Overview

HPE StoreEver MSL Entry-level Tape Automation

The HPE StoreEver MSL Entry-level Tape Automation meets demanding storage requirements of businesses needing unattended backup, disaster recovery, or archive capability. The MSL 1/8 Autoloader and MSL2024 Tape Library offer a broad choice of storage capacity and technology including LTO-8, LTO-7 or LTO-6 Ultrium tape drives. Web-based remote management make the MSL 1/8 Autoloader and the MSL2024 Tape Library easy to manage 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 removable magazines. If a tape were lost or stolen, protect important business data from unauthorized access with data encryption options. MSL 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 MSL 1/8 Tape Autoloader or MSL2024 Tape Library, or move tape drive kits to the MSL3040 or MSL6480 for library scalability and additional enterprise class features. Proactively receive detailed information about your MSL Tape Automation with TapeAssure Advanced. 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 MSL 1/8 Tape Autoloader



HPE StoreEver MSL2024 Tape Library

What's New

- HPE StoreEver MSL 1/8 0-drive Tape Autoloader now accommodates existing MSL upgrade drive kits

Overview

Key Features

- Exceptional storage density: 240 TB with 1/8 Autoloader, 720 TB with MSL2024 (2.5:1 compression using LTO-8 tape cartridges)
- Easy-to-use web-based remote management
- Integrated bar code reader
- Tool-free tape drive upgrades
- Leverage tape drives in a 1/8 Autoloader orMSL2024 into an MSL3040 or 6480 for investment protection.
- Removable magazines with user-configurable mail slots
- Extensive OS and software compatibility testing
- 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 Advanced.

Standard Features

MSL Entry-level Tape Automation Comparison		
	MSL 1/8 Tape Autoloader	**MSL2024**
Drive Technology Supported	LTO-8 Ultrium 30750 LTO-7 Ultrium 15000 LTO-6 Ultrium 6250 LTO-5 Ultrium 3000	LTO-8 Ultrium 30750 LTO-7 Ultrium 15000 LTO-6 Ultrium 6250 LTO-5 Ultrium 3000
Maximum Number of Drives	1	2
Maximum Capacity (2.5:1 compression)	240TB(LTO-8, 8 slots)	720TB (LTO-8, 24 slots)
Maximum Data Transfer (Native)	1TB/hr (1 LTO-8 drive)	2.16 TB/hr (2 LTO-8 drives)
Drive Interface	8 Gb Native Fibre Channel 6 Gb/sec SAS	8 Gb Native Fibre Channel 6 Gb/sec SAS

HPE StoreEver Management Software

HPE StoreEver Management Software consists of HPE Command View for Tape Libraries (CVTL), HPE StoreEver TapeAssure Advanced and HPE StoreEver Data Verification. HPE CVTL provides an easy to use interface for efficiently managing, monitoring and configuring an entire tape library environment. from across the room or across the globe. HPE StoreEver TapeAssure Advanced provides the analytics element that implements and presents automated and predictive health, performance and utilization related monitoring of all tape drives and cartridges. HPE StoreEver Data Verification Software proactively validates and scans, non-disruptively, the quality of data stored on LTO tape cartridges, which ensures a successful restore is possible when critical business data is needed.

HPE StoreEver TapeAssure Advanced and Data Verification Software can also be trialed for free once the CVTL Software has been installed. Simply download CVTL for free from **http://www.hpe.com/support/cvtl** and get a 60 day instant-on period to experience TapeAssure Advanced features, and trial Data Verification for the MSL3040 & MSL6480 Tape Libraries with a 10 cartridge slot license.

For more information on HPE StoreEver Management Software, visit:
http://www.hpe.com/storage/cvtl

Easy Installation

The MSL2024 Tape Library is 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.
https://www.hpe.com/us/en/integrated-systems/rack-power-cooling.html

Notes: For the MSL 1/8 Autoloader, the rack-mount kit must be ordered separately. Please see the configuration information for more detail.

Partitioning

The MSL2024 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; two partitions if two 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.

Standard Features

LTO-7 Type M media

The 1/8 Tape Autoloader and MSL2024 Tape Library support LTO-7 Type M media. This is the ability of an LTO-8 drive to write 9 TB (native) on a brand new LTO-7 cartridge instead of 6 TB (native) as specified by the LTO-7 format. LTO-7 Type M cartridges will be designated by an automation barcode label ending with the last 2 characters “M8”. A standard 6TB LTO-7 cartridge is indicated with an automation barcode label ending in “L7”. An LTO-8 cartridge has a capacity of 12 TB (native), and is indicated with an automation barcode label ending in “L8”.

Only unused LTO-7 cartridges may be initialized as LTO-7 Type M. Once a cartridge is initialized as Type M, it may not be changed back to a 6TB LTO-7 cartridge. Also, an LTO-7 Type M cartridge can only be written and read in an LTO-8 drive; LTO-7 drives are not capable of reading LTO-7 Type M cartridges.

LTO-7 Type M media supports existing LTO format features including data compression, encryption and partitioning enabling LTFS. LTO-7 Type M media is not supported on WORM cartridges.

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.

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-8, 7, 6 and 5 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

Data Encryption

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

HPE 1/8 G2 & MSL Encryption Kit

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 and it must be physically accessible so that the USB token can be inserted into the automation device. The second token will be used as a backup token, in case the first one is lost or damaged. The USB key server token will plug into the USB port in the library and will generate and maintain encryption keys for the LTO-4 and later generation drives. 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

Standard Features

KMIP

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

Serviceability

Modular in design, the MSL Tape Automation 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. 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 twelve-generation LTO format roadmap..

The LTO standard for backward compatibility up to generation seven is to write back one generation and read back two generations. Eighth-generation LTO Ultrium drives read and write LTO -7 and LTO-8 media.

As part of the LTO open standard, all HPE tape drives and media offer the same standards of compatibility with tape drives and media manufactured by other LTO vendors.

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-8 Ultrium 30750	101 to 300 MB/s
HPE LTO-7 Ultrium 15000	101 to 300 MB/s
HPE LTO-6 Ultrium 6250	54 to 160 MB/s
HPE LTO-5 Ultrium 3000	47 to 140 MB/s

Standard Features

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 later generation Ultrium products

Notes: While all HPE LTO-3 and later generations 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 the tape drive

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Micro Focus Data Protector software

Micro Focus Data Protector software automates high performance backup and recovery, from disk or tape, over unlimited distances, to enable 24x7x365 business continuity and improve IT resource utilization. Data Protector software responds to the pressure for lower IT costs and greater operational efficiency, 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. Data Protector software fully integrates with the Hewlett Packard Enterprise management solutions, allowing managing data protection as an essential element of an overall IT service. 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:
https://software.microfocus.com/en-us/software/data-protector

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Standard Features

HPE Library and Tape Tools

The 1/8 Tape Autoloader and MSL2024 Tape Library are supported with HPE Library and Tape Tools (L&TT). L&TT is a free diagnostic tool for all of the HPE tape storage products. This robust diagnostic tool is designed for both the experienced professional and the untrained administrator, and it allows customers to verify the installation, ensure product reliability, perform diagnostics and achieve faster resolution of tape device issues. L&TT performs firmware upgrades, verification of device operation, failure analysis and a range of utility functions. Performance tools assist in troubleshooting issues and system configuration checks warn of common host issues. It also provides seamless integration with HPE support by generating and e-mailing test results and support tickets. HPE Support will require the use of L&TT to troubleshoot most device issues, so it is recommended that a support ticket is pulled and the device assessment test is run before calling.

For more information on L&TT, please visit: **http://www.hpe.com/support/tapetools**.

HPE Storage Media

Hewlett Packard Enterprise branded Linear Tape Open (LTO) Ultrium cartridges are designed, manufactured and tested to provide outstanding reliability for backing up, archiving and restoring your data. We continuously monitor the quality of our branded tapes using what we believe is the industry's most comprehensive and forensic specification for quality and reliability. Using real life conditions and both Hewlett Packard Enterprise and non-HPE drives, we supplement extensive in-process QA parametric testing with ongoing drive based scrutiny, to make sure performance is excellent for any combination of device, duty cycle and environment.

Because Hewlett Packard Enterprise is a leading supplier of both LTO tape devices and media, we have the ability to re-create many different scenarios mirroring how customers use their cartridges. And many of the HPE protocols are either unique in nature or scale, such as the HPE 'Green Tape', and HPE 'Environmental Interchange' tests, or far surpass industry standards, for example, The HPE 'Locate/Rewind/Append' test. Since the beginning of 2016, almost 700 million meters of media have been pulled and over 40 million gigabytes of data have been written in the HPE demanding GTT protocol. All of these ongoing tests are intended to ensure HPE LTO Ultrium media is the most reliable you can find. Your best choice for ease of support and maximum dependability is to use HPE-branded Ultrium cartridges at all times.

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**.

Compatibility

The HPE 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 Hewlett Packard Enterprise. 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 automation, check the HPE StoreEver Compatibility Matrix at: **https://www.hpe.com/storage/StoreEverSupportMatrix**

Service and Support

Warranty

1/8 Autoloader: Hewlett Packard Enterprise provides a 1-year, next business day onsite, part exchange, limited warranty for the 1/8 Autoloader and its components including drives, plus 9x5 phone support for the duration of the warranty.

MSL2024: Hewlett Packard Enterprise provides a 1-year, next business day onsite, part exchange, limited warranty for the MSL2024 Tape Library and its components including drives, plus 9x5 phone support for the duration of the warranty.

Notes: 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://www.hpe.com/storage/warranty

HPE Pointnext – Service and Support

Get the most from your HPE Products. Get the expertise you need at every step of your IT journey with **HPE Pointnext Services**. We help you lower your risks and overall costs using automation and methodologies that have been tested and refined by HPE experts through thousands of deployments globally. HPE Pointnext **Advisory Services**, focus on your business outcomes and goals, partnering with you to design your transformation and build a roadmap tuned to your unique challenges. Our **Professional** and **Operational Services** can be leveraged to speed up time-to-production, boost performance and accelerate your business. HPE Pointnext specializes in flawless and on-time implementation, on-budget execution, and creative configurations that get the most out of software and hardware alike.

Consume IT on your terms

HPE GreenLake brings the cloud experience directly to your apps and data wherever they are—the edge, colocations, or your data center. It delivers cloud services for on-premises IT infrastructure specifically tailored to your most demanding workloads. With a pay-per-use, scalable, point-and-click self-service experience that is managed for you, HPE GreenLake accelerates digital transformation in a distributed, edge-to-cloud world..

- Get Faster time to market
- Save on TCO, align costs to business
- Scale quickly, meet unpredictable demand
- Simplify IT operations across your data centers and clouds

Managed services to run your IT operations

HPE GreenLake Management Services provides services that monitor, operate, and optimize your infrastructure and applications, delivered consistently and globally to give you unified control and let you focus on innovation.

Free up resources with Operational Services from HPE Pointnext Services

HPE delivers services for IT by using proven best practices as well as automation and methodologies that have been tested and refined by HPE experts and artificial intelligence through thousands of deployments globally. Choose from the recommended services for customers purchasing from Hewlett Packard Enterprise or an authorized reseller. Services are quoted using Hewlett Packard Enterprise order configuration tools.

HPE Pointnext Tech Care.

HPE Pointnext Tech Care is the new operational service experience for HPE products. Tech Care goes beyond traditional support by providing access to product specific experts, an AI driven digital experience, and general technical guidance to not only reduce risk but constantly search for ways to do things better. HPE Pointnext Tech Care has been reimagined from the ground up to support a customer-centric, AI driven, and digitally enabled customer experience to move your business forward. HPE Pointnext Tech Care is available in three response levels. Basic, which provides 9x5 business hour availability and a 2 hour response time.

Service and Support

Essential which provides a 15 minute response time 24x7 for most enterprise level customers, and Critical which includes a 6 hour repair commitment where available and outage management response for severity 1 incidents.

For more information: **https://www.hpe.com/services/techcare**

HPE Pointnext Complete Care

HPE Pointnext Complete Care is a modular, edge-to-cloud IT environment service that provides a holistic approach to optimizing your entire IT environment and achieving agreed upon IT outcomes and business goals through a personalized and customer-centric experience. All delivered by an assigned team of HPE Pointnext Services experts. HPE Pointnext Complete Care provides:

- A complete coverage approach – edge to cloud
- An assigned HPE team
- Modular and fully personalized engagement
- Enhanced Incident Management experience with priority access
- Digitally enabled and AI Driven customer experience

For more information: **https://www.hpe.com/services/completecare**
For more information: **https://www.hpe.com/us/en/services/datacenter-hybrid-services.html**

Other related services from HPE Pointnext Services

Parts and Materials

HPE will provide HPE-supported replacement parts and materials necessary to maintain the covered hardware product in operating condition, including parts and materials for available and recommended engineering improvements.

Parts and components that have reached their maximum supported lifetime and/or the maximum usage limitations as set forth in the manufacturer's operating manual, product QuickSpecs, or the technical product data sheet will not be provided, repaired, or replaced as part of these services.

Defective Media Retention

An option available with HPE Datacenter Care and HPE Pointnext Tech Care and applies only to Disk or eligible SSD/Flash Drives replaced by HPE due to malfunction.

HPE Installation Service

Provides for the basic hardware installation of HPE branded servers, storage devices and networking options to assist you in bringing your new hardware into operation in a timely and professional manner.
https://h20195.www2.hpe.com/v2/Getdocument.aspx?docname=5981-9356enw

HPE StoreEver MSL Tape Library and Autoloader Installation and Startup Service

Provides for the installation of HPE StoreEver MSL Tape Libraries and Autoloaders, including library subcomponents, into SAN environments.
For more information: **https://psnow.ext.hpe.com/doc/4AA6-2765ENW**

HPE Service Credits

Offers flexible services and technical skills to meet your IT demands as your business evolves. With a menu of services, you can access additional resources and specialist skills to help you maintain peak performance of your IT. HPE Service Credits help you proactively respond to your dynamic IT and business needs.

HPE Education Services

Provides comprehensive training designed to expand the skills of your IT staff and keep them up to speed with the latest technologies.

Consult your HPE Sales Representative or Authorized Channel Partner of choice for any additional questions and support options.

Service and Support

AI Powered and Digitally Enabled Support Experience

Achieve faster time to resolution with access to product-specific resources and expertise through a brand-new digital and data driven customer experience.

Sign into the customer engagement platform, featuring modern self-serve case creation and management capabilities with inline knowledge recommendations. You will find powerful troubleshooting support through a new intelligent virtual agent with seamless transition when needed to a live support agent.
For more information: **https://support.hpe.com/hpesc/public/home/signin**

HPE Support Center

The HPE Support Center is a personalized online support portal with access to information, tools and experts to support HPE business products. Submit support cases online, chat with HPE experts, access support resources or collaborate with peers.
The HPE Support Center Mobile App* allows you to resolve issues yourself or quickly connect to an agent for live support. Now, you can get access to personalized IT support anywhere, anytime.
HPE Insight Remote Support and HPE Support Center are available at no additional cost with a HPE warranty, HPE Support Service or HPE contractual support agreement.
Notes: *HPE Support Center Mobile App is subject to local availability.

For more information: **http://www.hpe.com/services**

For more information

www.hpe.com/services
https://www.hpe.com/us/en/services/operational.html

To learn more on HPE Storage Services, please contact your Hewlett Packard Enterprise sales representative or Hewlett Packard Enterprise Authorized Channel Partner. Contact information for a representative in your area can be found at “Contact HPE” For more information: **https://www.hpe.com/us/en/contact-hpe.html**

HPE Support Services are sold by HPE and Hewlett Packard Enterprise Authorized Service Partners:

- Services for customers purchasing from HPE or an enterprise reseller are quoted using HPE order configuration tools.

Customers purchasing from a commercial reseller can find HPE Support Services at **https://ssc.hpe.com/portal/site/ssc/**

Connect your devices*

Notes: *Only include if the product can be connected
Unlock all of the benefits of your technology investment by connecting your products to Hewlett Packard Enterprise. Reduce down time, increase diagnostic accuracy and have a single consolidated view of your environment. By connecting, you will receive 24x7monitoring, pre-failure alerts, automatic call logging, and automatic parts dispatch. HPE Proactive Care Service and HPE Datacenter Care Service customers will also benefit from proactive activities to help prevent issues and increase optimization. All of these benefits are already available to you with your server, storage and networking products, securely connected to HPE support.

Learn more about getting connected at **www.hpe.com/services/getconnected**

Configuration Information

Step 1 - Select Base Tape Automation

HPE StoreEver MSL Tape Automation

Description	SKU
HPE StoreEver MSL 1/8 G2 0-drive Tape Autoloader	R1R75A

Notes:

- Includes 8 slots, zero drives.
- This product is TAA (Trade Agreements Act) compliant.

HPE StoreEver MSL2024 0-drive Tape Library	AK379A

Notes:

- Includes 24 slots, zero drives.
- This product is TAA (Trade Agreements Act) compliant.
- MSL2024 rack-rail extends approximately 27.5 to 33 inches (69.8 to 83.8 cm)

Kit Contents (for each autoloader/library):

- One 2.5M PDU Power Cord, C13/C14, 10A (part number 142257-002)
- One RJ-45 Ethernet cable
- Rack-mount hardware (only included with MSL2024)

Factory Racking

Factory integrate the 1/8 Tape Autoloader and MSL2024 Tape Library with other HPE products such as HPE ProLiant Servers	#0D1

Notes: #0D1 will appear after the Tape Library part number on the sales order if HPE factory integration is indicated.

Step 2 - Select Generation & Quantity of Ultrium Tape Drives

Select each option as required with quantities specified

Tape Drives

HPE StoreEver MSL LTO-8 Ultrium 30750 FC Drive Upgrade Kit	Q6Q67A

Notes:

- Half height LTO-8 FC tape drive. For use with the MSL 1/8 Autoloader, MSL2024, 4048, 3040 or 6480 libraries. Drive kit includes a tape drive and documentation.
- #0D1 will appear after Q6Q67A on the sales order if HPE factory integration is indicated.
- Tape Drive Upgrade Kits can only be factory integrated (#0D1) into the Autoloader when the Autoloader is factory integrated (#0D1) into a rack. If the autoloader has not been ordered for integration into a rack, then the Upgrade Kits and Autoloader will ship as standalone and the drive installed at the customer site
- For tape drives to be integrated into the MSL2024 library, the library must be factory integrated (#0D1) into a rack
- This product is TAA (Trade Agreements Act) compliant.

HPE StoreEver MSL LTO-8 Ultrium 30750 SAS Drive Upgrade Kit	Q6Q68A

Notes:

- Half height LTO-8 SAS tape drive. For use with the MSL 1/8 Autoloader, MSL2024, 4048, 3040 or 6480 libraries. Drive kit includes a tape drive and documentation.
- #0D1 will appear after Q6Q68A on the sales order if HPE factory integration is indicated.
- Tape Drive Upgrade Kits can only be factory integrated (#0D1) into the Autoloader when the Autoloader is factory integrated (#0D1) into a rack. If the autoloader has not been ordered for integration into a rack, then the Upgrade Kits and Autoloader will ship as standalone and the drive installed at the customer site
- For tape drives to be integrated into the MSL2024 library, the library must be factory integrated (#0D1) into a rack
- This product is TAA (Trade Agreements Act) compliant.

Configuration Information

Description	SKU
HPE StoreEver MSL LTO-7 Ultrium 15000 FC Drive Upgrade Kit	N7P36A

Notes:

- Half height LTO-7 Fibre Chanel tape drive. For use with the MSL 1/8 Autoloader, MSL2024, 4048, 3040 or MSL6480 libraries. Drive kit includes a tape drive and documentation.
- #0D1 will appear after N7P36A on the sales order if HPE factory integration is indicated.
- Tape Drive Upgrade Kits can only be factory integrated (#0D1) into the Autoloader when the Autoloader is factory integrated (#0D1) into a rack. If the autoloader has not been ordered for integration into a rack, then the Upgrade Kits and Autoloader will ship as standalone and the drive installed at the customer site
- For tape drives to be integrated into the MSL2024 library, the library must be factory integrated (#0D1) into a rack
- This product is TAA (Trade Agreements Act) compliant.

HPE StoreEver MSL LTO-7 Ultrium 15000 SAS Drive Upgrade Kit	N7P37A

Notes:

- Half height LTO-7 SAS tape drive. For use with the MSL 1/8 Autoloader, MSL2024, 4048, 3040 or MSL6480 libraries. Drive kit includes a tape drive and documentation.
- #0D1 will appear after N7P37A on the sales order if HPE factory integration is indicated.
- Tape Drive Upgrade Kits can only be factory integrated (#0D1) into the Autoloader when the Autoloader is factory integrated (#0D1) into a rack. If the autoloader has not been ordered for integration into a rack, then the Upgrade Kits and Autoloader will ship as standalone and the drive installed at the customer site
- For tape drives to be integrated into the MSL2024 library, the library must be factory integrated (#0D1) into a rack
- This product is TAA (Trade Agreements Act) compliant.

HPE StoreEver MSL LTO-6 Ultrium 6250 SAS Drive Upgrade Kit	C0H27A

Notes:

- Half height LTO-6 SAS tape drive. For use with the MSL 1/8 Autoloader, MSL2024, 4048, 3040 or MSL6480 libraries. Drive kit includes a tape drive and documentation.
- #0D1 will appear after C0H27A on the sales order if HPE factory integration is indicated.
- Tape Drive Upgrade Kits can only be factory integrated (#0D1) into the Autoloader when the Autoloader is factory integrated (#0D1) into a rack. If the autoloader has not been ordered for integration into a rack, then the Upgrade Kits and Autoloader will ship as standalone and the drive installed at the customer site
- For tape drives to be integrated into the MSL2024 library, the library must be factory integrated (#0D1) into a rack
- This product is TAA (Trade Agreements Act) compliant.

HPE StoreEver MSL LTO-6 Ultrium 6250 Fibre Channel Drive Upgrade Kit	C0H28A

Notes:

- Half height LTO-6 FC tape drive. For use with the MSL 1/8 Autoloader, MSL2024, 4048, 3040 or MSL6480 libraries. Drive kit includes a tape drive and documentation.
- #0D1 will appear after C0H28A on the sales order if HPE factory integration is indicated.
- Tape Drive Upgrade Kits can only be factory integrated (#0D1) into the Autoloader when the Autoloader is factory integrated (#0D1) into a rack. If the autoloader has not been ordered for integration into a rack, then the Upgrade Kits and Autoloader will ship as standalone and the drive installed at the customer site
- For tape drives to be integrated into the MSL2024 library, the library must be factory integrated (#0D1) into a rack
- This product is TAA (Trade Agreements Act) compliant.

Configuration Information

Step 3 - Select Software Licenses

TapeAssure Advanced

HPE StoreEver Autoloader TapeAssure Advanced LTU TC407A

Notes:

- 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.
- One license needed per library and Command View TL must be installed.
- This is a paper license that will be mailed.

Description **SKU**

HPE StoreEver Autoloader TapeAssure Advanced E-LTU TC407AAE

Notes:

- 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 capabilities of analytics around drive health and life as well as cartridge health and life.
- One license needed per library and Command View TL must be installed.
- This is an electronically delivered License.

HPE StoreEver MSL TapeAssure Advanced LTU TC406A

Notes:

- 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.
- One license needed per library and Command View TL must be installed.
- This is a paper license that will be mailed.

HPE StoreEver MSL TapeAssure Advanced E-LTU TC406AAE

Notes:

- 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 capabilities of analytics around drive health and life as well as cartridge health and life.
- One license needed per library and Command View TL must be installed.
- This is an electronically delivered License.

Encryption Options/Licenses

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

Notes: For use with new or installed LTO-8, LTO-7, LTO-6, and LTO-5 drives for 1/8 Tape Autoloader, MSL2024/4048/3040 or MSL6480 Tape Libraries. The Encryption Kit key server token generates and retains encryption keys for above LTO Tape drives in the library. Does not require support from ISV.

HPE StoreEver MSL2024 KMIP Encryption LTU TC468A

Notes:

- For use with MSL2024/4048 Tape libraries using LTO-8, LTO-7, LTO-6 or LTO-5 tape drives. The license will enable secure connectivity with supported KMIP 1.2 compliant key management servers. See the HPE StoreEver Compatibility Matrix (Formerly EBS) for the list of supported servers. **https://www.hpe.com/storage/StoreEverSupportMatrix**
- This license will be delivered via hard copy in the mail.

Configuration Information

Description	SKU
HPE StoreEver MSL2024 KMIP Encryption E-LTU	TC468AAE

Notes:

- For use with MSl 1/8 Tape Autoloader, MSL2024/4048 Tape libraries using LTO-8, LTO-7, LTO-6 or LTO-5 tape drives. The license will enable secure connectivity with supported KMIP 1.2 compliant key management servers. See the HPE StoreEver Compatibility Matrix (Formerly EBS) for the list of supported servers. **https://www.hpe.com/storage/StoreEverSupportMatrix**
- This license will be delivered electronically.

Step 4 - Select Additional Accessories

Regional Power Cords (Quantity 1 each)

Notes: 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.

HPE C13 - Nema 5-15P US/CA 110V 10Amp 1.83m Power Cord	AF556A
HPE C13 - CEE-VII EU 250V 10Amp 1.83m Power Cord	AF568A
HPE C13 - BS-1363A UK/HK/SG 250V 10Amp 1.83m Power Cord	AF570A
HPE C13 - DK-2.5A DK 250V 10Amp 1.83m Power Cord	AF566A
HPE C13 - SEV 1011 CH 250V 10Amp 1.83m Power Cord	AF565A
HPE C13 - SABS-164 ZA 250V 10Amp 2.5m Power Cord	AF567A
HPE C13 - CNS-690 TW 110V 13Amp 1.83m Power Cord	AF561A
HPE C13 - GB-1002 CN 250V 10Amp 1.83m Power Cord	AF557A
HPE C13 - JIS C8303 JP 100V 12Amp 2.0m Power Cord	AF572A
HPE C13 - AS3112-3 AU 250V 10Amp 2.5m Power Cord	AF569A
HPE C13 - IRAM -2073 AR 250V 10A 2.5m Power Cord	AF558A
HPE C13 - Nema 5-15P TH/PH 250V 10Amp 1.83m Power Cord	AF559A
HPE C13 - KSC- 8305 KR 250V 10Amp 1.83m Power Cord	AF560A
HPE C13 - SI-32 IL 250V 10Amp 1.83m Power Cord	AF564A
HPE C13 - IS-1293 IN 240V 6Amp LV 2.0m Power Cord	AF562A

Notes: 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.

Related Options

Magazine Kits

Description	SKU
HPE StoreEver 1/8 G2 Right Magazine Kit	AH167A
Notes: The MSL 1/8 Autoloader comes standard with a right and left magazines. For use only on the right side of the MSL 1/8 Autoloader; additional 4-slot magazine.	
HPE StoreEver 1/8 G2 Tape Autoloader Left Magazine Kit	AH862A
Notes: The MSL 1/8 Autoloader comes standard with a right and left magazine. For use only on the left side of the 1/8 Autoloader; additional 4-slot magazine which includes an import/export slot.	
HPE StoreEver MSL2024 Ultrium Left Magazine Kit	AG119A
Notes: The MSL2024 comes standard with a right and left magazine. 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	
HPE StoreEver MSL Ultrium Right Magazine Kit	AG120A
Notes: The MSL 2024 comes standard with a right and left magazine. For use on the right side of the MSL 2024 Tape Libraries; additional 12-slot magazine for the right position.	

Factory Racking

Factory integrate the 1/8 G2 Tape Autoloader and MSL2024 Tape Library with other Hewlett Packard Enterprise products such as Hewlett Packard Enterprise ProLiant Servers. **Notes:** #0D1 will appear after the part number on the sales order if Hewlett Packard Enterprise factory integration is indicated.	#0D1
HPE Integrity rx26/2800 Rack Support Shelf Kit	AB469A
Notes: Required to safely ship the 1/8 G2 Tape Autoloader via the factory integration option (#0D1); shelf can be removed after the rack is received at the customer site.	

Rack Kit

HPE StoreEver 1/8 G2 Tape Autoloader Rack Kit	AH166A
Notes: Required to install the unit in a standard 19-inch rack; includes rails and rackmount instructions	

Rack Cabinets

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:
http://www.hpe.com/info/rackandpower
Notes: 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.

FC Host Bus Adapters

The MSL Libraries are certified with a number of Fibre Channel Host Bus Adapters. For the most current list of supported FC HBAs, please reference the HPE StoreEver Compatibility Matrix (Formerly EBS) and Design Guide located at:
https://www.hpe.com/storage/StoreEverSupportMatrix.

For more information on FC HBAs, see HPE StoreFabric Adapters at:
http://www.hpe.com/storage/san/

Related Options

SAS Host Bus Adapters

The MSL Libraries are certified with a number of SAS Host Bus Adapters and ProLiant Smart Array Controllers. For the most current list of supported devices, please reference the HPE StoreEver Compatibility Matrix (Formerly EBS) and Design Guide located at: **https://www.hpe.com/storage/StoreEverSupportMatrix**.

For more information on HPE Smart Array RAID controllers, see Fibre HPE P-class RAID controllers at:
http://www.hpe.com/servers/smartarray/

For more information on HPE ProLiant (SAS) host bus adapters, see H-class HBA controllers at:
http://www.hpe.com/servers/smartarray/

HBAs and SAS Controllers

Description	SKU
HPE Smart Array P408e-p SR Gen10 (8 External Lanes/4GB Cache) 12G SAS PCIe Plug-in Controller	804405-B21
Notes: Recommended for ProLiant Gen10 SAS tape automation connect	
HPE Smart Array E208e-p SR Gen10 (8 External Lanes/No Cache) 12G SAS PCIe Plug-in Controller	804398-B21
Notes: Recommended for ProLiant Gen10 SAS tape automation connect	
Microsemi Adaptec HBA 1100-8e	A1100-8E
Notes: Recommended SAS HBA for DL & ML Gen9 servers only. HPE does not provide official support for this adapter, however the configuration is supported.	

Media

HPE LTO-8 Ultrium 30TB RW Data Cartridge	Q2078A
HPE LTO-8 Ultrium 30TB WORM Data Cartridge	Q2078W
HPE LTO-7 Ultrium 15TB RW Data Cartridge	C7977A
HPE LTO-7 Ultrium No Case 960 Tape Pallet	C7977AB
HPE LTO-7 Ultrium RW 960 Tape Pallet	C7977AD
HPE LTO-7 Ultrium 15TB Eco Case Data Cartridge 20 Pack	C7977AH
HPE LTO-7 Ultrium WORM Data Cartridge	C7977W
HPE LTO-6 Ultrium 6.25TB RW Data Cartridge	C7976A
HPE LTO-6 Ultrium 6.25TB RW 960 Data Cartridge Pallet with Cases	C7976AD
HPE LTO-6 Ultrium 6.25TB WORM Data Cartridge	C7976W
HPE LTO-6 Ultrium 6.25TB BaFe RW Data Cartridge	C7976B
HPE LTO-6 Ultrium 6.25TB BaFe WORM Data Cartridge	C7976BW
HPE LTO-5 Ultrium 3TB RW Data Cartridge	C7975A
HPE LTO-5 Ultrium 3TB WORM Data Cartridge	C7975W
HPE Ultrium Universal Cleaning Cartridge	C7978A

Bar Code Labels

HPE LTO-8 Ultrium RW Bar Code Label Pack	Q2015A

Related Options

Description	SKU
HPE LTO-7 Ultrium Type M RW Bar Code Label Pack	Q2016A
HPE LTO-7 Ultrium RW Bar Code Label Pack	Q2014A
HPE LTO-6 Ultrium RW Bar Code Label Pack	Q2013A
HPE LTO-5 Ultrium RW Bar Code Label Pack	Q2011A
HPE LTO-5 Ultrium WORM Bar Code Label Pack	Q2012A
Non-Custom Labeled Data Cartridges	
Notes: Non-Custom labels will come pre-labeled with a pre-determined number sequence.	
HPE LTO-8 Ultrium 30TB RW Non Custom Labeled Library Pack 20 Data Cartridges with Cases	Q2078AN
HPE LTO-7 Ultrium Type M 22.5TB RW 20 Data Cartridges Non Custom Labeled with Cases	Q2078MN
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
HPE LTO-6 Ultrium 6.25TB RW Non Custom Labeled 20 Data Cartridges with Cases	C7976AN
HPE LTO-6 Ultrium 6.25TB BaFe RW Non Custom Labeled Data Cartridges 20 Pack	C7976BN
HPE LTO-5 Ultrium Non-custom Labeled Data Cartridge 20 Pack	C7975AN
Custom labeled Data Cartridges	
Notes: Custom labeled products allow customers to customize a specific sequence printed on each label.	
HPE LTO-8 Ultrium 30TB RW Custom Labeled Library Pack 20 Data Cartridges with Cases	Q2078AL
HPE LTO-8 Ultrium 30TB WORM Custom Labeled Library Pack 20 Data Cartridges with Cases	Q2078WL
HPE LTO-8 Ultrium 30TB RW Custom Labeled Library Pack 20 Data Cartridges without Cases	Q2078AC
HPE LTO-7 Ultrium Type M 22.5TB RW 20 Data Cartridges Custom Labeled with Cases	Q2078ML
HPE LTO-7 Ultrium Type M 22.5TB RW 20 Data Cartridges Custom Labeled Library Pack without Cases	Q2078MC
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
HPE LTO-6 Ultrium 6.25TB RW Custom Labeled 20 Data Cartridges with Cases	C7976AL
HPE LTO-5 RW Custom Labeled Data Cartridge 20 Pack	C7975AL
HPE LTO-5 RW Custom Labeled No Case Data Cartridge 20 Pack	C7975AC
HPE LTO-5 WORM Custom Labeled Cartridge 20 Pack	C7975WL

FC and SAS Host Bus Adapters

The MSL Tape Automation products 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 StoreEver Compatibility Matrix (Formerly EBS) and Design Guide located at: **HPE Storage HPE StoreEver Compatibility Matrix**

Related Options

Optical cables

OM4 LC-LC type cables

Description	SKU
HPE Premier Flex LC/LC Multi-mode OM4 2 Fiber 1m Cable	QK732A
HPE Premier Flex LC/LC Multi-mode OM4 2 Fiber 2m Cable	QK733A
HPE Premier Flex LC/LC Multi-mode OM4 2 Fiber 5m Cable	QK734A
HPE Premier Flex LC/LC Multi-mode OM4 2 Fiber 15m Cable	QK735A
HPE Premier Flex LC/LC Multi-mode OM4 2 Fiber 30m Cable	QK736A
HPE 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

Notes: 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 2.0m External Mini SAS High Density to Mini SAS Cable 716191-B21

Notes:

- 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. HPE 2.0m External Mini SAS High Density to Mini SAS Cable
- One cable is required for every tape drive. Use this cable to connect HPE MSL SAS Tape Automation to the HPE H241 Smart Host Bus Adapter.

HPE 4.0m External Mini SAS High Density to Mini SAS Cable 716193-B21

Notes:

- 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. HPE 4.0m External Mini SAS High Density to Mini SAS Cable
- One cable is required for every tape drive. Use this cable to connect HPE MSL SAS Tape Automation to the HPE H241 Smart Host Bus Adapter.

HPE SAS Min-Min 1x-2M Cable Assembly Kit AE470A

Notes:

- 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 SAS Min-Min 1x-2M Cable Assembly Kit
- 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 SAS Min-Min 1x-4m Cable Assembly Kit AE465A

Notes:

- 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 SAS MIN-MIN 1X-4M Cable Assembly Kit
- 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

Description	SKU
HPE StoreEver 2m External Mini-SAS to 4x1 Mini-SAS Cable	AN975A
Notes: 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
Notes: 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.	

Technical Specifications

		1/8 Tape Autoloader	MSL2024
Drive Technology		LTO-8 Ultrium 30750 LTO-7 Ultrium 15000 LTO-6 Ultrium 6250 LTO-5 Ultrium 3000	LTO-8 Ultrium 30750 LTO-7 Ultrium 15000 LTO-6 Ultrium 6250 LTO-5 Ultrium 3000
Maximum Number of Drives		1	Up to2
Number of Slots		8	24
Drive Interface		8 Gb Native Fibre Channel 6 Gb/sec SAS	8 Gb Native Fibre Channel 6 Gb/sec SAS
Maximum Capacity	**Native**	96 TB (LTO-8) 48 TB (LTO-7) 20 TB (LTO-6) 12 TB (LTO-5)	288 TB (LTO-8) 144 TB (LTO-7) 60 TB (LTO-6) 36 TB (LTO-5)
	Compressed (2.5:1)	240 TB (LTO-8) 120 TB (LTO-7) 50 TB (LTO-6)	720 TB (LTO-8) 360 TB (LTO-7) 150 TB (LTO-6)
	Compressed (2:1)	24 TB (LTO-5)	72 TB (LTO-5)
Maximum Transfer Rate	**Native**	1.08 TB/hr (1x LTO-8) 1.08 TB/hr (1x LTO-7) 0.57 TB/hr (1x LTO-6) 0.5 TB/hr (1x LTO-5)	2.16 TB/hr (2x LTO-8) 2.16 TB/hr (2x LTO-7) 1.15 TB/hr (2x LTO-6)1.0 TB/hr (2x LTO-5)
Dimensions	**Out-of-Box (HxWxD)**	1.7 x 19 x 31.9 in (4.4 x 48.2 x 80.9 cm)	3.4 x 18.9 x 31.7 in (8.7 x 48 x 80.6 cm)
	Shipping (HxWxD)	10 x 23 x 39 in (25 x 58 x 99 cm)	10.7 x 23.2 x 38.9 in (27.1 x 58.9 x 98.7 cm)
Weight	**Out of box**	N/A	32.9 lb (14.9 kg)
	Shipping		56.9 lb (25.8 kg)
Notes: 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 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)	
Average Cartridge Swap Time (drive to slot, slot to drive)	34 seconds	45 seconds	
Initialization Time	76 seconds	80 to 120 seconds	
Inventory Time	52 seconds (using bar code labeled cartridges)	1:20 minutes (using bar code labeled cartridges)	
Connectors	Mini-SAS (MSL SAS model only)- LC Optical Fibre (MSL FC models only) (1)RJ-45 Ethernet (1) USB port		

Technical Specifications

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	80 Watts (max)		MSL2024: 168 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**	5°C to 40°C	50° to 95° F (10° to 35° C)
	Shipping	-40°C to 60°C	-22° to 140° F (-30° to 60° C)
	Notes: 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-Sep-2021	Version 72	Changed	Standard Features and Service and Support sections were updated.
17-May-2021	Version 71	Changed	Overview and Configuration Information sections were updated.
07-Dec-2020	Version 70	Changed	Configuration Information section was updated.
05-Oct-2020	Version 69	Changed	Configuration Information section was updated.
08-Sep-2020	Version 68	Changed	Configuration Information section was updated.
17-Aug-2020	Version 67	Changed	Configuration Information section was updated.
09-Dec-2019	Version 66	Changed	Related Options section was updated.
15-Apr-2019	Version 65	Changed	Configuration Information section was updated.
02-Apr-2019	Version 64	Changed	Standard Features was updated.
04-Mar-2019	Version 63	Changed	Standard Features, Configuration Information and Related Options sections were updated.
04-Feb-2019	Version 62	Changed	Overview, Product Highlights, Service and Support, Configuration Information, Related Options, Technical Specifications sections were updated.
01-Oct-2018	Version 61	Changed	Product Highlights section was updated.
04-Jun-2018	Version 60	Changed	Note for the HPE 1/8 G2 Tape Autoloader and MSL Tape Library Encryption Kit was revised.
05-Mar-2018	Version 59	Changed	Product Highlights and Related Options were revised.
05-Feb-2018	Version 58	Changed	Product Highlights, Configuration Information, Related Options, and Technical Specifications were revised.
04-Dec-2017	Version 57	Changed	LTO-8 updates.
04-Sep-2017	Version 56	Changed	Changes made throughout the QuickSpecs.
07-Aug-2017	Version 55	Changed	Changes made to the Service and Support and Product Highlights
17-Feb-2017	Version 54	Changed	LTO-7 information included
13-Jan-2017	Version 53	Changed	Changes to the HPE StoreEver Archive Manager section
18-Nov-2016	Version 52	Changed	Added the HPE StoreEver Archive Manager in the Product Highlights section
30-Sep-2016	Version 51	Changed	Changes made throughout the QuickSpecs
15-Aug-2016	Version 50	Changed	Changes made to the Configuration Info Section
29-Jul-2016	Version 49	Changed	Changes made to the Related Options and Configuration Information Sections
31-Mar-2016	Version 48	Changed	Updated HPE rebranding, part no corrections and FIPS 140-2 support information for Fusilli launch.
15-Jan-2016	Version 47	Changed	Updated Links to HPE.com and content edits
01-Dec-2015	Version 46	Changed	Changes made throughout the QuickSpecs.
03-Apr-2015	Version 45	Changed	Deleted portions related to MSL library Extenders as they are no longer valid.
30-Jan-2015	Version 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	Version 43	Changed	Changes made throughout the QuickSpecs.
09-May-2014	Version 42	Changed	Recommended Services was revised.
31-Jan-2014	Version 41	Changed	Changes made to the QuickSpecs
31-Jan-2014	Version 40	Changed	Added MSL Library Extender was added to Related Options
02-Dec-2013	Version 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	Version 38	Changed	Product descriptions were revised in Configuration and Related Options.



Summary of Changes

Date	Version History	Action	Description of Change
22-Mar-2013	Version 37	Changed	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
			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 Maximum Capacity, Average Cartridge Swap Time in Extended Libraries (drive to slot, slot to drive) and Connectors sections.
18-Jan-2013	Version 36	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	Version 35	Changed	Changes made to the QuickSpecs
19-Dec-2012	Version 34	Changed	Changes were made in the following sections: Overview: Family Comparison Related Options: Optical Cables
04-Dec-2012	Version 33	Changed	Changes were made throughout the QuickSpecs.
12-Oct-2012	Version 32	Changed	Change made to URL in Service and Support, HPE Pointnext operational, and Warranty Information section.
24-Sep-2012	Version 31	Changed	Changes made throughout the QuickSpecs.
07-Sep-2012	Version 30	Changed	Changes made to the North America and Canada versions.
17-Aug-2012	Version 29	Changed	Changes made to the Related Options section.
10-Aug-2012	Version 28	Changed	Changes made to Product Highlights and Related Options.
22-Jun-2012	Version 27	Changed	Changes made to Product Highlights and Related Options.
18-Jun-2012	Version 26	Changed	Changes made to the QuickSpecs
06-Apr-2012	Version 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	Version 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	Version 23	Added	Added HPE Smart Array P711m and HPE Smart Array P712m adapters to the options section.
13-Jan-2012	Version 22	Changed	HPE StoreOpen Automation was revised.
30-Sep-2011	Version 21	Added	Linear Tape File System (LTFS) and HPE StoreOpen Automation were added to Product Highlights.
02-Sep-2011	Version 20	Changed	Drive interface was updated in the Family Comparison chart Optical cables were revised in Related Options Connectors was completely revised in Technical Specifications
08-Jul-2011	Version 19	Changed	Revisions were made in Configuration Information and to Redundant Power Supply Upgrade Kit in Related Options.

Summary of Changes

Date	Version History	Action	Description of Change
17-Jun-2011	Version 18	Changed	Changes made to the QuickSpecs
17-Jun-2011	Version 17	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.
08-Jun-2011	Version 16	Removed	Removed StorageWorks throughout the document.
27-Sep-2010	Version 15	Changed	Family Comparison chart was revised Software in the Box was changed to Included backup and recovery software in Product Highlights Tape Libraries were completely revised and mentions of HPE Data Protector Express Basic backup and recovery software was added throughout Step 1 Easy and economical upgrade of the included software to Data Protector Express was added to Product Highlights Optical Cables were added to Related Options Upgrade included software to Data Protector Express was added to Related Options Customer Benefits was removed from the Overview 2m, 5m and 15m SW LC/SC FC Cable Kits were removed from Cable Kits 5642 (42U) Rack Cabinet was removed from Rack Cabinets
21-Jun-2010	Version 14	Changed	Revisions were made throughout the Overview and Product Highlights sections Service and Support, HPE Pointnext operational, and Warranty Information was completely revised HPE LTO-5 Ultrium RW Bar Code Labels and WORM Bar Code Labels were added and Storage Media Kits were removed from Media All mentions of LTO-5 Ultrium 3000 was added
29-Mar-2010	Version 13	Changed	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 Step 1 of the Configuration Information.
15-Jan-2010	Version 12	Changed	NOTE for HPE StorageWorks MSL2024 Ultrium Left Magazine Kit was revised in Magazine Kits.
11-Dec-2009	Version 11	Changed	PDU Power Cords was revised in Step 2 of the Configuration Information section.
25-Nov-2009	Version 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.
09-Oct-2009	Version 9	Removed	Removed part number AH219A from Step 1 of Configuration Information.
24-Sep-2009	Version 8	Changed	Added part numbers AK379A & AK381A to step 1 of the Configuration Information section.
			Removed part number AH219A from the Recommended Services section.
14-Sep-2009	Version 7	Changed	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
			The title has changed.
29-Jul-2009	Version 6	Added	Added pointers to the Library Extender and Data Encryption sections in Product Highlights.
08-Jul-2009	Version 5	Changed	Corrected two part numbers in the Related Options section.

Summary of Changes

Date	Version History	Action	Description of Change
19-Jun-2009	Version 4	Changed	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 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 MSL2024 in the Technical Specifications section
12-May-2009	Version 3	Changed	The title has changed.
23-Apr-2009	Version 2	Changed	Changes made within the Family Comparison, Product Highlights, Related Options and Technical Specifications.
20-Apr-2009	Version 1	New	New QuickSpecs

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

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