

Overview

HPE StoreEver MSL6480 Tape Library

The HPE StoreEver MSL6480 Tape Library is the gold standard for mid-range tape automation, delivering best-in-class scalability, density, and performance to meet your short-term backup and disaster recovery data protection needs, as well as long-term archive requirements. Keep pace with data growth by seamlessly scaling up to 7 modules-without disrupting daily data protection. The MSL6480 also saves floor space by providing the highest tape drive density per module of any mid-range tape library. The MSL6480 Tape Library reduces the time and resources needed to achieve enterprise-class manageability, equipping you with proactive monitoring on single pane of glass control. The HPE StoreEver MSL6480 Tape Library can also provide medium sized businesses with a last line of defense solution against the threat of ransomware due to its air-gapped, offline capabilities.



HPE StoreEver MSL6480 Tape Library

Standard Features

Key Features

- Easy scalability - pay as you grow with the fast, non-disruptive addition of Expansion Modules for expansion of tape slots.
- Start with an 80-slot 6U form-factor Base Library Module, and add up to 6 Expansion Library Modules for a total of 560 slots in a 42U rack form factor
- 25.2PB of total maximum compressed capacity with 560 slots and LTO-9 drives
- Performance scaling from 1 to 42 LTO HH Tape Drives and transfer rates of 300 MB/s per LTO-9 Tape Drive.
- Industry leading storage density to save rack space, floor space, power, cooling and management costs - 13 cartridge slots (585 TB) per 1U of rack space
- Best in class flexibility with up to 20 logical library partitions
- Customer installable, scalable, and serviceable with a color touch control panel and wizards for installation and configuration
- Integrated bar code reader
- Manage multiple HPE Tape Libraries from a single pane of glass with HPE Command View for Tape Libraries (CVTL) software
- Intelligent, proactive and predictive reporting with HPE StoreEver TapeAssure Advanced (licensed feature of CVTL)
- Using the HPE Encryption Kit get the simplest, lowest cost encryption and key management solution available - no additional software required
- Existing customers of MSL 1/8 Autoloader, MSL2024 and MSL3040 Tape Libraries can repurpose their drives in the MSL6480 library to leverage their investment
- The HPE extensive interoperability testing means that MSL6480 integrates with industry-leading servers, operating systems and backup software
- Achieve higher levels of availability with data path failover and control path failover.

Drive Technology Supported	LTO-9 Ultrium 45000 LTO-8 Ultrium 30750 LTO-7 Ultrium 15000
Maximum Number of Drives	42 HH
Maximum Capacity (2.5:1 compression)	25.2 PB (LTO-9, 560 slots) 3.6PB (LTO-9, 80 slots)
Maximum Data Transfer (Native)	45.4 TB/hr (42 LTO-9 drives)
Drive Interface	8 Gb/sec Native Fibre Channel 12 Gb/sec (LTO-9) 6 Gb/sec SAS (LTO-8 and earlier)
Mail Slots	10 slots per module

Scalability

Keep pace with data growth across the lifecycle with the MSL6480's industry leading scalability.

Effortlessly address both short-term and long-term storage capacity and performance needs and respond to unpredictable data growth, variance in service, or changes to backup window and retention period. Scale-out architecture allows you to pay as you grow - simply add in new modules to boost capacity and performance without investing in a whole new library.

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The unique modular design of the MSL6480 includes a continuous robotics feature to provide in-box scaling for higher performance, greater scalability, and higher reliability. Upgrades are fast and non-disruptive. Scale vertically from 80 to 560 cartridge slots to store up to 25.2PB* in a single 19-inch rack. Several drive options are available

Add between 1 and 42 HPE StoreEver LTO-9 Ultrium 45000, LTO-8 Ultrium 30750, or LTO-7 Ultrium 15000

Notes: *Assumes fully loaded with LTO-9 media cartridges at a 2.5:1 data compression ratio.

Scaling up with the MSL6480 couldn't be easier:

- Start with an empty Base Library and standard redundant power supplies.
- Add between 1 and 6 LTO-9, LTO-8, or LTO-7 half-height tape drives and utilize up to 80 cartridge slots - a fully configured base unit with LTO-8 provides a max capacity of up to 3.6PB (assuming 2.5:1 compression).
- Then add between 1 and 6 empty expansion modules to the Base Library - each 6U expansion module includes standard redundant power supplies. Expansion modules can be flexibly installed above or below the base library module.
- You can then configure each expansion module with up to 6x LTO-9, LTO-8, or LTO-7 or SAS tape drives and utilize up to 80 cartridge slots per expansion module.

Easy Installation

Expansion modules are customer-installable; easy to configure and remove. The MSL6480 features a color touch operator control panel with wizards for installation and configuration.

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:

[Rack and Power Products for Servers & Data Center Infrastructure | HPE.](#)

Manageability

The HPE StoreEver MSL6480 comes with web-based remote manageability so it 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 (Phase 2 and USGv6 certified) and IPv4 network protocol support
- Command Language Interface (CLI), a menu-driven interface for obtaining library status, configuration information, and tape movement capability

HPE Command View for Tape Libraries

HPE Command View for Tape Libraries (CVTL) provides an easy to use interface for efficiently managing,

Standard Features

monitoring and configuring an entire tape library environment from any remote location. HPE StoreEver TapeAssure Advanced is a licensed feature of CVTL that provides predictive analytics on health, performance and utilization related monitoring of all tape drives and cartridges. HPE StoreEver Data Verification Software is also a licensed feature of CVTL which 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. As of CVTL v6.1, a new capacity planning feature has been added to CVTL which allows users to view consumption metrics which enables accurate and timely future investments.

HPE StoreEver TapeAssure Advanced and Data Verification Software can also be trialed for free once the CVTL Software has been installed. Simply download CVTL from [**HPE StoreEver Command View for Tape Libraries | HPE Support**](#)

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 about HPE Command View for Tape Libraries, please visit:

[**HPE Command View for Tape Libraries | HPE Store US**](#)

Linear Tape File System (LTFS)

LTFS makes tape self-describing, file-based, and easy-to-use, it also provides users with the ability to use standard file operations on tape media for accessing, managing and sharing files with an interface that behaves just like a hard disk. In addition, LTFS provides the ability to share data across platforms, as you would with a USB drive or memory stick. Simply load a tape into the drive, mount it into the file system, and it becomes visible as a disk.

For more information, including user guide, downloads and compatibility, visit:

[**HPE StoreOpen and Linear Tape File System \(LTFS\) Software | HPE Store US**](#)

HPE StoreOpen Software

HPE StoreOpen Software is a free software application that helps LTFS users to use and manage single tape drives, autoloaders and tape libraries

Available for Windows environments for automation products, it provides a native GUI with a familiar look and feel. It is installed automatically as part of the LTFS package and it completely removes the need for low-level terminal commands by guiding users through the full process of select, prepare and mount an LTFS cartridge.

For more information, including user guide, downloads and compatibility, visit:

[**HPE StoreOpen and Linear Tape File System \(LTFS\) Software | HPE Store Norway**](#)

Library and Tape Tools

The MSL6480 Tape Library is 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.

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For more information on L&TT, please visit: [HPE Library and Tape Tools | HPE Store US](#)

High density storage

Save rack space, floor space, and power and cooling costs with industry leading storage density. Offering 13 cartridge slots per 1U of rack space (or up to 585 TBs per 1U of rack space) using LTO-9 drives, the MSL6480 provides the highest tape drive density per module of any mid-range tape library.

Partitioning

The MSL6480 Tape Library supports up to 20 logical partitions for greater flexibility and higher asset utilization.

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.

LTO-7 Type M media

The MSL6480 Tape Library supports 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.

LTO-9 drives will not be backward compatible with LTO-7 Type M media.

LTO-9 Media Initialization

Media initialization has been implemented in LTO-9 technology to optimize data placement on each LTO-9 cartridge. The initialization enables the tape drive to intelligently align data to a specific tape cartridge. Each new LTO-9 cartridge requires a one-time initialization prior to starting read/write operations. This initialization is only required for the first use of a new LTO-9 cartridge. Subsequent loads do not require additional initialization. The initialization process varies in time depending on the environmental conditions of tape and drive. Most initializations will complete within an hour; however, in some cases it can take up to 2 hours.

To help customers complete this one-time initialization of new LTO-9 media in tape libraries, the MSL6480 provides an "LTO-9 New Media Initialization Wizard" feature which will guide the user through an automated process to load uninitialized media into LTO-9 tape drives to facilitate the completion of the LTO-9 media initialization process. For more information please reference the MSL6480 User Guide.

Proven Reliability

With a rating of 2,000,000 robot load/unload cycles, the MSL Tape Libraries provides necessary high

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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.

HPE MSL6480 Tape Libraries include redundancy features for high availability. Dual power supplies are standard for increased system reliability and uptime.

Longevity

Organizations need to be confident that their data in archive is still there when they need it. LTO tape media is specified with a 30 year shelf life, if stored at the "Archival Life Recommended Storage" conditions. HPE TapeAssure Advanced also analyses the results of every tape use to ensure the availability of data placed in long-term storage, archive or DR.

Safeguarding data for Disaster Recovery

The HPE StoreEver MSL6480 Tape Library can provide the 'last line of defense' for your data.

- Tape is inherently 'offline to threats' - tape's removable media is off-line to the threats from viruses, hackers and cyber-attacks that online data on disk is susceptible to. It is also a logically clean copy that won't be accidentally overwritten by mirroring software.
- LTO-9, LTO-8, and LTO-7 Ultrium tape drives include hardware based data encryption to prevent unauthorized access to data at rest.
- LTO-9, LTO-8, LTO-7, 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-based data encryption features help organizations with compliance to increased data security regulations.

High Availability

To make the most of your library performance, the MSL6480 offers high availability failover capability utilizing LTO-9, LTO-8, and LTO-7 Tape Drives.

LTO-7 + driver-based Data and Control Path Failover (supports LTO-9, LTO-8 and LTO-7 drives)

- LTO-7+ Path Failover supports Data Path and Control Path failover with LTO-9, LTO-8 and LTO-7 drives, unlocking feature-sets with just one license enabled in the library.
- Both Drive paths are active; both ports are green and up in the library and the switch.
- The Driver-Based Failover technology has the failover intelligence in the driver that runs on the server. Drivers on the host perform path and command failover recovery.
- Requires host driver support, in addition to minimal tape drive and library firmware features, to manage multiple paths across multiple SAN. Presents a single drive or library path to applications and automatically transfers commands to the new path if the original path is lost.
- The transfer to the failover path is invisible to most applications, avoiding the need for user intervention.
- The Driver-Based Failover will only present one library path and one drive path to the host for each library or drive that is attached to the host.

If an LTO-9, LTO-8 or LTO-7 drive is enabled for Driver-Based Failover, it can still be seen by hosts with a standard driver even though the Driver-Based Failover will not be functional.

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Data Encryption

The HPE MSL6480 Tape Library offers multiple options for data encryption, depending on the requirements for policy, regulation, compliance, and centralized key management.

- **HPE MSL Encryption Kit**

The HPE 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 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. One of the two tokens will plug into the USB port in the library and will generate and maintain encryption keys for the LTO-9, LTO-8, and LTO-7 drives/libraries. The second token will be used as a backup token and will be used if the first token is lost or damaged. 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.

- **Enterprise Secure Key Manager (ESKM) and KMIP**

The HPE MSL6480 Tape Library is compatible with Hewlett Packard Enterprise's Enterprise Secure Key Manager (ESKM) that provides centralized encryption key management for HPE MSL6480 Tape Libraries. The tape libraries are capable of operation using either the ESKM proprietary protocol or the KMIP 1.2 protocol. One library encryption license will be needed based on the protocol of choice (either ESKM or KMIP).

For more information on all supported key management servers, please visit:

[HPE Storage Single Point of Connectivity Knowledge - SPOCK](#)

Secure Manager License

HPE MSL6480 Secure Manager License is an optional software feature that provides an additional level of security that lets you control access to the tape library by authorizing specific servers to access the library's drives and robotics. Secure Manager increases backup reliability by blocking disruptive traffic from unauthorized hosts to the library, which is one of the main causes of failed or incomplete backups.

- Easily configure device-level SAN access settings
- Allow only authorized servers to access tape drives and critical data
- Manage access control from a single pane of glass, through the library itself
- Paths to robotics can be separated between two independent SANs for isolation purposes

Secure Manager allows you to

- Create host access groups
 - Add and modify host information
 - Map device access to specific hosts
 - Allows a disable feature when switch zoning is desired
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Standard Features

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. The LTO Ultrium specification is an industry standard format; thus data written on HPE Ultrium Tape Drives can be interchanged directly with LTO Ultrium Tape Drives from other vendors.

Investment protection

HPE LTO tape drives and automation products are founded on the LTO open standard and adhere to the published fourteen-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. Ninth-generation LTO Ultrium drives read and write LTO-8 and LTO-9 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-9 Ultrium 45000	101 to 300 MB/s
HPE LTO-8 Ultrium 30750	101 to 300 MB/s
HPE LTO-7 Ultrium 15000	101 to 300 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 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
- 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 generation LTO Ultrium products.

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 Hewlett Packard Enterprise 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 2021, almost one billion meters of media have been pulled and over 40 million gigabytes of data have been written in the Hewlett Packard Enterprise demanding Green Tape Testing (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.

Compatibility

Hewlett Packard Enterprise's extensive compatibility testing program assures that your HPE MSL Tape Libraries work with leading servers, operating systems, and backup software 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 complete and latest list of servers, workstations, operating systems, and backup software that support the MSL tape libraries, reference the HPE StoreEver Compatibility Matrix (Formerly EBS) at:

[HPE Storage Single Point of Connectivity Knowledge - SPOCK](#)

Service and Support

Warranty

Hewlett Packard Enterprise provides a 1-year, next business day onsite, part exchange, limited warranty for the MSL6480 Tape Library and its components including drives, plus 9x5 phone support for the duration of the warranty.

Notes: The HPE MSL6480 Tape Library 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 onsite 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 Support Center for further details: [**Services | HPE**](#) 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.

HPE Services

No matter where you are in your digital transformation journey, you can count on HPE Services to deliver the expertise you need when, where and how you need it. From planning to deployment, ongoing operations and beyond, our experts can help you realize your digital ambitions.

[**Services | HPE**](#)

Consulting Services

No matter where you are in your journey to hybrid cloud, experts can help you map out your next steps. From determining what workloads should live where, to handling governance and compliance, to managing costs, our experts can help you optimize your operations.

[**Advisory and Professional Services | HPE**](#)

HPE Managed Services

HPE runs your IT operations, providing 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.

[**HPE Managed Services | HPE**](#)

Operational services

Optimize your entire IT environment and drive innovation. Manage day-to-day IT operational tasks while freeing up valuable time and resources. Meet service-level targets and business objectives with features designed to drive better business outcomes.

[**Operational Support Services - Technology & IT Support | HPE**](#)

Service and Support

HPE Complete Care Service

HPE Complete Care Service is a modular, edge-to-cloud IT environment service designed to help optimize your entire IT environment and achieve agreed upon IT outcomes and business goals through a personalized experience. All delivered by an assigned team of HPE Services experts. HPE Complete Care Service 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

Complete Care Service | HPE

HPE Tech Care Service

HPE Tech Care Service is the operational support service experience for HPE products. The service 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 Tech Care Service delivers a customer-centric, AI driven, and digitally enabled customer experience to move your business forward. HPE Tech Care Service is available in three response levels. Basic, which provides 9x5 business hour availability and a 2-hour response time. 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.

Tech Care Service | HPE

HPE Lifecycle Services

HPE Lifecycle Services provide a variety of options to help maintain your HPE systems and solutions at all stages of the product lifecycle. A few popular examples include:

- Lifecycle Install and Startup Services: Various levels for physical installation and power on, remote access setup, installation and startup, and enhanced installation services with the operating system.
- HPE Firmware Update Analysis Service: Recommendations for firmware revision levels for selected HPE products, taking into account the relevant revision dependencies within your IT environment.
- HPE Firmware Update Implementation Service: Implementation of firmware updates for selected HPE server, storage, and solution products, taking into account the relevant revision dependencies within your IT environment.
- Implementation assistance services: Highly trained technical service specialists to assist you with a variety of activities, ranging from design, implementation, and platform deployment to consolidation, migration, project management, and onsite technical forums.
- HPE Service Credits: Access to prepaid services for flexibility to choose from a variety of specialized service activities, including assessments, performance maintenance reviews, firmware management, professional services, and operational best practices.

Notes: To review the list of Lifecycle Services available for your product go to: [**Lifecycle Services | HPE**](#)

For a list of the most frequently purchased services using service credits, see the [**HPE Service Credits Menu**](#)

Service and Support

Other Related Services from HPE Services:

HPE Education Services

Training and certification designed for IT and business professionals across all industries. Broad catalogue of course offerings to expand skills and proficiencies in topics ranging from cloud and cybersecurity to AI and DevOps. Create learning paths to expand proficiency in a specific subject. Schedule training in a way that works best for your business with flexible continuous learning options.

<https://www.hpe.com/services/training>

Defective Media Retention

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

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

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.

How to Purchase Services

Services are sold by Hewlett Packard Enterprise 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 services at: <https://ssc.hpe.com/portal/site/ssc/>

AI Powered and Digitally Enabled Support Experience

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

Sign into the HPE Support Center experience, featuring streamlined self-serve case creation and management capabilities with inline knowledge recommendations. You will also find personalized task alerts and powerful troubleshooting support through an intelligent virtual agent with seamless transition when needed to a live support agent at:

[Hewlett Packard Enterprise \(HPE\) - Auth - Sign In-](#)

Consume IT On Your Terms

HPE GreenLake edge-to-cloud platform 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 edge-to-cloud platform 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

To learn more about HPE 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

Service and Support

Contact Us - Hewlett Packard Enterprise - HPE - Contact Sales and Support | HPE

For more information: **Services | HPE**

Configuration Information

Step 1 - Base Configuration

HPE StoreEver MSL6480

Description	SKU
HPE StoreEver MSL6480 Scalable Base Module	QU625A
HPE StoreEver MSL6480 Scalable Expansion Module	QU626A

Notes:

- This product is TAA (Trade Agreements Act) compliant.
- The HPE MSL6480 Tape Library Base and Expansion Modules are 6U rack mountable, 80-slot units. They do not contain any tape drives.

Kit Contents (for each library):

- Two 2.5M PDU Power Cord, C13/C14, 10A
- Rack-mount hardware
- Getting started poster
- Redundant Power Supplies
- Module interconnect cable (expansion module only)

Notes: Redundant Power Supplies are hot-swappable

Factory Racking

Factory integrate MSL6480 Tape Library with other HPE products such as HPE ProLiant Servers	#0D1
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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 LTO Ultrium Tape Drives

Notes: Drive Upgrade Kits are hot-replaceable. The drives should be powered down before removal, but the library doesn't need to be powered down to replace them.

HPE StoreEver LTO-9 Ultrium 45000 FC Drive Kit

HPE StoreEver MSL LTO-9 Ultrium 45000 Fibre Channel Drive Upgrade Kit	R6Q74A
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Notes:

- Half height LTO-9 FC tape drive. For use with the Autoloader, MSL2024, MSL3040 or MSL6480 libraries. Drive kit includes a tape drive and documentation.
- #0D1 will appear after R6Q74A on the sales order if HPE factory integration is indicated
- For tape drives to be integrated into the library, the library must be factory integrated (#0D1) into a rack.
- (2) LC Optical Fiber Channel Connectors
- (1) RJ-45 Ethernet data verification port
- This product is TAA (Trade Agreements Act) compliant.

HPE StoreEver LTO-9 Ultrium 45000 SAS Drive Kit

Configuration Information

HPE StoreEver MSL LTO-9 Ultrium 45000 SAS Drive Upgrade Kit R6Q75A

Notes:

- Half height LTO-9 SAS tape drive. For use with the Autoloader, MSL2024, MSL3040 or MSL6480 libraries. Drive kit includes a tape drive and documentation
- #0D1 will appear after R6Q75A on the sales order if HPE factory integration is indicated
- For tape drives to be integrated into the library, the library must be factory integrated (#0D1) into a rack
- (2) Mini-SAS HD (SFF8644) Connectors
- (1) RJ-45 Ethernet data verification port
- This product is TAA (Trade Agreements Act) compliant.

HPE StoreEver LTO-8 Ultrium 30750 FC Drive Kit

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

Notes:

- Half height LTO-8 FC tape drive. For use with the Autoloader, MSL2024, MSL3040 or MSL6480 libraries. Drive kit includes a tape drive and documentation
- #0D1 will appear after Q6Q67A on the sales order if HPE factory integration is indicated
- For tape drives to be integrated into the library, the library must be factory integrated (#0D1) into a rack
- (2) LC Optical Fiber Channel Connectors
- (1) RJ-45 Ethernet data verification port
- This product is TAA (Trade Agreements Act) compliant.

HPE StoreEver LTO-8 Ultrium 30750 SAS Drive Kit

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

Notes:

- Half height LTO-8 SAS tape drive. For use with the Autoloader, MSL2024, MSL3040 or MSL6480 libraries. Drive kit includes a tape drive and documentation
- #0D1 will appear after Q6Q68A on the sales order if HPE factory integration is indicated
- For tape drives to be integrated into the library, the library must be factory integrated (#0D1) into a rack
- (2) Mini-SAS (SFF8644) Connectors
- (1) RJ-45 Ethernet data verification port
- This product is TAA (Trade Agreements Act) compliant

HPE StoreEver LTO-7 Ultrium 15000 FC Drive Kit

Configuration Information

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

N7P36A

- Notes:**
- Half height LTO-8 FC tape drive. For use with the Autoloader, MSL2024, MSL3040 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
 - For tape drives to be integrated into the library, the library must be factory integrated (#0D1) into a rack
 - (2) LC Optical Fiber Channel Connectors
 - (1) RJ-45 Ethernet data verification port
 - This product is TAA (Trade Agreements Act) compliant.

HPE StoreEver LTO-7 Ultrium 15000 SAS Drive Kit

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

N7P37A

- Notes:**
- Half height LTO-8 FC tape drive. For use with the Autoloader, MSL2024, MSL3040 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
 - For tape drives to be integrated into the library, the library must be factory integrated (#0D1) into a rack
 - (2) Mini-SAS (SFF8644) Connectors
 - (1) RJ-45 Ethernet data verification port
 - This product is TAA (Trade Agreements Act) compliant.

Step 3 - Select Software Licenses

Select each option as required with quantities specified

HPE StoreEver MSL6480 Command View TL LTU (1 each)

Description	SKU
HPE StoreEver MSL6480 Command View TL LTU	TC444A

Notes: This is a paper license that will be mailed.

HPE StoreEver MSL6480 Command View TL E-LTU (1 each)

HPE StoreEver MSL6480 Command View TL E-LTU	TC444AAE
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Notes: This is an electronically delivered License.

HPE StoreEver MSL6480 CVTL TapeAssure Advanced LTU (1 each)

HPE StoreEver MSL6480 Command View for Tape Libraries - TapeAssure Advanced LTU	TC445A
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Configuration Information

Notes:

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

HPE StoreEver MSL6480 CVTL TapeAssure Advanced E-LTU (1 each)

HPE StoreEver MSL6480 Command View for Tape Libraries - TapeAssure Advanced E-LTU TC445AAE

Notes:

- One license needed per library and Command View TL must be installed.
- This is an electronically delivered License.

HPE StoreEver MSL6480 CVTL Data Verification Software LTU (1each)

HPE StoreEver MSL6480 Command View for Tape Libraries - Data Verification 100 Cartridges LTU TC443A

Notes:

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

HPE StoreEver MSL6480 CVTL Data Verification Software E-LTU (1each)

HPE StoreEver MSL6480 Command View for Tape Libraries - Data Verification 100 Cartridges E-LTU TC443AAE

Notes:

- One license needed per library and Command View TL must be installed.
- This is an electronically delivered License.

HPE StoreEver MSL6480 ESKM Encryption LTU (1 each)

HPE StoreEver MSL6480 ESKM Encryption LTU TC469A

Notes:

- The ESKM Encryption License will enable encryption keys to be received from the HPE ESKM for strong data encryption and key management. One per library is required (regardless of Expansion Module qty)
- This is a paper license that will be mailed.

Configuration Information

HPE StoreEver MSL6480 ESKM Encryption E-LTU (1 each)	
Description	SKU
HPE StoreEver MSL6480 ESKM Encryption E-LTU	TC469AAE
Notes:	
– The ESKM Encryption License will enable encryption keys to be received from the HPE ESKM. One per library is required (regardless of Expansion Module qty).	
– This is an electronically delivered License.	
 HPE StoreEver MSL6480 KMIP 1.2 Key Manager LTU (1 each)	
HPE StoreEver MSL6480 KMIP 1.2 Key Manager LTU	D4T76A
Notes: This is a paper license that will be mailed.	
 HPE StoreEver MSL6480 KMIP 1.2 Key Manager E-LTU (1 each)	
HPE StoreEver MSL6480 KMIP 1.2 Key Manager E-LTU	D4T76AAE
Notes: This is an electronically delivered License.	
 HPE StoreEver MSL6480 Secure Manager LTU (1 each)	
HPE StoreEver MSL6480 Secure Manager LTU	D4T75A
Notes: This is a paper license that will be mailed.	
 HPE StoreEver MSL6480 Secure Manager E-LTU (1 each)	
HPE StoreEver MSL6480 Secure Manager E-LTU	D4T75AAE
Notes: This is an electronically delivered License.	
 HPE StoreEver MSL6480 LTO-7+ Path Failover LTU (1 each)	
HPE StoreEver MSL6480 LTO-7 Ultrium Path Failover LTU	P9H33A
 HPE StoreEver MSL6480 LTO-7+ Path Failover E-LTU (1 each)	
HPE StoreEver MSL6480 LTO-7 Ultrium Path Failover E-LTU	P9H33AAE

Step 4 - Select Additional Options from the next section.

Additional Options

Power Cords

Description

SKU

HPE C13 - C14 WW 250V 10Amp 2.5m Jumper Cord

142257-002

Notes: This cord ships standard with each MSL Tape Library; can be used to connect the rack-mounted device to PDUs with IEC-320 receptacles.

Quantity 2 each

Quantity to order

Regional Power Cord Options

Notes: Two PDU cords are shipped with each module (above). If regional power cords are preferred, order qty (2) per module. One for each power supply that ships with the library; please select the correct power cord for your geographical location.

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: 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 capacity 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.

Factory Racking

Factory integrate the MSL Tape Libraries with other Hewlett Packard Enterprise 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. One Base Module and up to 6 Expansion Modules can be factory integrated up to 42U in a single rack.

Encryption

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

AM495A

Additional Options

Notes: The Encryption Kit key server token will generate and retain encryption keys for HPE LTO- 4 and later generation Ultrium tape drives in the library. Works independent of application or backup software; doesn't require ISV support.

Description

HPE StoreEver MSL6480 ESKM Encryption LTU

SKU

TC469A

Notes:

- The ESKM Encryption License will enable encryption keys to be received from the HPE ESKM for strong data encryption and key management. One per library is required (regardless of Expansion Module quantity)
- This is a paper license that will be mailed.

HPE StoreEver MSL6480 ESKM Encryption E-LTU

TC469AAE

Notes:

- The ESKM Encryption License will enable encryption keys to be received from the HPE ESKM. One per library is required (regardless of Expansion Module quantity)
- This is an electronically delivered license.

HPE StoreEver MSL6480 KMIP 1.2 Key Manager LTU

D4T76A

Notes: This is a paper license that will be mailed.

HPE StoreEver MSL6480 KMIP 1.2 Key Manager E-LTU

D4T76AAE

Notes: This is an electronically delivered license.

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) located at:

HPE Storage Single Point of Connectivity Knowledge - SPOCK .

For more information on FC HBAs, see HPE StoreFabric Adapters at: **HPE Storage Area Networking Solutions | HPE.**

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) located at:

HPE Storage Single Point of Connectivity Knowledge - SPOCK

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

For more information on HPE ProLiant (SAS) host bus adapters, see H-class HBA controllers at: **Smart Array Controllers and Smart Host Bus Adapters | HPE Store US**

HBAs and SAS Controllers

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.

Additional Options

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.

– Recommended for ProLiant Gen9 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.

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	N/A
OM3/OM4	All drive types	0.5m - 500m	0.5m - 380m	0.5m - 150m

Cable Kits (SAS)

HPE External 2.0m (6ft) Mini-SAS HD 4x to Mini-SAS HD 4x Cable

716197-B21

Notes: One cable is required for every LTO-9 tape drive. Use this cable to connect HPE MSL SAS Tape Libraries to Storage HBAs with Mini SAS High Density (HD) SAS (SFF8644) ports.

HPE External 4.0m (13ft) Mini-SAS HD 4x to Mini-SAS HD 4x Cable

716199-B21

Notes: One cable is required for every LTO-9 tape drive. Use this cable to connect HPE MSL SAS Tape Libraries to Storage HBAs with Mini SAS High Density (HD) SAS (SFF8644) ports..

HPE External 12Gb Mini SAS High Density to Mini SAS High Density 4-lane 2m Fanout Cable

P35176-B21

Notes: One cable can connect up to four LTO-9 tape drives. Use this cable to connect HPE MSL SAS Tape Libraries to Storage HBAs with Mini SAS High Density (HD) SAS (SFF8644) ports.

HPE External 12Gb Mini SAS High Density to Mini SAS High Density 4-lane 4m Fanout Cable

P35175-B21

Notes: One cable can connect up to four LTO-9 tape drives. Use this cable to connect HPE MSL SAS Tape Libraries to Storage HBAs with Mini SAS High Density (HD) SAS (SFF8644) ports.

HPE 2.0m External Mini SAS High Density to Mini SAS Cable

716191-B21

Additional Options

Notes: One cable is required for every (non LTO-9) tape drive. Use this cable to connect HPE MSL SAS Tape Libraries to Storage HBAs with Mini SAS High Density (HD) SAS (SFF8644) ports.

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

Notes: One cable is required for every (non LTO-9) tape drive. Use this cable to connect HPE MSL SAS Tape Libraries to Storage HBAs with Mini SAS High Density (HD) SAS (SFF8644) ports

HPE StoreEver Mini-SAS High Density to 4-lane Mini-SAS External Fanout 2m Cable K2R09A

Notes: One cable can connect up to four (non LTO-9) tape drives. Use this cable to connect HPE MSL SAS Tape Libraries to Storage HBAs with Mini SAS High Density (HD) SAS (SFF8644) ports.

HPE StoreEver Mini-SAS High Density to 4-lane Mini-SAS External Fanout 4m Cable K2R10A

Notes: One cable can connect up to four (non LTO-9) tape drives. Use this cable to connect HPE MSL SAS Tape Libraries to Storage HBAs with Mini SAS High Density (HD) SAS (SFF8644) ports

Description

SKU

HPE StoreEver 2m External Mini-SAS to 4x1 Mini-SAS Cable AN975A

Notes: One cable can connect up to four (non LTO-9) tape drives. Use this cable to connect HPE MSL SAS Tape Libraries to Storage HBAs with Mini SAS (SFF8088) ports.

HPE StoreEver 4m External Mini-SAS to 4x1 Mini-SAS Cable AN976A

Notes: One cable can connect up to four (non LTO-9) tape drives. Use this cable to connect HPE MSL SAS Tape Libraries to Storage HBAs with Mini SAS (SFF8088) ports.

Media

HPE LTO-9 Ultrium 45TB RW Data Cartridge Q2079A

HPE LTO-9 Ultrium 45TB RW 960 Data Cartridge Pallet without Cases Q2079AB

HPE LTO-9 Ultrium 45TB RW 960 Data Cartridge Pallet with Cases Q2079AD

HPE LTO-9 Ultrium 45TB RW 20 Data Cartridges Library Pack without Cases Q2079AH

HPE LTO-9 Ultrium 45TB WORM Data Cartridge Q2079W

HPE LTO-9 Ultrium 45TB WORM Custom Labeled 20 Data Cartridges with Cases Q2079WL

HPE LTO-8 Ultrium 30TB RW Data Cartridge Q2078A

HPE LTO-8 Ultrium 30TB RW 960 Data Cartridge Pallet without Cases Q2078AB

HPE LTO-8 Ultrium 30TB RW 960 Data Cartridge Pallet with Cases Q2078AD

HPE LTO-8 Ultrium 30TB RW 20 Data Cartridges Library Pack without Cases Q2078AH

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 BaFe RW Data Cartridge C7976B

HPE LTO-6 Ultrium 6.25TB BaFe WORM Data Cartridge C7976BW

HPE LTO-6 Ultrium 6.25TB WORM Data Cartridge C7976W

HPE LTO-5 Ultrium 3TB RW Data Cartridge C7975A

Bar Code Labels

Additional Options

HPE LTO-9 Ultrium RW Bar Code Label Pack	Q2017A
HPE LTO-8 Ultrium RW Bar Code Label Pack	Q2015A
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

Non-Custom Labeled Data Cartridges

Notes: Non-Custom labels will come pre-labeled with a pre-determined number sequence.

HPE LTO-9 Ultrium 45TB RW Non Custom Labeled 20 Data Cartridges with Cases	Q2079AN
HPE LTO-8 Ultrium 30TB RW Non Custom Labeled Library Pack 20 Data Cartridges with Cases	Q2078AN
HPE LTO-7 Ultrium RW No Case Custom Labeled Data Cartridge 20 Pack	C7977AC

Description**SKU**

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-9 Ultrium 45TB RW Custom Labeled Library Pack 20 Data Cartridges without Cases	Q2079AC
HPE LTO-9 Ultrium 45TB RW Custom Labeled 20 Data Cartridges with Cases	Q2079AL
HPE LTO-8 Ultrium 30TB RW Custom Labeled Library Pack 20 Data Cartridges with Cases	Q2078AL
HPE LTO-8 Ultrium 30TB WORM Custom Labeled 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 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-6 Ultrium 6.25TB RW Custom Labeled 20 Data Cartridges Library Pack without Cases	C7976AC
HPE LTO-5 RW Custom Labeled Data Cartridge 20 Pack	C7975AL
HPE LTO-5 RW Custom Labeled No Case Data Cartridge 20 Pack	C7975AC

Notes: For more information on LTO media, see:

Storage Media | HPE Store US

HPE Support Service Options**Hardware Services**

HPE StoreEver MSL3040/6480 Base Module Installation and Startup Service	U8E80E
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Notes: 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

MSL6480		
Drive Technology	LTO-9 Ultrium 45000 LTO-8 Ultrium 30750 LTO-7 Ultrium 15000	
Maximum Number of Drives	6 HH (per Module) 42 HH (per Library)	
- Per Module		
- Per fully expanded Library		
Number of Slots	80 (per Module) 560 (per Library)	
- Per Module		
- Per fully expanded Library		
Drive Interface	8 Gb Native Fibre Channel 12 Gb/sec SAS (LTO-9) 6 Gb/sec SAS (LTO-8 and earlier)	
Maximum Capacity	Native	1.44 PB (LTO-9, 80 slots)
	- Per Module	960 TB (LTO-8, 80 slots) 480 TB (LTO-7, 80 slots)
	- Per Library	10.08 PB (LTO-9, 560 slots) 6.72PB (LTO-8, 560 slots) 3.36 PB (LTO-7, 560 slots) 1
	Compressed (2.5:1)	3.6 PB (LTO-9, 80 slots)
	- Per Module	2.4 PB (LTO-8, 80 slots) 1.2 PB (LTO-7, 80 slots)
	- Per Library	25.2 PB (LTO-9, 560 slots) 16.8 PB (LTO-8, 560 slots) 8.4 PB (LTO-7, 560 slots)
	Native	6.48 TB/hour (with 6 LTO-9 drives)
	- Per Module	6.48 TB/hour (with 6 LTO-8 drives) 6.48 TB/hour (with 6 LTO-7 drives)
Maximum Transfer Rate	- Per Library	45.4 TB/hr (with 42 LTO-9 drives) 45.4 TB/hr (with 42 LTO-8 drives) 45.4 TB/hr (with 42 LTO-7 drives)
	Compressed (2.5:1)	Up to 20.64 TB/hr (with 6 LTO-9 drives)
	- 6 HH drives Per Module	Up to 20.64 TB/hr (with 6 LTO-8 drives) Up to 20.64 TB/hr (with 6 LTO-7 drives)
	- 42 HH drives Per Library	Up to 144.9 TB/hr (with 42 LTO-9 drives) Up to 144.9 TB/hr (with 42 LTO-8 drives) Up to 144.9 TB/hr (with 42 LTO-7 drives)

Technical Specifications

MSL6480		
Dimensions	Out-of-Box (HxWxD)	10.55 X 18.7 X 35.1 in (26.8 x 47.5 x 89.2 cm)
	Shipping (HxWxD)	24.2 X 31.5 X 47.2 in (61.5 x 80.0 x 120.0 cm)
Weight	Out of box	Base Module 90.2 lbs (41 kg) Expansion Module 80..3 lbs (36.5 kg) Drives (either FC or SAS, LTO-7 thru 9) 5 lbs (2kg)
	Shipping	120.1 lbs (54.5 kg)
	Notes: The weight of each library varies based on the number of modules and number of LTO tape drives contained in the configuration. Configurations with different numbers of modules and tape drives can be calculated by adding or subtracting the corresponding weights .	
Reliability	MTBF (mean time between failures)	100,000 hours (based on 1M MSBF)
	MSBF (Mean swaps before failure)	2,000,000
Average Cartridge Swap Time (drive to slot, slot to drive)	40 seconds (Base Unit)	
Initialization Time	77 to 204 seconds (Up to LTO-8) For LTO-9 see LTO-9 media initialization section	
Inventory Time	1:10 minutes (minimum) to 1:26minutes (maximum) Base unit	
Connectors	Drive: (2) Mini-SAS (MSL SAS LTO-8 and earlier models only) (2) Mini-SAS HD (MSL SAS LTO-9 model only) (2) LC Optical Fibre (MSL FC models only) (1) RJ-45 Ethernet data verification port Library: (1) RJ-45 data verification port (1) RJ-45 remote library management port (2) USB ports (supports USB encryption kit or support/maintenance functions)	
Operator Control Panel (front panel)	Color, 5.7 inch diagonal, resistive touchscreen, full VGA , 4/3 aspect ratio	
Management Interface	10Base-T, 100Base-TX and 1000BASE-T Mbits/second, auto-configuring interface. RJ-45 connection. Https configurable.	
Power	200 Watts (max)	
Input Requirements	100-120V, 200-240 VAC, 3.5 to 1.5 Amperes, 50 to 60 Hz	
Relative Humidity (non-condensing)	Operating	20% to 80%
	Shipping	10% to 90%
Temperature Range (wet bulb)	Operating (LTO-7 & LTO-8)	50° to 95° F (10° to 35° C)
	Operating (LTO-9)	59° to 89° F (15° to 32° C)
	Shipping	-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 (3,962 m)
	Shipping	35,000 ft (10,675 m)

Summary of Changes

Date	Version History	Action	Description of Change
15-Jul-2024	Version 45	Changed	Overview, Standard Features, Service and Support, Configuration Information and Additional Options sections were updated
06-May-2024	Version 44	Changed	Standard Features, Additional Options and Technical Specifications sections were updated Obsolete SKUs removed
22-Jan-2024	Version 43	Changed	Standard Features, Service and Support, Additional Options and Technical Specifications sections were updated
04-Dec-2023	Version 42	Changed	HPE Services Rebranding
18-Sep-2023	Version 41	Changed	Technical Specifications section was updated
07-Aug-2023	Version 40	Changed	Standard Features, Service and Support, Additional Options and Technical Specifications sections were updated
24-Jul-2023	Version 39	Changed	Overview, Standard Features, Service and Support, Configuration Information and Additional Options sections were updated
06-Feb-2023	Version 38	Changed	Service and Support section was updated
05-Dec-2022	Version 37	Changed	Additional Options section was updated.
03-Oct-2022	Version 36	Changed	Configuration Information, Additional Options and Technical Specifications sections were updated.
18-Apr-2022	Version 35	Changed	Technical Specifications section was updated
07-Feb-2022	Version 34	Changed	Overview, Standard Features and Configuration Information sections were updated.
10-Jan-2022	Version 33	Changed	Overview, Standard Features, Configuration Information and technical Specifications sections were updated.
15-Sep-2021	Version 32	Changed	Standard Features and Service and Support sections were updated.
07-Jun-2021	Version 31	Changed	Standard Features section was updated.
17-May-2021	Version 30	Changed	Overview, Standard Features, Configuration Information and technical Specifications sections were updated.
07-Dec-2020	Version 29	Changed	Configuration Information section was updated.
05-Oct-2020	Version 28	Changed	Configuration Information section was updated.
17-Aug-2020	Version 27	Changed	Standard Features and Configuration Information sections were updated.
09-Dec-2019	Version 26	Changed	Configuration Information and Additional Options sections were updated.
03-Jun-2019	Version 25	Changed	Overview section was updated.
15-Apr-2019	Version 24	Changed	Core Options section was updated.
04-Mar-2019	Version 23	Changed	Additional Options section was updated.
01-Oct-2018	Version 22	Changed	Product Highlights section was updated. SKU descriptions were updated.
04-Jun-2018	Version 21	Changed	Notes for the HPE StoreEver MSL6480 Scalable Expansion Module were revised.
05-Mar-2018	Version 20	Changed	Product Highlights and Related Options were revised.
05-Feb-2018	Version 19	Changed	Overview, Product Highlights, Related Options, and Technical Specifications were revised.
04-Dec-2017	Version 18	Changed	LTO-8 updates.
04-Sep-2017	Version 17	Changed	Changes made throughout all the document.
07-Aug-2017	Version 16	Changed	Changes made to the Product Highlights Section.
13-Jan-2017	Version 15	Changed	Changes to the HPE StoreEver Archive Manager section.
18-Nov-2016	Version 14	Changed	Added the HPE StoreEver Archive Manager in the Product Highlights section.
15-Aug-2016	Version 13	Changed	Changes made to the Configuration Section.
01-Jul-2016	Version 12	Changed	Cosmetic changes.

Summary of Changes

31-Mar-2016	Version 11	Changed	HPE rebranding, LTO-7 capacity updates, part no corrections.
15-Jan-2016	Version 10	Changed	Updated content and edited. LTO-7 Support added.
01-Dec-2015	Version 9	Changed	Changes made throughout all the document.

Date	Version History	Action	Description of Change
24-Apr-2015	Version 8	Changed	Changed from "The HPE StoreEver MSL Encryption Kit provides a self-contained solution for MSL libraries with additional software, PCs, or servers required or involved." To show as: "The HPE StoreEver MSL Encryption Kit provides a self-contained solution for MSL libraries without additional software, PCs, or servers required or involved."
31-Oct-2014	Version 7	Changed	Changes made throughout all the document.
15-Sep-2014	Version 6	Changed	Changes made to the Related Options section.
20-Aug-2014	Version 5	Changed	Changes made throughout all the document.
10-Jun-2014	Version 4	Changed	What's new section was updated: Product highlights; sku description updated Configuration information
20-Dec-2013	Version 3	Changed	Changes made to the chart in the Overview section. Changes made throughout the Configuration Information.
30-Sep-2013	Version 2	Changed	Changes made to the What's New section: HPE StoreEver MSL6480 now supporting HPE Enterprise Secure Key Manager (ESKM). Protect against connectivity failover through Control Path and Data Path failover now on the MSL6480. Increase library uptime by providing library LUN control failover and drive port to port failover Tape Library. Changes made in the Product Highlights section. Changes made in the Configuration Information. Changes made in the Related Options section and in the Technical Specifications.
10-Jun-2013	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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