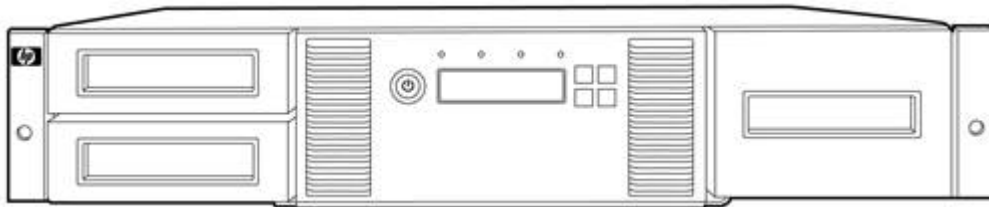


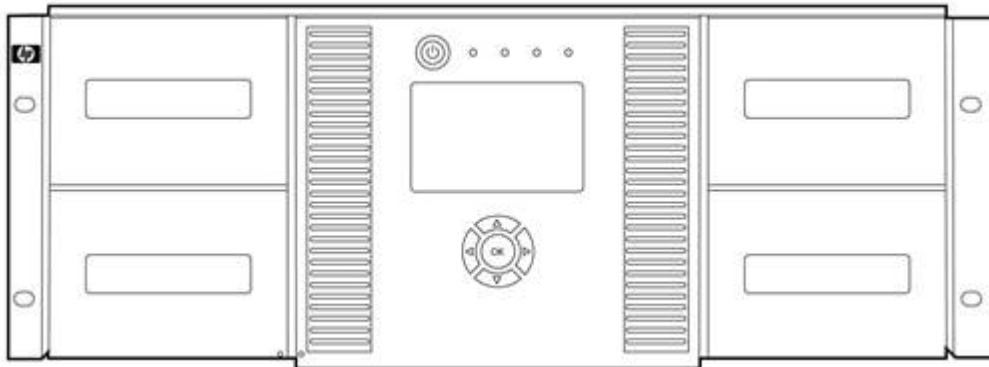
## Product Highlights

### HPE StoreEver MSL2024 and MSL4048 Tape Libraries

The HPE StoreEver MSL Tape Libraries meet demanding storage requirements of businesses needing unattended backup, disaster recovery, or archive capability. The MSL Libraries offer a broad choice of storage capacity and technology including LTO-7, LTO-6, LTO-5, or LTO-4, Ultrium tape drives. Web-based remote management makes the MSL Libraries easily managed from across the room or across the globe, eliminating the need for remote office IT staff. Quickly and simply manage the tape media both in and out of the library with the standard bar code reader, configurable mail slots, and multiple 12-slot removable magazines. If a tape were lost or stolen, protect important business data from unauthorized access with data encryption options. MSL library investment protection and uncertain data growth are easily managed within the MSL library portfolio. Quickly increase capacity and/or performance with tool-free drive upgrades in the MSL2024 or 4048, or move tape drive kits to the MSL6480 for library scalability and additional enterprise class features. Proactively receive detailed information about your MSL libraries with TapeAssure. Information about the library, drives, and media are all monitored for utilization, operational performance, and life and health information. Prevent problems before they occur by proactively receiving notification if any library, drive or tape media parameters fall below Hewlett Packard Enterprise recommended standards.



HPE StoreEver MSL2024 Tape Library



HPE StoreEver MSL4048 Tape Library

### Product Highlights

#### Key Features

- Exceptional storage density: Up to 360 TB with MSL2024, 720TB with an MSL4048, and up to 8,400TB of with an MSL6480 ((capacity based upon 2.5:1 compression using LTO-7 tape cartridges)
- Easy-to-use web-based remote management
- Integrated bar code reader
- Tool-free tape drive upgrades
- Leverage tape drives in an MSL2024 or 4048 into an MSL6480 for investment protection.
- Customer upgradeable redundant power supply in the MSL4048.
- Multiple interface choices available (FC or SAS)
- Removable magazines with user-configurable mail slots
- Easy-to-enable AES 256-bit embedded hardware encryption with compression
- Extensive OS and software compatibility testing
- Proven high reliability
- Achieve the highest level of encryption security to secure confidential business information while meeting compliance guidelines with the HPE 1/8 G2 & MSL Encryption Kit or KMIP 1.2 Encryption Key Manager License.
- Proactively monitor utilization, operational performance, and overall life and health of the drives and media with TapeAssure and TapeAssure Advanced.
- Quick, easy, and affordable capacity growth.

#### Manageability

The MSL Tape Libraries come with web-based remote manageability so they can be easily monitored and managed from across the room or across the globe. Functions included in the management tool include:

- Status information on the drive and system
- System configuration operations and reporting
- System error and status logs
- Library and drive firmware upgrade capabilities
- Diagnostic tests and information
- Cartridge movement for maintenance and management purposes
- Cleaning cartridge support
- Security and access control
- SNMP support for IP communication
- Partitioning and Encryption management
- HTTPS capable
- IPv6 and IPv4 network protocol support

### Product Highlights

#### TapeAssure

HPE TapeAssure makes managing, optimizing and archiving on the HPE StoreEver MSL Tape libraries easier. TapeAssure provides comprehensive summaries and detailed information about the status, performance, utilization, and health of all tape drives and cartridges. TapeAssure utilization and performance reporting features allow you to optimize the use of your existing HPE MSL tape libraries to make informed purchasing decisions if an increase in capacity is needed.

- Modify backup schedules to make best use of the drives and tapes available and evenly distribute their workload
- Predict and prevent failures through early warnings and recommended service actions
- Determine if each drive and each tape is experiencing a high (or low) rate of usage
- Know when to retire tapes
- Find out the compression ratios actually achieved

TapeAssure builds a database of drive and tape history information that you can export as .CSV (comma-separated-value) files and import into Excel or other tools to create pivot-charts, pie charts and bar charts for graphical presentation or further analysis. This data can be automatically exported on a schedule or on demand and written to a local or network drive where analysis scripts can also be run.

TapeAssure real time alerts notify instantly if drive and data quality standards are not being achieved:

- In-depth analysis pinpoints if drive, tape or data characteristics fall below Hewlett Packard Enterprise backup and archiving standards
- View alerts and statistics is real-time in the Command View TL GUI

#### TapeAssure Advanced

HPE StoreEver TapeAssure Advanced Software is a licensed feature that leverages the information from TapeAssure but will additionally provide an intuitive, easy to use dashboard, and advance analytics feature for performance, health and utilization related to tape libraries, drives and cartridges.

Advanced analytics feature makes use of predictive analytics to predict the likelihood of failures, bottlenecks and load balancing issues in the tape infrastructure. It has unique capabilities of analytics around drive health and life as well as cartridge health and life.

TapeAssure Advanced is well integrated into HPE Command View TL Software for a single pane of glass management, monitoring and analytics. HPE TapeAssure Advanced Software provides a dashboard display with pie charts, live and historical graphs for performance, health and utilization data, and highlights issues in the tape infrastructure.

**NOTE:** CommandView TL is a required pre-requisite for TapeAssure Advanced.

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#### Easy Installation

The MSL Tape Libraries are shipped as a rack-ready unit. The rack mount hardware included with the library allows installation in a variety of HPE racks. For more information on the HPE rack offerings, please see the following URL:  
<http://www.hpe.com/info/rackandpower.html>

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### Product Highlights

#### Partitioning

The MSL Tape Libraries now include the ability to be configured as a partitioned library. MSL Libraries may be configured with up to one partition per drive; four partitions if four drives are installed. Partitioning allows each partitioned library to be presented to the host as an independent library, separate from other partitions in the library. Hosts for each partition own independent sets of media and can use ISV software that is different from the other partitions allowing maximum flexibility and utilization of the MSL library.

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#### Proven Reliability

With a rating of 2,000,000 robot load/unload cycles, the MSL Tape Libraries provides necessary high reliability for today's demanding environment. To improve reliability and longevity, all HPE Ultrium products feature Data Rate Matching (DRM). This allows the tape drive to dynamically and continuously adjust the speed of the drive, to match the speed of the host or network. This increases performance, reduces mechanical wear on the tape drive and extends tape life.

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#### Disaster Recovery and Security

Removable media also has the advantage that data is held 'offline' which means that archive data on tape has the additional level of protection from the threats to on-line data from viruses, hackers and cyber-attacks. LTO-6 Ultrium tape drives include hardware based data encryption to prevent unauthorized access to data at rest and cartridges are available with write-once-read-many (WORM) capability to prevent accidental overwriting of data archived on the tape. Both WORM and hardware data encryption features help organizations to comply with increased data security regulations

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#### Data Encryption

The HPE MSL Tape Libraries offers multiple options for data encryption, depending on the requirements for policy, regulation, compliance, and centralized key management.

Protect the confidentiality and integrity of your data:

The HPE 1/8 G2 & MSL Encryption Kit provides a library-enabled encryption solution that greatly enhances data privacy, confidentiality, and integrity of your critical business data while supporting compliance requirements. While there are a wide range of encryption solutions available, the HPE 1/8 G2 & MSL Encryption Kit is intended to be an easy and affordable library-enabled solution for small businesses.

The encryption kit includes two USB key server tokens, product documentation, and firmware support. One encryption kit is needed per library or autoloader and it must be physically accessible so that the USB token can be inserted into the automation device. One of the two tokens will plug into the USB port in the autoloader or library and will generate and maintain encryption keys for the LTO-7, LTO-6, LTO-5 and LTO-4 drives/libraries. The USB key server token uses a hardware random number generator, password authentication, and digital envelopes for strong encryption keys and security operations. The encryption kit provides a self-contained solution for autoloaders and MSL libraries with no additional software, PCs, or servers required or involved.

Protect critical data across an enterprise:

To meet requirements for larger scale encryption key managers, the HPE MSL

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### Product Highlights

Tape Libraries supports KMIP 1.2 compliant key managers. With the purchase of the KMIP Encryption License, the 1/8 G2 Tape Autoloader and MSL libraries will be able to request encryption keys from KMIP 1.2 compliant key managers, for data encryption and key management.

For more information on all supported key management servers, please visit: <http://www.hpe.com/storage/BURACompatibility>

### Serviceability

Modular in design, the MSL Tape Libraries has easily replaceable components minimizing the Mean-Time-to-Repair on the unit. Replaceable components include the tape drive, the magazines, the power supply and the controller board. HPE Library and Tape Tools (L&TT) provides easy access to the MSL error log, generates support tickets, and enables firmware downloads. L&TT can be downloaded for free at: <http://www.hpe.com/support/tapetools>.

### LTO Ultrium Technology

HPE LTO (Linear Tape Open) Ultrium Tape Drives use best of breed technology. By taking the best features from other tape technologies and combining them into a single new technology, Ultrium tape drives are in a league of their own. Inclusion of innovative features such as Adaptive Tape Speed (ATS) ensure that Ultrium drives can meet the performance and reliability demands of a library environment. LTO technology is an open industry standard format; thus data written on HPE Ultrium Tape Drives can be interchanged directly with Ultrium Tape Drives from other vendors.

HPE LTO tape drives and automation products are founded on the LTO open standard and adhere to the published LTO format roadmap to generation 8 at 32TB of compressed capacity per cartridge by Generation 8. With in-built two generation backwards compatibility, LTO customers can be assured of investment protection.

### Data Rate Matching

Data Rate Matching combines sophisticated buffer management with variable tape drive motor speeds to match the tape drive transfer rate to the host output. . This feature ensures that the tape drive continues to stream data regardless of the environment, and brings three big advantages:

- It optimizes performance and maximizes overall efficiency, allowing the drive to respond immediately to any data speed changes from the host.
- It minimizes rewinding and repositioning of the tape, significantly reducing physical wear and increasing reliability.
- It minimizes the power requirements for the drive by reducing the number of repositions needed.

LTO Ultrium Tape Drive	ATS data transfer rate range (native)
HPE LTO-7 Ultrium 15000	101 to 300 MB/s
HPE LTO-6 Ultrium 6250	54 to 160 MB/s
HPE LTO-5 Ultrium 3280/3000	47 to 140 MB/s
HPE LTO-4 Ultrium 1840	40 to 120 MB/s
HPE LTO-4 Ultrium 1760	35 to 80 MB/s
HPE LTO-3 Ultrium 920	26 to 60 MB/s

### Product Highlights

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HPE Ultrium WORM Critical to the success of data retention policies in highly regulated environments is the ability to store and manage data in an unalterable state. Following stringent guidelines set forth by regulatory agencies such as the SEC and HIPPA, IT organizations must now integrate new solutions and policies that can verify the integrity of stored data for periods that can extend well beyond seven years. Every generation of LTO Ultrium since LTO-3 tape drives feature the ability to archive and store data in a read-only, non-rewriteable format that meets the most stringent regulatory guidelines. Using a combination of integrated fail-safe features in the drive firmware, cartridge memory, and tape formatting, LTO Ultrium provides the ability to archive large amounts of data for periods of up to 30 years in a secure, untampered state. Ultrium tape drives include support for both rewritable and WORM media providing for a secure, long-term archiving solution into any data protection strategy. LTO Ultrium WORM provides the following advantages:

- A single drive to support all backup and archiving needs
- Two distinctive tape cartridges to easily distinguish and manage both rewriteable and WORM data cartridges
- A specially designed WORM data cartridge with multiple integrated fail-safe features to prevent accidental or intentional overwriting of data
- High-capacity, low-cost HPE WORM media that can store up to 6.25 TB (2.5:1 compression) of data on a single data cartridge
- Support from many backup and archiving software vendors, providing the most comprehensive and mainstream support in the industry
- The LTO open standard that offers greater choice and compatibility across all third- and fourth-generation Ultrium products

**NOTE:** While all HPE LTO-7, LTO-6, LTO-5, LTO-4, and LTO-3 Ultrium tape drives support LTO Ultrium WORM media, some LTO Ultrium tape drives from other manufacturers may not include read and write support for LTO Ultrium WORM media. For non-HPE LTO Ultrium tape drives, please check the manufacturers' specifications to ensure this support is provided if you are using your WORM media. If WORM support is not provided, the drive will eject the WORM tape cartridge immediately upon insertion into to the tape drive

### Product Highlights

#### HPE Data Protector software

HPE 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. The license model is very simple and easy to understand, helping to reduce complexity. Extensive scalability and features for continuous backup and recovery operations enable growth with a single product. A superb solution, no other software can integrate better with the Hewlett Packard Enterprise market-leading line of disk and tape family of products, as well as with other heterogeneous storage infrastructures. As an integral component of the fast-growing Hewlett Packard Enterprise software portfolio, which includes storage resource management, archiving, replication, and device management software, Data Protector software also fully integrates with the HPE management solutions, allowing managing data protection as an essential element of an overall IT service. This solution offers the unique advantage of being able to source hardware, software, and award winning service offerings from a single, trusted source.

Data Protector software simplifies the use of complex backup and recovery procedures with the fastest installation, automated routine tasks, and easy-to-use features. The centralized multi-site management easily allows implementing multi-site changes, adapting in real time to changing business requirements. Appropriate for medium and large companies in any industry, Data Protector software is the ideal solution to reduce IT costs and complexity while remaining reliable and scalable to grow from single server environments to the largest distributed enterprise infrastructures.

For further information, please visit our web page at:  
<http://www.hpe.com/storage/dataprotector>

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#### HPE StoreOpen Automation

HPE StoreOpen Automation is a free downloadable application that extends the LTFS capability to HPE Autoloaders, HPE MSL and ESL Tape Libraries. By simply mounting the tape autoloader or library as a file system, the intuitive HPE StoreOpen Automation interface makes it easier to copy, rename, create or move files. When a cartridge folder is selected for use, that tape is automatically moved to an available tape drive.

When two drives are present, HPE StoreOpen Automation supports tape-to-tape operations. HPE StoreOpen Automation takes advantage of other standard HPE Tape Library features including data encryption and HPE TapeAssure.

For more information, including user guide, downloads and compatibility, visit:  
<http://www.hpe.com/storage/HPStoreOpen>

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### Product Highlights

#### HPE Library and Tape Tools

The MSL Tape Libraries are supported on HP's industry-leading diagnostic tool - HPE Library and Tape Tools (L&TT). L&TT is a single, convenient program that is easy to install and simple to operate. L&TT's intuitive user interface eliminates the need for training and deploys in less than five minutes. This robust diagnostic tool is designed for both the experienced professional and the untrained administrator. It ensures product integrity through self-diagnostics and fast resolution to device concerns. Additional information on L&TT plus download information can be found at: <http://www.hpe.com/support/tapetools>.

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#### HPE Storage Media

Hewlett Packard Enterprise recommends that you use HP-branded cartridges in the MSL Tape Libraries to assure the highest level of protection for your valuable data. The test program for Hewlett Packard Enterprise media is the most thorough and comprehensive in the industry.

All HPE cartridges must satisfy an exhaustive battery of additional tests that relate directly to real life situations, where real data and real businesses are at stake. The benefit of the Hewlett Packard Enterprise brand specification for media is consistent quality. Through the testing of thousands of HPE drives and HPE cartridges, the ideal formulation for backup performance is defined and then continuously monitored. This hugely resource-intensive process is unique to Hewlett Packard Enterprise and affords deep insight into the HP+HPE backup solution for a wide range of environments and duty cycles. Your best choice for ease of support and maximum dependability is to use HP-branded Ultrium cartridges at all times. Correctly labeling your media will allow the library to quickly determine media and drive compatibility.

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#### Factory Express Portfolio for Servers and Storage

HPE Factory Express offers configuration, customization, integration and deployment services for HPE 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. Hewlett Packard Enterprise products supported through Factory Express include a wide array of servers and storage: HPE Integrity, HPE ProLiant, HPE ProLiant Server Blades, HPE BladeSystem, and HPE 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.hpe.com/info/factoryexpress>.

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#### Compatibility

HP's extensive compatibility testing program assures that your HPE MSL Tape Libraries work with leading servers, operating systems, and backup applications - and not just those sold by HP. The MSL libraries work seamlessly in many environments, making them especially suitable if you have a mixed system environment. For the latest list of servers, workstations, operating systems, and backup software that support the MSL tape libraries, check the HPE Data Agile BURA Compatibility Matrix (Formerly EBS) at: <http://www.hpe.com/storage/BURACompatibility>.

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Product Highlights

### Service and Support and Warranty Information

#### Warranty

MSL2024: The warranty for this product consists of 1-year parts exchange, next business day

MSL4048: The warranty for this product consists of 1-year parts exchange, next business day

**NOTE:** The HPE MSL Tape Libraries warranty includes support for Customer Self Repair (CSR). The tape library cartridges, terminators, external cables, drives, magazines, controller board and power supplies are mandatory customer self-repair parts. This means both the removal and replacement of the above parts are designed for easy replacement; the on-site warranty does not extend to these parts. However, customers may request HPE Services to replace these replaceable units (RUs) for an additional charge. Also, customers who purchase an HPE Support Agreement have the option to perform CSR or receive onsite support.

Please refer to Hewlett Packard Enterprise's Limited Warranty Statement for further details:

<http://h18006.www1.hp.com/storage/warranty.html>

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#### Protect your business beyond warranty with HPE Support Services

HPE Technology Services delivers confidence, reduces risk and helps customers realize agility and stability. Our integrated portfolio of Services for storage help customers reduce costs, optimize data, streamline storage management, and improve backup and recovery. HPE Support Services enable you to choose the right service level, length of coverage and response time as you purchase your new storage solution, giving you full entitlement for the support for need for your IT and business.

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#### Recommended Services

HPE Foundation Care 24x7, three-year Support Service

HPE Foundation Care 24x7 gives you access to HPE 24 hours a day, seven days a week for assistance on resolving issues. This service includes need based Hardware onsite response within four hours. Simplify your support experience and make HPE your first call to help resolve hardware or software problems.

<https://www.hp.com/h20195/V2/GetDocument.aspx?docname=4AA4-8876ENW&cc=us&lc=en>

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### Service and Support and Warranty Information

#### Related Services

HPE ESL, MSL Tape Libraries Installation and Startup  
Deployment of your HPE Midrange Storage Library (MSL) products in SAN environments:

- System installation and setup by an Hewlett Packard Enterprise technical specialist
- Verification prior to installation that all service prerequisites are met
- Delivery of the service at a mutually scheduled convenient time
- Provides product installation according to the product specifications
- Offers deployment activities that are designed to bring the Fibre Channel-based tape library into operation
- Helps improve performance
- Makes the most of the value of the HPE ESL, MSL, and EML libraries in an IT environment by leveraging Hewlett Packard Enterprise knowledge in implementing Fibre Channel-based systems and solutions
- Helps reduce implementation-related disruptions in the IT environment
- Helps increase system reliability and provides more effective data management

<http://h20195.www2.hp.com/v2/GetPDF.aspx/5981-7355EN.pdf>

#### HPE Backup and Recovery Solution Service

Rapid recovery from system downtime can hinge on the efficiency of your backup and recovery management environment - and on how well that environment is integrated with your storage infrastructure. But integration processes can be time-consuming and complex, and your IT resources are already stretched thin. Where can you find the expert help you need?

For fast, effective integration of your backup solution into an existing or new storage infrastructure, turn to the storage experts at HPE Services. Our Backup and Recovery Solution Service (BRSS) provides end-to-end management of your backup integration process. The BRSS team works with you to analyze your business and IT environment; develop a comprehensive integration plan and timetable; design an architecture that suits your critical requirements; install backup software; implement your solution; and validate your configuration.

- By engaging Hewlett Packard Enterprise to implement HPE Data Protector, customers' IT staff can stay focused on their core tasks and priorities, resulting in less impact to your business
- Professional backup and recovery planning that aligns with customer's business needs and implementation that reduces project execution time and risk to the storage environment
- HP's expertise with backup and recovery helps ensure issues are avoided

<http://h20195.www2.hp.com/V2/GetPDF.aspx/5982-7442EN.pdf>

### Service and Support and Warranty Information

#### eSupport

HPE eSupport is a portfolio of technology-based services that assist you with managing your business environment - from the desktop to the data center.

#### Support Portal

The Hewlett Packard Enterprise support portal provides one-stop access to the information, tools and services you need to manage the daily operations of your IT environment.

Features include:

- Access to self-solve tools (including search technical knowledge base)
- Efficient logging and tracking of support cases
- Collaboration with other business and IT professionals
- Download of patches and drivers
- Access to diagnostic tools
- Proactive notification of relevant information

Access to certain features of the support portal requires a Hewlett Packard Enterprise service agreement. To access the support portal, visit: <http://www.hpe.com/support>

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#### Customer Technical Training

Consider education as an integral part of your strategy to get the best return on investment for your HPE storage solution. Hewlett Packard Enterprise 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 on-site training customized to your needs or online. <http://www.hpe.com/learn/storage>

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#### HPE Services Awards

HPE Services continues to be recognized for service and support excellence by customers, partners, industry organizations and publications around the world. Recent honors and award reflect our services team's dedications, technical expertise, professionalism and uncompromising commitment to customer satisfaction. For a list of all our awards, please visit: <http://h20219.www2.hpe.com/services/cache/433028-0-0-225-121.htm>

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#### Additional Services Information

For more information about HPE Care Pack Services for Storage, please visit: <http://www.hpe.com/services/storage>

If you have specific questions, contact your local Hewlett Packard Enterprise representative. Contact information for a representative in your area can be found at "Contact HPE" <http://www.hpe.com>

### Configuration Information

#### Step 1 - Select Base Library

HPE StoreEver MSL Tape Libraries	Description	Part Number
	HPE StoreEver MSL2024 0-drive Tape Library <b>NOTE:</b> Includes 24 slots, zero drives. <b>NOTE:</b> This product is TAA (Trade Agreements Act) compliant.	AK379A
	HPE StoreEver MSL4048 0-drive Tape Library <b>NOTE:</b> Includes 48 slots, zero drives. <b>NOTE:</b> This product is TAA (Trade Agreements Act) compliant.	AK381A
	Kit Contents (for each library): <ul style="list-style-type: none"> <li>● One 2.5M PDU Power Cord, C13/C14, 10A (part number 142257-002)</li> <li>● One RJ-45 Ethernet cable</li> <li>● Rack-mount hardware</li> <li>● Flyer for Yosemite Server Backup software*                *<b>NOTE:</b> Yosemite Server Backup Basic comes with 30 days of free Maintenance and Support. After that time, customers have the option to upgrade to a retail version with Maintenance and Support</li> </ul>	
Factory Racking	Factory integrate the MSL2024 & 4048 Tape Libraries with other HPE products such as HPE ProLiant Servers <b>NOTE:</b> #0D1 will appear after the Tape Library part number on the sales order if HPE factory integration is indicated	#0D1

#### Step 2 - Select Generation & Quantity of Ultrium Tape Drives

Select each option as required with quantities specified:

Tape Drives	HPE StoreEver MSL LTO-7 Ultrium 15000 FC Drive Upgrade Kit <b>NOTE:</b> Half height LTO-7 Fibre Chanel tape drive. For use with the MSL2024, 4048 or MSL6480 libraries. Drive kit includes a tape drive and documentation <b>NOTE:</b> #0D1 will appear after N7P36A on the sales order if HPE factory integration is indicated <b>NOTE:</b> This product is TAA (Trade Agreements Act) compliant.	N7P36A
	HPE StoreEver MSL LTO-7 Ultrium 15000 SAS Drive Upgrade Kit <b>NOTE:</b> Half height LTO-7 SAS tape drive. For use with the MSL2024, 4048 or MSL6480 libraries. Drive kit includes a tape drive and documentation <b>NOTE:</b> #0D1 will appear after N7P37A on the sales order if HPE factory integration is indicated <b>NOTE:</b> This product is TAA (Trade Agreements Act) compliant.	N7P37A
	HPE StoreEver MSL LTO-6 Ultrium 6250 SAS Drive Upgrade Kit <b>NOTE:</b> Half height LTO-6 SAS tape drive. For use with the MSL2024, 4048 or MSL6480 libraries. Drive kit includes a tape drive and documentation. <b>NOTE:</b> #0D1 will appear after C0H27A on the sales order if HPE factory integration is indicated <b>NOTE:</b> This product is TAA (Trade Agreements Act) compliant.	C0H27A

## Configuration Information

<p>HPE StoreEver MSL LTO-6 Ultrium 6250 Fibre Channel Drive Upgrade Kit</p> <p><b>NOTE:</b> Half height LTO-6 FC tape drive. For use with the MSL2024, 4048 or MSL6480 libraries. Drive kit includes a tape drive and documentation.</p> <p><b>NOTE:</b> #0D1 will appear after C0H28A on the sales order if HPE factory integration is indicated</p> <p><b>NOTE:</b> This product is TAA (Trade Agreements Act) compliant.</p>	C0H28A
<p>HPE StoreEver MSL LTO-5 Ultrium 3000 SAS Drive Upgrade Kit</p> <p><b>NOTE:</b> Half height LTO-5 SAS tape drive. For use with the MSL2024, 4048 or MSL6480 libraries. Drive kit includes a tape drive and documentation.</p> <p><b>NOTE:</b> #0D1 will appear after BL540B on the sales order if HPE factory integration is indicated</p> <p><b>NOTE:</b> This product is TAA (Trade Agreements Act) compliant.</p>	BL540B
<p>HPE StoreEver MSL LTO-5 Ultrium 3000 Fibre Channel Drive Upgrade Kit</p> <p><b>NOTE:</b> Half height LTO-5 FC tape drive. For use with the MSL2024, 4048 or MSL6480 libraries. Drive kit includes a tape drive and documentation.</p> <p><b>NOTE:</b> #0D1 will appear after BL544B on the sales order if HPE factory integration is indicated</p> <p><b>NOTE:</b> This product is TAA (Trade Agreements Act) compliant.</p>	BL544B
<p>HPE StoreEver MSL LTO-5 Ultrium 3280 Fibre Channel Drive Upgrade Kit</p> <p><b>NOTE:</b> Full height LTO-5 FC tape drive. For use with the MSL2024, 4048 or MSL6480 libraries. Drive kit includes a tape drive and documentation.</p> <p><b>NOTE:</b> #0D1 will appear after BL535B on the sales order if HPE factory integration is indicated</p> <p><b>NOTE:</b> This product is TAA (Trade Agreements Act) compliant.</p>	BL535B
<p>HPE StoreEver MSL LTO-4 Ultrium 1760 SAS Drive Upgrade Kit</p> <p><b>NOTE:</b> Half height LTO-4 SAS tape drive. For use with the MSL2024, 4048, , or 6480 libraries. Drive kit includes a tape drive and documentation.</p> <p><b>NOTE:</b> This product is TAA (Trade Agreements Act) compliant.</p>	AK383B

## Step 3 - Select Software Licenses

<p>TapeAssure Advanced</p>	<p>HPE StoreEver MSL TapeAssure Advanced LTU</p> <p>Advanced analytics feature makes use of predictive analytics to predict the likelihood of failures, bottlenecks and load balancing issues in the tape infrastructure. It has unique capabilities of analytics around drive health and life as well as cartridge health and life.</p> <p><b>NOTE:</b> One license needed per library and Command View TL must be installed.</p> <p><b>NOTE:</b> This is a paper license that will be mailed</p>	TC406A
	<p>HPE StoreEver MSL TapeAssure Advanced E-LTU</p> <p>HPE StoreEver TapeAssure Advanced Software provides advanced analytics for predictive analysis the likelihood of failures, bottlenecks and load balancing issues in the tape infrastructure. It has unique</p>	TC406AAE

### Configuration Information

capabilities of analytics around drive health and life as well as cartridge health and life.

**NOTE:** One license needed per library and Command View TL must be installed.

**NOTE:** This is an electronically delivered License.

#### Encryption Options/Licenses

HPE 1/8 G2 Tape Autoloader and MSL Tape Library Encryption Kit AM495A

**NOTE:** For use with new or installed LTO-7, LTO-6, LTO-5 and LTO-4 drives for MSL2024/4048/8048/8096 or MSL6480 Tape Libraries. The Encryption Kit key server token generate and retain encryption keys for above LTO Tape drives in the library. Does not require support from ISV.

HPE StoreEver MSL2024/4048/8096 KMIP Encryption LTU TC468A

**NOTE:** For use with MSL2024/4048/8048/8096 Tape libraries using LTO-6, LTO-5 tape drives. The license will enable secure connectivity with supported KMIP 1.2 compliant key management servers. See the HPE Data Agile BURA Compatibility Matrix (Formerly EBS) for the list of supported servers.

<http://www.hpe.com/storage/BURACompatibility>

**NOTE:** This license will be delivered via hard copy in the mail.

**NOTE:** MSL libraries now have the ability to connect to KMIP compliant Encryption Key managers in FIPS 140-2 secure mode with HH FC LTO-7 tape drives, which are FIPS 140-2 certified.

HPE StoreEver MSL2024/4048/8096 KMIP Encryption E-LTU TC468AAE

**NOTE:** For use with MSL2024/4048/8048/8096 Tape libraries using LTO-6, LTO-5 tape drives. The license will enable secure connectivity with supported KMIP 1.2 compliant key management servers. See the HPE Data Agile BURA Compatibility Matrix (Formerly EBS) for the list of supported servers.

<http://www.hpe.com/storage/BURACompatibility>

**NOTE:** This license will be delivered electronically.

**NOTE:** MSL libraries now have the ability to connect to KMIP compliant Encryption Key managers in FIPS 140-2 secure mode with HH FC LTO-7 tape drives, which are FIPS 140-2 certified.

### Step 4 - Select Additional Accessories

**Regional Power Cords** **NOTE:** One PDU power cord is shipped per library. IF not using the included PDU cord mentioned above (part number 142257-002) please select the correct power cord for your geographical location below.

Quantity	Description	Part Number
1 each	HP C13 - Nema 5-15P US/CA 110V 10Amp 1.83m Power Cord	AF556A
1 each	HP C13 - CEE-VII EU 250V 10Amp 1.83m Power Cord	AF568A
1 each	HP C13 - BS-1363A UK/HK/SG 250V 10Amp 1.83m Power Cord	AF570A
1 each	HP C13 - DK-2.5A DK 250V 10Amp 1.83m Power Cord	AF566A
1 each	HP C13 - SEV 1011 CH 250V 10Amp 1.83m Power Cord	AF565A
1 each	HP C13 - CEI-23-50 IT/CL 250V 10Amp 1.83m Power Cord	AF571A
1 each	HP C13 - SABS-164 ZA 250V 10Amp 2.5m Power Cord	AF567A

### Configuration Information

1 each	HP C13 - CNS-690 TW 110V 13Amp 1.83m Power Cord	AF561A
1 each	HP C13 - GB-1002 CN 250V 10Amp 1.83m Power Cord	AF557A
1 each	HP C13 - JIS C8303 JP 100V 12Amp 2.0m Power Cord	AF572A
1 each	HP C13 - AS3112-3 AU 250V 10Amp 2.5m Power Cord	AF569A
1 each	HP C13 - IRAM -2073 AR 250V 10A 2.5m Power Cord	AF558A
1 each	HP C13 - Nema 5-15P TH/PH 250V 10Amp 1.83m Power Cord	AF559A
1 each	HP C13 - KSC- 8305 KR 250V 10Amp 1.83m Power Cord	AF560A
1 each	HP C13 - SI-32 IL 250V 10Amp 1.83m Power Cord	AF564A
1 each	HP C13 - IS-1293 IN 240V 6Amp LV 2.0m Power Cord	AF562A

**WARNING:** This product can ONLY be used with an HPE approved power cord for your specific geographic region. Use of a non-HPE approved power cord may result in: 1) not meeting individual country specific safety requirements; 2) insufficient conductor ampacity that could result in overheating with potential personal injury and/or property damage; and 3) an unapproved power cord could fracture resulting in the internal contacts being exposed, which potentially could subject the user to a shock hazard. Hewlett Packard Enterprise disclaims all liability in the event a non-HPE approved power cord is used. For a complete list of power cord options, please see: <http://www.hpe.com/products/powercords>



## Related Options

Redundant Power Supply Upgrade Kit	<p>HPE StoreEver MSL Redundant Power Supply Upgrade Kit</p> <p><b>NOTE:</b> For use in the MSL4048, 8048 or 8096 Tape Libraries to add a second customer-installable power supply into the unit. HPE MSL Redundant Power Supply ships with PDU power cord (C13/C14, 10A, P/N 142257-002). If a user wishes to connect to HPE MSL Redundant Power Supply to 110V US wall outlet power then the US Power Cord (P/N AF556A) must be ordered separately. If customers require a power cord, they can check the power cord matrix for the appropriate cord. Please see the UPS and PDU cable matrix's on the Power Protection page under Power Cords that lists cable descriptions, requirements, and specifications for UPS and PDU units at the new HPE Power Cord Link @ HPE.com. Use the following new link: <a href="http://www.hpe.com/products/powercords">http://www.hpe.com/products/powercords</a></p>	AH220A
<hr/>		
Magazine Kits	<p>HPE StoreEver MSL2024 Ultrium Left Magazine Kit</p> <p><b>NOTE:</b> For use in the MSL 2024 Tape Libraries in the left position. User-enabled mail slots can be configured at either 0 or 1 slot.</p> <p>HPE StoreEver MSL Ultrium Left Magazine Kit</p> <p><b>NOTE:</b> For use in the MSL 4048, 8048, or 8096 tape Libraries in either the upper or lower left position. When used in the lower left position, user-enabled mail slots can be configured at either 0 or 3 slots.</p> <p>HPE StoreEver MSL Ultrium Right Magazine Kit</p> <p><b>NOTE:</b> For use only on the right side of the MSL 4048, 8048, or 8096 Tape Libraries; additional 12-slot magazine for either the right upper or lower position.</p> <p><b>NOTE:</b> For use on the right side of the MSL 2024 Tape Libraries; additional 12-slot magazine for the right position.</p>	<p>AG119A</p> <p>AG330A</p> <p>AG120A</p>
<hr/>		
Rack Cabinets	<p>The MSL libraries are supported in a variety of HPE Rack offerings, including the HPE Intelligent Series Racks and the HPE 10000 G2 Series Racks. For more information on the HPE rack offerings, please see the following URL: <a href="http://www.hpe.com/info/rackandpower">http://www.hpe.com/info/rackandpower</a></p> <p><b>NOTE:</b> The MSL Tape Libraries are certified to ship in HPE racks which include a shock pallet. It is mandatory to use a shock pallet in order to ship racks with equipment installed.</p>	
<hr/>		
Media	<p>HPE LTO-7 Ultrium 15TB RW Data Cartridge</p> <p>HPE LTO-7 Ultrium No Case 960 Tape Pallet</p> <p>HPE LTO-7 Ultrium RW 960 Tape Pallet</p> <p>HPE LTO-7 Ultrium 15TB Eco Case Data Cartridge 20 Pack</p> <p>HPE LTO-7 Ultrium WORM Data Cartridge</p> <p>HP LTO-6 Ultrium 6.25TB MP RW Data Cartridge</p> <p>HP LTO-6 Ultrium 6.25TB MP RW 960 Tape Pallet</p>	<p>C7977A</p> <p>C7977AB</p> <p>C7977AD</p> <p>C7977AH</p> <p>C7977W</p> <p>C7976A</p> <p>C7976AD</p>

### Related Options

HP LTO-6 Ultrium 6.25TB MP WORM Data Cartridge	C7976W
HP LTO-6 Ultrium 6.25TB BaFe RW Data Cartridge	C7976B
HP LTO-6 Ultrium 6.25TB BaFe WORM Data Cartridge	C7976BW
HP LTO-5 Ultrium 3TB RW Data Cartridge	C7975A
HP LTO-5 Ultrium 3TB WORM Data Cartridge	C7975W
HP LTO4 Ultrium 1.6TB Read/Write Data Cartridge	C7974A
HP LTO4 Ultrium 1.6TB WORM Data Tape Cartridge	C7974W
HP Ultrium Universal Cleaning Cartridge	C7978A
Bar Code Labels	
HPE LTO-7 Ultrium RW Bar Code Label Pack	Q2014A
HP LTO-6 Ultrium RW Bar Code Label Pack	Q2013A
HP LTO-5 Ultrium RW Bar Code Label Pack	Q2011A
HP LTO-5 Ultrium WORM Bar Code Label Pack	Q2012A
HP LTO-4 Ultrium Read/Write Bar Code Label Pack	Q2009A
HP LTO-4 Ultrium WORM Bar Code Label Pack	Q2010A
Non-Custom Labeled Data Cartridges	
<b>NOTE: Non-Custom labels will come pre-labeled with a pre-determined number sequence.</b>	
HPE LTO-7 Ultrium RW No Case Custom Labeled Data Cartridge 20 Pack	C7977AC
HPE LTO-7 Ultrium Non Custom Labeled Data Cartridge 20 Pack	C7977AN
HP LTO-6 Ultrium 6.25TB MP RW Non Custom Labeled Data Cartridge 20 Pack	C7976AN
HP LTO-6 Ultrium 6.25TB BaFe RW Non Custom Labeled Data Cartridges 20 Pack	C7976BN
HP LTO-5 Ultrium Non-custom Labeled Data Cartridge 20 Pack	C7975AN
HP LTO-4 Ultrium 1.6TB Non-custom Label Data Cartridge 20 Pack	C7974AN
Custom labeled Data Cartridges	
<b>NOTE: Custom labeled products allow customers to customize a specific sequence printed on each label.</b>	
HPE LTO-7 Ultrium 15 TB RW RFID Custom Labeled Data Cartridge (20 pack)	7977AF
HPE LTO-7 Ultrium RW Custom Labeled Data Cartridge 20 Pack	C7977AL
HPE LTO-7 Ultrium WORM Custom Labeled Data Cartridge 20 Pack	C7977WL
HP LTO-6 Ultrium 6.25TB MP RW Custom Labeled Data Cartridge 20 Pack	C7976AL
HP LTO-5 RW Custom Labeled Data Cartridge 20 Pack	C7975AL
HP LTO-5 RW Custom Labeled No Case Data Cartridge 20 Pack	C7975AC
HP LTO-5 WORM Custom Labeled Cartridge 20 Pack	C7975WL
HP LTO-4 Ultrium 1.6TB RW Custom Label Data Cartridge 20 Pack	C7974AL
HP LTO-4 Ultrium 1.6TB WORM Custom Label Data Cartridge 20 Pack	C7974WL

### Related Options

#### FC and SAS Host Bus Adapters

The MSL Libraries are certified with multiple Fibre Channel and SAS Host Bus and Adapters. For the most current list of supported FC and SAS HBAs, please see the HPE Storage HPE Data Agile BURA Compatibility Matrix (Formerly EBS) and Design Guide located at: <http://www.hpe.com/storage/BURACompatibility>.

#### Optical cables

OM4 LC-LC type cables	
HP Premier Flex LC/LC Multi-mode OM4 2 fiber 1m Cable	QK732A
HP Premier Flex LC/LC Multi-mode OM4 2 fiber 2m Cable	QK733A
HP Premier Flex LC/LC Multi-mode OM4 2 fiber 5m Cable	QK734A
HP Premier Flex LC/LC Multi-mode OM4 2 fiber 15m Cable	QK735A
HP Premier Flex LC/LC Multi-mode OM4 2 fiber 30m Cable	QK736A
HP Premier Flex LC/LC Multi-mode OM4 2 fiber 50m Cable	QK737A

Allowed cable lengths:

External Cable type	Drive type	2Gb	4Gb	8Gb
OM2	All drive types	0.5m - 300m	0.5m - 150m	NA
OM3/OM4	All except LTO-5 Ultrium 3000	0.5m - 500m	0.5m - 380m	0.5m - 150m
OM3/OM4	LTO-5 Ultrium 3000	0.5m - 300m	0.5m - 150m	0.5m - 50m

**NOTE:** The HPE MSL LTO-5 Ultrium 3000 Drive contains an internal OM2 optical cable and limits the maximum allowed cable lengths to those as specified for OM2. The lowest OM rating in a path from the drive to the switch or HBA will dictate the maximum length of the connection path.

#### Cable Kits (SAS)

HPE StoreEver Mini-SAS High Density to 4-lane Mini-SAS External Fanout 2m Cable	K2R09A
HPE StoreEver Mini-SAS High Density to 4-lane Mini-SAS External Fanout 2m Cable	K2R09A
HP 2.0m External Mini SAS High Density to Mini SAS Cable	716191-B21
HP 4.0m External Mini SAS High Density to Mini SAS Cable	716193-B21

**NOTE:** One cable is required for every tape drive. Use this cable to connect HPE MSL SAS Tape Libraries to the HPE H241 Smart Host Bus Adapter.

HP SAS Min-Min 1x-2M Cable Assembly Kit	AE470A
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**NOTE:** One SAS autoloader only. Use this cable to connect HPE SAS external tape devices to HPE SAS controllers with external Mini-SAS (SFF8088) connectors.

### Related Options

HP SAS MIN-MIN 1X-4M Cable Assembly Kit	AE465A
<b>NOTE:</b> One SAS autoloader only. Use this cable to connect HPE SAS external tape devices to HPE SAS controllers with external Mini-SAS (SFF8088) connectors.	
HPE StoreEver 2m External Mini-SAS to 4x1 Mini-SAS Cable	AN975A
<b>NOTE:</b> One cable is required for every four autoloaders or every four library drives. Use this cable to connect HPE MSL SAS Tape Libraries to Mini-SAS (SFF8088) ports.	
HPE StoreEver 4m External Mini-SAS to 4x1 Mini-SAS Cable	AN976A
<b>NOTE:</b> One cable is required for every four autoloaders or every four library drives. Use this cable to connect HPE MSL SAS Tape Libraries to Mini-SAS (SFF8088) ports.	
HPE StoreEver External SAS to Mini-SAS Fanout Cable	AH587A
<b>NOTE:</b> One cable is required for every four drives. Use this cable to connect HPE MSL SAS Tape Libraries to HPE SAS controllers with Infiniband (SFF8470) connectors.	

### HPE Care Pack Options

Same Day Response	
HP 3 year 4 hour 24x7 MSL 2024 Hardware Support	UE296E
HP 3 year 4 hour 9x5 MSL 2024 Hardware Support	UG635E
HP 3 year 4 hour 24x7 MSL4048 Library Hardware Support	UD835E
HP 3 year 4 hour 9x5 MSL 4048 Library Hardware Support	UE940E
Next Business Day Response	
HP 3 year Next business day MSL 2024 Hardware Support	UE294E
HP 3 year Next business day MSL4048 Library Hardware Support	UD833E
<b>NOTE:</b> In order to maximize ROI and product uptime, and minimize the cost of ownership, Hewlett-Packard Enterprise 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.	

## Technical Specifications

		MSL2024	MSL4048
Drive Technology		LTO-7 Ultrium 15000 LTO-6 Ultrium 6250 LTO-5 Ultrium 3280 LTO-5 Ultrium 3000 LTO-4 Ultrium 1840 LTO-4 Ultrium 1760	LTO-7 Ultrium 15000 LTO-6 Ultrium 6250 LTO-5 Ultrium 3280 LTO-5 Ultrium 3000 LTO-4 Ultrium 1840 LTO-4 Ultrium 1760
Maximum Number of Drives		1 (Ultrium 3280, 1840) or up to 2 (Ultrium 15000, 6250, 3000, 1760)	2 (Ultrium 3280, 1840) or up to 4 (Ultrium 15000, 6250, 3000, 1760)
Number of Slots		24	48
Drive Interface		8 Gb Native Fibre Channel 4 Gb Native Fibre Channel 6 Gb/sec SAS 3 Gb/sec SAS	8 Gb Native Fibre Channel 4 Gb Native Fibre Channel 6 Gb/sec SAS 3 Gb/sec SAS
Maximum Capacity	Native	60 TB (LTO-6) 36 TB (LTO-5) 19.2 TB (LTO-4)	120 TB (LTO-6) 72 TB (LTO-5) 38.4 TB (LTO-4)
	Compressed (2.5:1)	150 TB (LTO-6)	300 TB (LTO-6)
	Compressed (2:1)	72 TB (LTO-5) 38.4 TB (LTO-4)	144 TB (LTO-5) 76.8 TB (LTO-4)
Maximum Transfer Rate	Native	2.16 TB/hr (two 15000) 1.15 TB/hr (two 6250) 504 GB/hr (one 3280) 1.0 TB/hr (two 3000) 432 GB/hr (one 1840) 576 GB/hr (two 1760)	4.32 TB/hr (four 15000) 2.3 TB/hr (four 6250) 1.0TB/hr (two 3280) 2.0 TB/hr (four 3000) 864 GB/hr (two 1840) 1.1 TB /hr (four 1760)

\*For more information about the MSL6480 please visit <http://www.hpe.com/storage/msl6480>

		MSL2024	MSL4048
Dimensions	Out-of-Box (HxWxD)	3.4 x 18.9 x 31.7 in (8.7 x 48 x 80.6 cm)	6.9 x 18.9 x 31.7 in (17.5 x 48 x 80.6 cm)
	Shipping (HxWxD)	10.7 x 23.2 x 38.9 in (27.1 x 58.9 x 98.7 cm)	13.7 x 23.2 x 38.9 in (34.8 x 58.9 x 98.7 cm)
Weight	Out of box	32.9 lb (14.9 kg)	47.2 lbs (21.4 kg)
	Shipping	56.9 lb (25.8 kg)	74.7 lbs (33.9 kg)

**NOTE:** The weight of each library varies somewhat based on the type and number of LTO tape drives contained in the configuration. The weights shown here are for MSL2024/4048 configurations with 1/2 drives respectively per model. Configurations with different numbers of tape drives can be calculated by adding or subtracting the weight of a tape drive. An LTO-6 Ultrium 6250 drive weighs 2.10 kg/4.63 lbs.

Reliability	MSBF (mean swaps between failures)	2 Million robot load/unload cycles
	MTBF (mean time between failures)	100,000 hours (based on 1M MSBF)

### Technical Specifications

Average Cartridge Swap Time (drive to slot, slot to drive)	45 seconds	45 seconds
Initialization Time	80 to 120 seconds	
Inventory Time	1:20 minutes (using bar code labeled cartridges)	2:15 minutes (using bar code labeled cartridges)
Connectors	Mini-SAS (MSL SAS model only)- 68-pin HDTs ( MSL SCSI models only) LC Optical Fibre (MSL FC models only) (1)RJ-45 Ethernet (1) USB port	
LED Indicators (on front panel)	Ready LED (Green): shows ready status information Clean LED (Amber): shows fault status information Attention LED (Amber): shows fault status information Error LED (Amber): shows fault status information	
Management Interface	10/100 Mbits/second, auto-configuring interface. RJ-45 connection. Https configurable.	
Power	MSL2024: 168 Watts (max) MSL4048: : 312 Watts (max)	
Input Requirements	100 to 240 VAC, 50 to 60 Hz, 2.5 Amperes	
Relative Humidity (non-condensing)	Operating	20% to 80%
	Shipping	20% to 90%
Temperature Range (wet bulb)	Operating	50° to 95° F (10° to 35° C)
	Shipping	-22° to 140° F (-30° to 60° C)
	<b>NOTE:</b> Library operating temperature limits are based on the industry standard tape limit.	
Altitude	Operating	13,000 ft (4000 m)
	Shipping	35,000 ft (10,675 m)

### Summary of Changes

Date	Version History	Action	Description of Change
15-Aug-2016	From Version 49 to 50	Changed	Changes made to the Configuration Info Section
29-Jul-2016	From Version 48 to 49	Changed	Changes made to the Related Options and Configuration Information Sections
31-Mar-2016	From Version 47 to 48	Changed	Updated HPE rebranding, part no corrections and FIPS 140-2 support information for Fusilli launch.
15-Jan-2016	From version 46 to 47	Changed	Updated Links to HPE.com and content edits
01-Dec-2015	From Version 45 to 46	Changed	Changes made throughout the QuickSpecs.
3-Apr-2015	From Version 44 to 45	Changed	Deleted portions related to MSL library Extenders as they are no longer valid.
30-Jan-2015	From Version 43 to 44	Changed	Removed skus that are going EOL. Updated naming on a few skus. Changes made to the Related Options, Config Info, Product Highlights and Overview Sections.
31-Oct-2014	From Version 42 to 43	Changed	Changes made throughout the QuickSpecs.
9-May-2014	From Version 41 to 42	Changed	Recommended Services was revised.
31-Jan-2014	From Version 39 to 41	Added	MSL Library Extender was added to Related Options
2-Dec-2013	From Version 38 to 39	Changed	Edits were mostly to reflect the removal of the LTO-3 Ultrium 920 and the MSL8048 and MSL8096 and to add the MSL6480 throughout.
30-Sep-2013	From Version 37 to 38	Changed	Product descriptions were revised in Configuration and Related Options.
22-Mar-2013	From Version 36 to 37	Added	Added StoreEver throughout entire QS  Compatibility: Added Compatibility section to section.  Related Options: Added HBAs/Controllers for Tape Automation Connect section.
		Removed	Product Highlights: Removed Ease of Use with LTFS and HPE StoreOpen section
		Changed	Overview: Updated product description and key features sections  Product Highlights: Updated TapeAssure, Included backup and recovery software sections.  Service and Support, HPE CarePack and Warranty Information: Updated Warranty section  Configuration Information: Updated all section in Step 1 and first section in Step 2  Related Options: Updated Optical cables, Cable Kits (SCSI,SAS), Rack Cabinets and Media sections.  Technical Specification: Updated Chart sections

### Summary of Changes

			Maximum Capacity, Average Cartridge Swap Time in Extended Libraries (drive to slot, slot to drive) and Connectors sections.
18-Jan-2013	From Version 34 to 35	Changed	Changes were made in the following sections:  Configuration Information: Step 1/HPE StoreEver MSL4048 Tape Library  Related Options: Encryption, Table Top Conversion Kit, Media
21-Dec-2012	From Version 33 to 34	Changed	Changes were made in the following sections:  Overview: Family Comparison  Related Options: Optical Cables
4-Dec-2012	From Version 32 to 33	Changed	Changes were made throughout the QuickSpecs.
12-Oct-2012	From Version 31 to 32	Changed	Change made to URL in Service and Support, HPE Care Pack, and Warranty Information section.
24-Sep-2012	From Version 30 to 31	Changed	Changes made throughout the QuickSpecs.
7-Sep-2012	From Version 29 to 30	Changed	Changes made to the North America and Canada versions.
17-Aug-2012	From Version 28 to 29	Changed	Changes made to the Related Options section.
10-Aug-2012	From Version 26 to 28	Changed	Changes made to Product Highlights and Related Options.
22-Jun-2012	From Version 25 to 26	Changed	Changes made to Product Highlights and Related Options.
6-Apr-2012	From Version 24 to 25	Changed	FC Host Bus Adapters were added to Related Options  HPE MSL4048 2 LTO-4 Ultrium 1840 and 1760 and 1 LTO-3 Ultrium 920 SCSI Tape Libraries were removed from HPE MSL4048 Tape Library  HPE U320e SCSI Host Bus Adapter was removed from SCSI Host Bus Adapters
16-Mar-2012	From Version 23 to 24	Removed	Mentions of LTO-3 Ultrium 960 and PremierFlex OM3+ LC/LC type cables and OM2 LC-LC type cables were removed.
10-Feb-2012	From Version 22 to 23	Added	Added HPE Smart Array P711m and HPE Smart Array P712m adapters to the options section.
13-Jan-2012	From Version 21 to 22	Changed	HPE StoreOpen Automation was revised.
30-Sep-2011	From Version 20 to 21	Added	Linear Tape File System (LTFS) and HPE StoreOpen Automation were added to Product Highlights.
2-Sep-2011	From Version 19 to 20	Changed	Drive interface was updated in the Family Comparison chart  Optical cables were revised in Related Options



### Summary of Changes

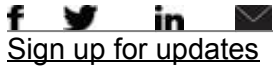
			Connectors was completely revised in Technical Specifications
8-Jul-2011	From Version 18 to 19	Changed	Revisions were made in Configuration Information and to Redundant Power Supply Upgrade Kit in Related Options.
17-Jun-2011	From Version 16 to 18	Changed	OM3 LC-LC type cables were revised and 2m SW LC/SC FC Cable Kit was removed from OM2 LC-LC type cables in Optical Cables.
8-Jun-2011	From Version 15 to 16	Removed	Removed StorageWorks throughout the document.
27-Sep-2010	From Version 14 to 15	Changed	<p>Family Comparison chart was revised</p> <p>Software in the Box was changed to Included backup and recovery software in Product Highlights</p> <p>Tape Libraries were completely revised and mentions of HPE Data Protector Express Basic backup and recovery software was added throughout Step 1</p> <p>Easy and economical upgrade of the included software to Data Protector Express was added to Product Highlights</p> <p>Optical Cables were added to Related Options</p> <p>Upgrade included software to Data Protector Express was added to Related Options</p> <p>Customer Benefits was removed from the Overview</p> <p>2m, 5m and 15m SW LC/SC FC Cable Kits were removed from Cable Kits</p> <p>5642 (42U) Rack Cabinet was removed from Rack Cabinets</p>
21-Jun-2010	From Version 13 to 14	Changed	<p>Revisions were made throughout the Overview and Product Highlights sections</p> <p>Service and Support, HPE Care Pack, and Warranty Information was completely revised</p> <p>HPE LTO-5 Ultrium RW Bar Code Labels and WORM Bar Code Labels were added and Storage Media Kits were removed from Media</p> <p>All mentions of LTO-5 Ultrium 3000 was added</p>
29-Mar-2010	From Version 12 to 13	Changed	<p>LTO-5 Ultrium 3280 Tape Drives were added throughout the QuickSpecs, TapeAssure was added to Product Highlights and Documentation kit including User and Service Guide (CD) and Getting Started Poster was removed throughout</p>

### Summary of Changes

			Step 1 of the Configuration Information.
15-Jan-2010	From Version 11 to 12	Changed	NOTE for HPE StorageWorks MSL2024 Ultrium Left Magazine Kit was revised in Magazine Kits.
11-Dec-2009	From Version 10 to 11	Changed	PDU Power Cords was revised in Step 2 of the Configuration Information section.
25-Nov-2009	From Version 9 to 10	Changed	SAS and SCSI Host Bus Adapters and Controller/HBA and Cable Recommendation Matrix were modified in Related Options and Native Maximum Transfer Rate was revised for LTO-4 Ultrium 1760 in the Technical Specifications section.
9-Oct-2009	From Version 8 to 9	Removed	Removed part number AH219A from Step 1 of Configuration Information.
24-Sep-2009	From Version 7 to 8	Added	Added part numbers AK379A & AK381A to step 1 of the Configuration Information section.
		Removed	Removed part number AH219A from the Recommended Services section.
14-Sep-2009	From Version 6 to 7	Added	MLS8048 Tape Library throughout the QuickSpecs  Slot license upgrade to the Product Highlights and Related Options sections  StorageWorks to Model descriptions throughout the Configuration Information and Related Options sections
		Changed	The title has changed.
29-Jul-2009	From Version 5 to 6	Added	Added pointers to the Library Extender and Data Encryption sections in Product Highlights.
8-Jul-2009	From Version 4 to 5	Changed	Corrected two part numbers in the Related Options section.
19-Jun-2009	From Version 3 to 4	Added	Software in the Box to the Product Highlights section  HPE Data Protector Express Software CD to HPE StorageWorks MSL2024 and MSL 4048 Tape Libraries in Step 1 of the Configuration Information section HPE MSL2024/4048/8096 LTO-4 Ultrium 1760 SCSI Drive Upgrade Kit and HPE MSL 2024/4048/8096 LTO-2 Ultrium 448 SCSI Drive Upgrade Kit to Tape Drives in the Related Options section 2m SFF8088-to-SFF8088 1x SAS Cable Kit and 4m SFF8088-to-SFF8088 1x SAS Cable Kit to Cable Kits in the Related Options section Controller/HBA & Cable Recommendation Matrix to the Related Options section
		Changed	Updated NOTES for HPE SC44Ge SAS Host Bus Adapter in Host Bus Adapters and throughout Cable Kits in the Related Options section  Revised LTO-2 Ultrium 448 Drive Technology for

### Summary of Changes

			MSL2024 in the Technical Specifications section
12-May-2009	From Version 2 to 3	Changed	The title has changed.
23-Apr-2009	From Version 1 to 2	Changed	Changes made within the Family Comparison, Product Highlights, Related Options and Technical Specifications.



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For tape drives and media, 1 GB = 1 billion bytes. Actual formatted capacity is less.

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