LTO-5 tape drives in a compact 2U form factor normally associated with a tape autoloader.

HP StorageWorks MSL4048

The HP StorageWorks MSL4048 Tape Library will meet a broad range of demanding data storage needs including unattended backup, archive, and disaster recovery for small to medium businesses, workgroups, or remote offices. The MSL4048 offers up to 144 TB of compressed (2:1) storage capacity in only a 4U form factor and your choice of LTO-5, LTO-4 or LTO-3 Ultrium tape drives.

HP StorageWorks MSL8048/8096

For large businesses, workgroups or remote offices, the MSL 8U libraries are available in two slot configurations. The 48-slot MSL 8048 is scalable from 144TBs to 288TB compressed (2:1) capacity (96 slots) without a hardware upgrade, using the slot license upgrade option. The 96-slot HP MSL8096 Tape Library provides 288TB of compressed (2:1) storage when configured with HP LTO-5 Ultrium tape drives. With a reliability rating of 2 million mean swaps between failures you can be assured of high end library performance standards. In addition, you may add a second power supply for even greater reliability.



Greater value

High density – capacities up to 288TBs* with HP LTO-5 Ultrium, MSL Tape Libraries pack the maximum amount of storage into the minimum amount of space.

Investment protection – benefit from a straight-forward upgrade path as your storage capacity and performance needs grow. Tool-free next generation tape drive upgrade kits allow the latest HP Storage Works LTO Ultrium Tape Drives to be added to your library as they become available. A choice of SCSI, FC and SAS tape drive interfaces provide flexible options for installing the library in a SCSI, SAN or SAS environment.

Extensive compatibility testing – HP MSL Tape Libraries are supported on a broad range of industry leading servers, operating systems and backup software. For more information, visit: www.hp.com/go/ebs

Flexible and easy to use

Easier media management – all tape libraries include a standard bar code reader to provide faster inventory times and to facilitate tracking of media. The removable 12-slot magazines, two in the MSL2024, four in the MSL4048 and eight in the MSL8048/MSL8096, enable bulk loading of media and also provide a convenient bulk storage unit for moving media off-site. For dedicated import/export of media cartridges, each library includes user enabled mail slots.

Manageability – integrated web-based management allows an IT administrator to remotely control and troubleshoot the device, eliminating costly onsite resources at remote offices. HP TapeAssure provides continuous monitoring and dashboard status of drives and media, allowing proactive management of health, utilization and operational performance.

Reduced installation time – the MSL2024, MSL4048 and MSL8048/8096 Tape Libraries are delivered as rack-ready for quick installation in a standard 19" rack; a rack kit is included in the box. A separate rack-to tabletop conversion kit is available to purchase for the MSL2024 and MSL4048 allowing these libraries to be configured for a desktop environment.

Partitioning – each MSL Tape Library may be partitioned with up to one partition per drive with each partition appearing as an independent library to the host. The host for each partition may own independent sets of media and utilise different backup application software for maximum flexibility.

Dependable

Data security – the MSL Tape Libraries are available with LTO-4 and LTO-5 Ultrium hardware encrypting tape drive to enhance data privacy. Use with the HP Encryption Kit for an affordable, self-contained encryption solution.

High reliability – HP MSL Tape Libraries provide peace of mind with over 2 million mean swaps between failure. The HP MSL4048 and MSL8048/8096 provide all the reliability features expected with larger tape libraries including a user-installable optional second power supply.

* Assumes 2:1 data compression ratio

Technical specifications

MSL2024



MSL4048



MSL8048



MSL8096



Form factor	2U	4U	8U	8U
Tape drives supported	1 LTO-5 Ultrium 3280 1 LTO-5 Ultrium 3000 1 LTO-4 Ultrium 1840 1 to 2 LTO-4 Ultrium 1760 1 to 2 LTO-3 Ultrium 920	1 to 2 LTO-5 Ultrium 3280 1 to 2 LTO-5 Ultrium 3000 1 to 2 LTO-4 Ultrium 1840 1 to 4 LTO-4 Ultrium 1760 1 to 4 LTO-3 Ultrium 920	2 to 4 LTO-5 Ultrium 3280 2 to 4 LTO-5 Ultrium 3000 2 to 4 LTO-4 Ultrium 1840 2 to 4 LTO-4 Ultrium 1760 2 to 4 LTO-3 Ultrium 960 2 to 4 LTO-3 Ultrium 920	2 to 4 LTO-5 Ultrium 3280 2 to 4 LTO-5 Ultrium 3000 2 to 4 LTO-4 Ultrium 1840 2 to 4 LTO-4 Ultrium 1760 2 to 4 LTO-3 Ultrium 960
Number of slots	24	48	48 (scalable to 96)	96
Removable magazines	2	4	8	8
Maximum compressed capacity	72TB	144TB	144 to 288TB	288TB
Maximum compressed transfer rate	1TB/hour	2TB/hour	2 to 4TB/hour	4TB/hour
Dimensions (w x h x l) (out-of-box)	3.4 x 18.9 x 31.7 in (8.7 x 48 x 80.6 cm)	6.9 x 19.9 x 31.7 in (17.5 x 48 x 80.6 cm)	13.9 x 18.9 x 31.7 in (35.2 x 48 x 80.6 cm)	13.9 x 18.9 x 31.7 in (35.2 x 48 x 80.6 cm)
Weight (out-of-box)	32.9 lb (14.9 kg)	47.2 lb (21.4 kg)	102 lb (46 kg)	102 lb (46 kg)
Interfaces available	8Gb Native Fibre Channel 4Gb Native Fibre Channel Ultra320 LVD SCSI 3Gb/sec SAS 6Gb/sec SAS	8Gb Native Fibre Channel 4Gb Native Fibre Channel Ultra320 LVD SCSI 3Gb/sec SAS 6Gb/sec SAS	8Gb Native Fibre Channel 4Gb Native Fibre Channel Ultra320 LVD SCSI 3Gb/sec SAS 6Gb/sec SAS	8Gb Native Fibre Channel 4Gb Native Fibre Channel Ultra320 LVD SCSI 3Gb/sec SAS 6Gb/sec SAS
What's included	<p>All HP StorageWorks MSL Tape Libraries include:</p> <ul style="list-style-type: none"> • one 1.83 M US power cord (C13, 10A) • one 2.5 M PDU power cord (C13/C14, 10A) • one RJ-45 Ethernet cable • rack-mount hardware (for use with HP's 10000 series, 9000 series, 5000 series or System E racks) • Getting Started Poster <p>SCSI models also include:</p> <ul style="list-style-type: none"> • one 6 ft VHDCI to HDTS68 SCSI cable per drive • one HDTS68 SCSI terminator per SCSI tape drive <p>MSL8048/8096 also includes HP Data Protector Software 61-250 slot License-to-Use entitlement certificate</p>			
Warranty	1-year parts exchange, next business day	1-year parts exchange, next business day	1-year onsite, next business day	1-year onsite, next business day
Recommended media	For information on recommended HP Storage Media, please visit: www.hp.com/go/storagemedia			

Order Information

MSL2024 Tape Library

SKU	Product name/description	SKU	Product name/description
BL531A	HP StorageWorks MSL2024 1 LTO-5 Ultrium 3280 8Gb FC Tape Library	AK378A	HP StorageWorks MSL2024 1 LTO-4 Ultrium 1760 SAS Tape Library
BL542A	HP StorageWorks MSL2024 1 LTO-5 Ultrium 3000 8Gb FC Tape Library	AJ817A	HP StorageWorks MSL2024 1 LTO-4 Ultrium 1760 SCSI Tape Library
BL537A	HP StorageWorks MSL2024 1 LTO-5 Ultrium 3000 6 Gb SAS Tape Library	AH169A	HP StorageWorks MSL2024 1 LTO-3 Ultrium 920 SCSI Tape Library
AJ034A	HP StorageWorks MSL2024 1 LTO-4 Ultrium 1840 4Gb FC Tape Library	AH559A	HP StorageWorks MSL2024 1 LTO-3 Ultrium 920 SAS Tape Library
AJ033A	HP StorageWorks MSL2024 1 LTO-4 Ultrium 1840 SCSI Tape Library	AK379A	HP StorageWorks MSL2024 0-drive, 24 Slot Library

MSL4048 Tape Library

SKU	Product name/description	SKU	Product name/description
BL532A	HP StorageWorks MSL4048 1 LTO-5 Ultrium 3280 8Gb FC Tape Library	AJ037A	HP StorageWorks MSL4048 2 LTO-4 Ultrium 1840 SCSI Tape Library
BL543A	HP StorageWorks MSL4048 2 LTO-5 Ultrium 3000 8Gb FC Tape Library	AK380A	HP StorageWorks MSL4048 2 LTO-4 Ultrium 1760 SAS Tape Library
BL538A	HP StorageWorks MSL4048 2 LTO-5 Ultrium 3000 6Gb SAS Tape Library	AJ818A	HP StorageWorks MSL4048 2 LTO-4 Ultrium 1760 SCSI Tape Library
AJ036A	HP StorageWorks MSL4048 1 LTO-4 Ultrium 1840 4Gb FC Tape Library	AH171A	HP StorageWorks MSL4048 1 LTO-3 Ultrium 920 SCSI Tape Library
AJ038A	HP StorageWorks MSL4048 2 LTO-4 Ultrium 1840 4Gb FC Tape Library	AK381A	HP StorageWorks MSL2024 0-drive, 48 Slot Library

MSL8048/8096 Tape Library

SKU	Product name/description	SKU	Product name/description
AU300A	HP StorageWorks MSL8048 Tape Library, 0-drive	AN974A	HP StorageWorks MSL8096 4 LTO-4 Ultrium 1840 4Gb FC Tape Library
BL533A	HP StorageWorks MSL8096 2 LTO-5 Ultrium 3280 8Gb FC Tape Library	AK382A	HP StorageWorks MSL8096 2 LTO-4 Ultrium 1760 SAS Tape Library
BL534A	HP StorageWorks MSL8096 4 LTO-5 Ultrium 3280 8Gb FC Tape Library	AN973A	HP StorageWorks MSL8096 4 LTO-3 Ultrium 960 4Gb FC Tape Library
BL539A	HP StorageWorks MSL8096 2 LTO-5 Ultrium 3000 6Gb SAS Tape Library	TA739A	HP StorageWorks MSL8048 48 to 96 slots license upgrade
AJ040A	HP StorageWorks MSL8096 2 LTO-4 Ultrium 1840 4Gb FC Tape Library		

Accessories for the HP StorageWorks MSL Tape Libraries

Magazine Kits: AG119A HP StorageWorks MSL2024 Ultrium Left Magazine Kit
AG330A HP StorageWorks MSL4048/8096 Ultrium Left Magazine Kit
AG120A HP StorageWorks MSL2024/4048/8096 Ultrium Right Magazine Kit

Encryption Kit: AM495A HP StorageWorks 1/8G2 & MSL Encryption Kit
Note: For use with new or installed LTO-5 or LTO-4 Ultrium 1/8 G2 Tape Autoloaders and MSL2024/4048/8048/8096 Tape Libraries. The Encryption Kit key server token will generate and retain encryption keys for HP LTO-5 or LTO-4 Ultrium tape drives in the autoloader or library. Does not require support from ISV

Tabletop Conversion Kits: AG121A HP StorageWorks MSL2024 Rack-to-tabletop Conversion Kit

Library Extender Kit: AQ746A HP StorageWorks MSL Library Extender Kit
Possible configurations include:

Extended Library Configurations		Slot Numbers (without mail slots enabled)	
Lower Library	Master Library	Lower Library	Master Library
MSL2024	MSL4048	1-24	25-72
MSL4048	MSL4048	1-48	49-96
MSL2024	MSL8048*	1-24	25-120
MSL4048	MSL8096*	1-48	49-144

* All slots must be enabled before using the Library Extender Kit

The Library Extender Kit does not support combining two MSL2024 or two MSL8096 libraries. The Extended Library will not support partitioning

Redundant Power Supply Upgrade Kit: AH220A HP StorageWorks MSL4048/8096 Redundant Power Supply

LTO Ultrium Drive Upgrade Kits: The following drive upgrade kits are for use with the MSL 2024, 4048, 8048, or 8096 Tape Libraries. Each drive kit includes a tape drive and appropriate documentation.

- BL535A HP StorageWorks MSL LTO-5 Ultrium 3280 8Gb FC Drive Upgrade Kit
- BL544A HP StorageWorks MSL LTO-5 Ultrium 3000 8Gb FC Drive Upgrade Kit
- BL540A HP StorageWorks MSL LTO-5 Ultrium 3000 6Gb SAS Drive Upgrade Kit
- AJ042A HP StorageWorks MSL LTO-4 Ultrium 1840 4Gb FC Drive Upgrade Kit
- AJ041A HP StorageWorks MSL LTO-4 Ultrium 1840 SCSI Drive Upgrade Kit
- AK383A HP StorageWorks MSL LTO-4 Ultrium 1760 SAS Drive Upgrade Kit
- AJ819A HP StorageWorks MSL LTO-4 Ultrium 1760 SCSI Drive Upgrade Kit
- AG328B HP StorageWorks MSL LTO-3 Ultrium 960 4Gb FC Drive Upgrade Kit
- AG327A HP StorageWorks MSL LTO-3 Ultrium 960 SCSI Drive Upgrade Kit
- AH173A HP StorageWorks MSL LTO-3 Ultrium 920 SCSI Drive Upgrade Kit
- AH562A HP StorageWorks MSL LTO-3 Ultrium 920 SAS Drive Upgrade Kit

The Total Package—Solution Value Statements

HP Data Protector Software

The MSL2024 and MSL4048 include HP Data Protector Express Single Server Edition backup and recovery software. HP Data Protector Express Single Server Edition is based on HP Data Protector Express and is only available with HP StorageWorks tape drives, tape autoloaders and MSL2024 and MSL4048 tape libraries. It includes many of the features of HP Data Protector Express, such as support for HP LTO-5 and LTO-4 Ultrium data encryption. Using Data Protector Express Single Server Edition you can easily backup a single Windows, Linux or NetWare server to a single drive MSL tape library. You can also, at no risk, evaluate, Data Protector Express as a solution for protecting multiple servers by backup to a multi-drive MSL tape library.

As well as Data Protector Express Single Server Edition, the HP StorageWorks MSL tape library solutions also include the Data Protector Express Bare Metal Disaster Recovery option. This enables DR support for the protected server in the event of a disk failure or other serious incident.

Once registered, Data Protector Express Single Server Edition and the Data Protector Express Bare Metal Disaster Recovery option are licensed for permanent use. This is not trialware. However, should you decide to upgrade from Data Protector Express Single Server Edition to Data Protector Express you can purchase Data Protector Express at a significant discount to the regular buy price.

The MSL8048 and MSL8096 Libraries include a free 61-250 slot License-to-Use entitlement certificate in the box for HP Data Protector software. HP Data Protector software automates high performance backup and recovery, from disk or tape, over unlimited distances, to enable 24x7 business continuity and improve IT resource utilization. Data Protector software responds to the pressure for lower IT costs and greater operational efficiency by offering acquisition and deployment costs which are 30 - 70 % less than competition.

HP StorageWorks Encryption Kit

The HP StorageWorks 1/8 G2 & MSL Encryption Kit provides a library-enabled encryption solution providing data privacy, confidentiality, and integrity of your critical business data while supporting compliance requirements. Designed as a self-contained solution for smaller businesses, the encryption kit is affordable and easy to use.

One encryption kit is required per library and includes two USB key server tokens, product documentation, and firmware support. One USB key server token is installed and remains in the USB port of the library to enable encryption by using a random number generator to generate and store

encryption keys for the LTO-5 or LTO-4 Ultrium drives. A cryptographic module running on FIPS 140-2 Level 3 validated hardware, password authentication, and digital envelopes provide strong encryption keys for highly secure operation. A second USB key server token is provided in the kit to be used as a backup token which can be stored in a secure location.

HP LTO Ultrium Cartridges

HP LTO-5 Ultrium media offers the superior capacity/performance ratio of any tape technology, with terabyte-class capacity and performance. It has almost double the capacity and offers faster performance compared to LTO-4 Ultrium, with built-in encryption capability and a WORM option—with no performance overhead. Standardizing on HP LTO-5 Ultrium delivers the capacity to meet shrinking backup windows, Industry-standard, AES 256-bit encryption (IEEE1619.1), and interchangeable RW or WORM media, without extra space or IT resource overhead.

Intelligent cartridge

Superior “smart grabber” mechanism and mechanical interlock to prevent the leader pin from being pulled inside the tape housing. Sensors detect proper connection and prevent leader loss that would ruin the tape.

Durable cartridge design

Simplified tape path to reduce wear and tear and build up of and debris (important in automation).

Tested to extremes

HP brand qualification test procedures (load/unload, shoeshine, drop testing, and environmental stress testing) go far beyond what is required for the LTO Ultrium logo. This provides maximum reliability for restoring your data.

Limited lifetime warranty

HP warrants LTO Ultrium cartridges for up to 30 years archival life and/or 260 full backups. This enables businesses to meet the ever-increasing demands of regulation for data retention and archiving.

HP StorageWorks MSL Library Extender Kit

Leverage the investment in your MSL Library, now or in the future, to increase both capacity and performance as data needs change. Customer installable in under an hour, the HP StorageWorks MSL Library Extender Kit can be used to connect two MSL libraries to create one larger, logical library that appears to the host as a single library. The Extender Kit can be used with MSL2024, 4048, or 8096 libraries and is compatible with both new and currently installed libraries.

Service and support

HP Factory Express Options

HP Factory Express offers configuration, customization, integration and deployment services for HP servers and storage products. Customers can choose how their factory solutions are built, tested, integrated, shipped and deployed. Customization must comply with all relevant product specifications and factory supported configurations. Factory Express offers service packages for simple configuration, racking, installation, complex configuration and design services as well as individual factory services, such as image loading, asset tagging, and custom packaging. HP products supported through Factory Express include a wide array of servers and storage: HP Integrity, HP ProLiant, HP ProLiant Server Blades, HP BladeSystem, and HP 9000 servers as well as MSA, VA7xxx, EVA, and XP disk arrays, rackable tape libraries and configurable network switches.

Type of service support varies by platform and product family. For more information on Factory Express services for your specific server model or storage device please contact your sales representative or go to: <http://www.hp.com/go/factory-express>

Customer technical training

Consider education as an integral part of your strategy to get better return on investment from your HP storage solution. HP offers a variety of training courses on storage software, networking, archiving, and disk storage systems. Our classes are available in many delivery modalities from traditional

instructor-led courses at one of our 80 training centers worldwide to onsite training customized to you needs, or online at www.hp.com/learn/storage

HP Financial Services

HP Financial Services provides innovative financing and financial asset management programs to help you cost-effectively acquire, manage, and ultimately retire your HP solutions. For more information on these services, please contact your HP representative or visit www.hp.com/go/hpfinancialservices

HP Technology Services

Helps take the worry out of deploying, supporting, and managing your HP StorageWorks MSL Tape Library solution—trust the services professionals at HP to boost availability and avoid costly downtime.

Recommended Services

- 3-Year HP Support Plus 24 Service: For a higher return on your storage technology, this 3-year combined reactive support option delivers integrated onsite hardware/software support services available 24x7.
- HP Installation Service: For smooth startup and better business outcomes, this service provides initial hardware installation of your product into your technology environment (system configuration is not included).

Related Services

- HP Proactive Select Service: To improve IT performance and manageability through the use of cost effective flexible proactive services
- HP Care Pack Services: HP Care Pack Services offer upgraded service levels to extend and expand your standard product warranty with easy-to-buy, easy-to-use support packages that help you make the most of your hardware and software investments Information about HP Care Pack Service features and benefits is available at www.hp.com/hps/carepack/services

For more information about HP services and support, contact your HP sales representative or HP-authorized Channel Partner or, visit www.hp.com/hps/storage



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