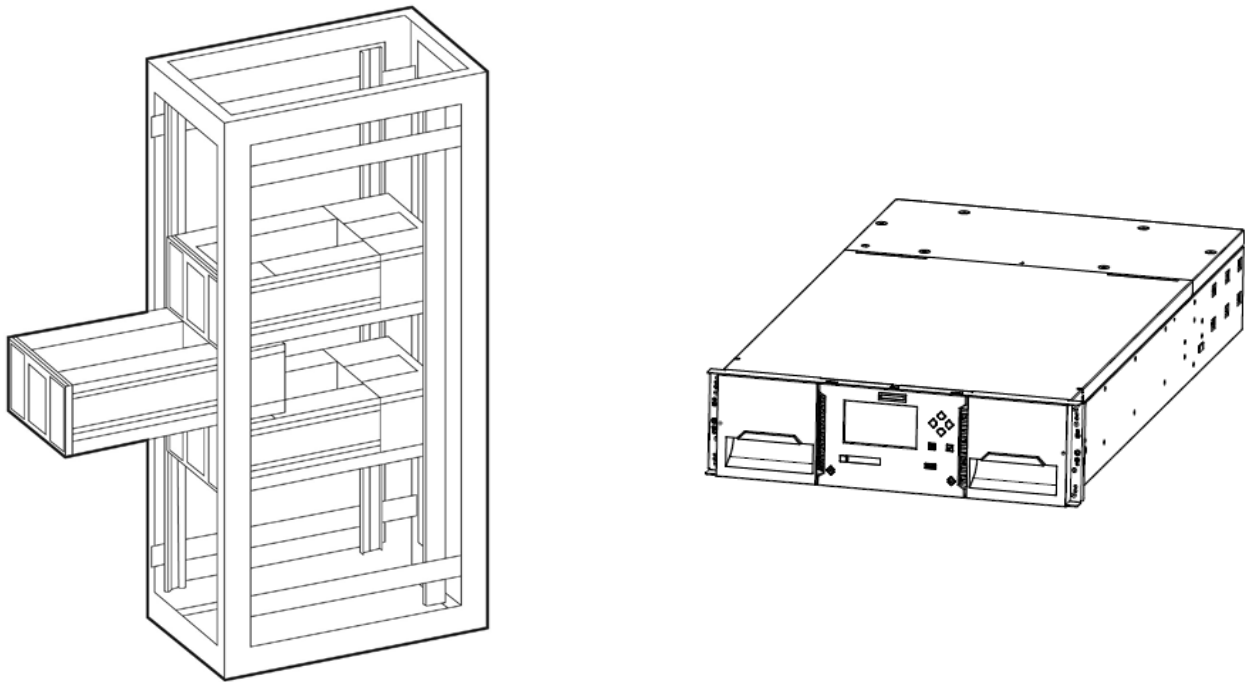


### Overview

#### HPE StoreEver MSL3040 Tape Library

The highly scalable HPE StoreEver MSL3040 Tape Library provides small to mid-sized organizations with flexibility for long-term data protection and retention of data storage assets. With its modular design and ability to reuse existing HPE MSL LTO upgrade drive kits, you can cost-effectively store up to 4.08 PB compressed with LTO-7 media. The HPE StoreEver MSL3040 Tape Library offers exceptional enterprise features and functionality as standard providing advanced security features and reliability. It delivers a tape storage solution that addresses backup and long-term data management challenges such as storing medical records, video surveillance files or for business compliance.



#### HPE StoreEver MSL3040 Tape Library

Industry leading scalability - from 32-slot Base Library Module to 272 slots in a 21U Rack with 6 Expansion Modules

### What's New

- New MSL3040 tape library with support for LTO-7 and LTO-6 FC and SAS drive upgrade kits and media

## Overview

### Key Features

- High scalability - pay as you grow with the fast, non-disruptive addition of Expansion Modules for expansion of tape slots.
  - Start with a 32-slot 3U form-factor Base Library Module, and add up to 6 Expansion Library Modules for a total of 272 slots in a 21U rack form factor
  - 4.08PB of total maximum capacity with 272 slots and LTO-7 drives
  - Performance scaling from 1 to 21 LTO HH Tape Drives and transfer rates of up to 300 MB/s per LTO-7 Tape Drive native.
- Cost Effective tape solution
  - Existing customers of MSL2024, 4048, and 6480 Tape Libraries can repurpose their existing LTO-7 and LTO-6 drives in the new MSL3040 to leverage their investment
  - Industry leading storage density to save rack space, floor space, power, cooling and management costs –13 cartridge slots (195 TB) per 1U of rack space
  - Great flexibility with up to 21 logical library partitions
  - Customer installable, scalable and serviceable
- Enterprise-class manageability and reliability
  - Manage multiple HPE Tape Libraries from a single pane of glass with HPE StoreEver Command View for Tape Libraries software. Download for free at: <http://www.hpe.com/storage/downloads/cvtl>
  - Intelligent, proactive and predictive reporting with HPE StoreEver TapeAssure Advanced
- Advanced security features
  - Using the HPE Encryption Kit get the simplest, lowest cost encryption and key management solution available - no additional software required
  - HPE Secure Manager License provides an additional level of security that lets you control access to the tape library by authorizing specific servers
  - Achieve higher levels of availability with data path failover and control path failover.

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### MSL3040

<b>Drive Technology Supported</b>	LTO-7 Ultrium 15000 LTO-6 Ultrium 6250
<b>Maximum Number of Drives</b>	21 HH
<b>Maximum Capacity (2.5:1 compression)</b>	480 TB (LTO-7, 32 slots) 4.08 PB (LTO-7, 272 slots)
<b>Maximum Data Transfer (Native)</b>	22.5 TB/hr (21 LTO-7 drives)
<b>Drive Interface</b>	8 Gb/sec Fibre Channel 6 Gb/sec SAS

## Product Highlights

### High Scalability

Keep pace with data growth across the lifecycle with the MSL3040's 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.

The modular design of the MSL3040 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 32 to 272\* cartridge slots to store up to 4.08PB\*\* in a single 19-inch rack. Several drive options are available

- Add between 1 and 21 HPE StoreEver LTO-7 Ultrium 15000 and LTO-6 Ultrium 6250 FC or SAS tape drives

Scaling up with the MSL3040 couldn't be easier:

- Start with an empty Base Library
- Add a redundant power supply if required\*\*\*
- Add between 1 and 3 LTO-7 or LTO-6 half-height tape drives and utilize up to 32 cartridge slots - a fully configured base unit with LTO-7 provides a max capacity of up to 480TB (assuming 2.5:1 compression)
- Then add between 1 and 6 empty expansion modules to the Base Library - each 3U expansion module might require a power supply if further drives are to be installed in the expansion. Redundant power supply needs to be added if required\*\*\*.
- Expansion modules can be flexibly installed above or below the base library module\*.
- You can then configure each expansion module with up to 3x LTO-7, or LTO-6 FC or SAS tape drives and utilize up to 40 cartridge slots per expansion module\*

#### NOTE:

\*The lowest 8 slots of the library, whether part of the base library or an expansion, are inaccessible. An expansion unit adds 40 slots to the base unit. If an expansion is installed underneath the base unit the lowest 8 slots of the expansion unit become inaccessible.

\*\*Assumes fully loaded with LTO-7 media cartridges at a 2.5:1 data compression ratio

\*\*\*Extra power supplies need to be factory integrated in order to be TAA compliant

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### Cost Effective Tape Solution

Existing customers of MSL2024, 4048, and 6480 Tape Libraries can repurpose their existing LTO-7 and LTO-6 drives in the new MSL3040 to leverage their investment

Expansion modules are customer-installable; easy to configure and remove.

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

Save rack space, floor space, and power and cooling costs with industry leading storage density. The MSL3040 offers 13 cartridge slots per 1U of rack space providing up to 195 TBs per 1U of rack space using LTO-7 drives.

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### Partitioning

The MSL3040 Tape Library supports up to 21 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.

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### Management Console

The HPE StoreEver MSL3040 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

## Product Highlights

management tool include:

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

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### HPE Command View for Tape Libraries

HPE Command View for Tape Libraries Software (CVTL) is a single pane of glass management platform which allows users to manage, monitor and configure all of their tape libraries through a single console. It saves time by performing daily management and troubleshooting tasks from one location. CVTL also provides remote management, diagnostics and configuration for all MSL Tape Libraries from across the room or across the globe.

Key features include:

- View health summaries for the entire library environment
- View library & autoloader utilization by slots, media, and drives
- Search for media by barcode label
- Upgrade firmware for all libraries in an entire library environment
- View persistent event logs & drive support tickets for an entire library environment

Command View for Tape Libraries is also the centralized location for TapeAssure Advanced & Data Verification functionality.

HPE StoreEver Command View for Tape Libraries can be downloaded for free from:

[\*\*http://www.hpe.com/storage/downloads/cvtl\*\*](http://www.hpe.com/storage/downloads/cvtl)

More information on Command View for Tape Libraries is available at:

[\*\*http://www.hpe.com/storage/cvtl\*\*](http://www.hpe.com/storage/cvtl)

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### HPE TapeAssure Advanced

The HPE StoreEver MSL3040 Tape Library is available with HPE StoreEver TapeAssure Advanced - analytics software with automated, predictive monitoring of health and performance of tape drives and cartridges. TapeAssure Advanced reporting and analysis allows users to get the most out of their investment by knowing how their library is being used. HPE StoreEver TapeAssure Advanced Software is fully integrated with HPE StoreEver Command View for Tape Libraries to provide an intuitive, easy to use dashboard for analysis of performance, health and utilization of tape drives and cartridges.

TapeAssure Advanced analytics features makes use of predictive forecasting to anticipate the likelihood of bottlenecks, failures and load balancing issues in the tape library environment. Analysis of drive/tape utilization helps users to understand available capacity and performance which helps to plan ahead.

For more information about TapeAssure Advanced, please visit

[\*\*http://www.hpe.com/storage/tapeassure\*\*](http://www.hpe.com/storage/tapeassure)

**NOTE:** HPE StoreEver TapeAssure Advanced Software is licensed by tape library; one license is required for each tape library.

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### HPE Data Verification

HPE StoreEver Data Verification Software proactively validates and scans, non-disruptively, the quality of data stored LTO tape cartridges. Scanning and validating infrequently accessed tapes ensures a

## Product Highlights

successful restore is possible when critical business data is needed. StoreEver Data Verification Software is fully integrated into the HPE StoreEver Command View for Tape Libraries Software providing a single pane of glass management platform.

Key Features:

- Scan infrequently accessed LTO tapes to verify health of tape cartridges as well as the data stored on those tapes.
  - o Improve reliability and reduce the risk of restore failure
- Scanning without interrupting host applications.
- Protect all tape cartridges, active and vaulted archived media, with the same license (per 100 cartridge slots)
- Receive proactive notification for needed media migration
- Fully integrated with Command View for Tape Libraries

Business Benefits:

- Ensures critical business data can be restored when most needed
- **High Availability** - No impact to backup operations
- **Ease of Use** - Single license for 100 cartridge slots
- **Save Money** - Migrate data only when necessary

For more information about Data Verification, please visit

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

**NOTE:** HPE StoreEver Data Verification Software is only supported and licensed on the MSL3040 & MSL6480 tape libraries. One license is required per 100 cartridge slots.

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### HPE Library and Tape Tools

The MSL3040 Tape Library is supported with HPE Library and Tape Tools (L&TT). L&TT is a free diagnostic tool for all of HPE's 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.

HPE Library & Tape Tools can be downloaded from the following location:

<http://www.hpe.com/storage/downloads/tapetools>

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

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### Safeguarding data for Disaster Recovery

The HPE StoreEver MSL3040 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-7 and LTO-6 Ultrium tape drives include hardware based data encryption to prevent unauthorized access to data at rest.
- LTO-7 and LTO-6 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.

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### Data Encryption

The HPE MSL3040 Tape Library offers multiple options for data encryption, depending on the requirements for policy, regulation, compliance, and centralized key management.

## Product Highlights

Protect the confidentiality and integrity of your data:

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, which 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.

Protect critical data across an enterprise:

The HPE MSL3040 is capable of operation using the KMIP 1.2 protocol. One library encryption license will be needed based on the KMIP protocol.

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

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

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**Secure Manager License** HPE MSL3040 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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## 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
- 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-generation and later LTO Ultrium products

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## Product Highlights

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### High Availability

To make the most of your library performance, the MSL3040 offers high availability failover capability utilizing LTO-7 and LTO-6 Tape Drives.

- **Driver-based Data Path Failover (supports LTO-6 drives)**
  - This feature requires the HPE StoreEver MSL3040 High Availability LTO-6 Data Path Failover License.
  - SAN wide failure protection.
  - Both ports are connected and both are active but the driver selects between them and uses them one at a time.
  - If a link breaks anywhere between the host and the drive, the host side driver switches to another path and recovers outstanding commands.
  - Drivers handle errors before applications see them.
  
- **Driver-based Control Path Failover (supports LTO-6 drives)**
  - This feature requires the HPE StoreEver MSL3040 High Availability LTO-6 Control Path Failover License.
  - SAN wide failure protection.
  - Both the Control Path (CP) drive and the Control Path Failover (CPF) drive are accessible from the same hosts.
  - If the Control Path drive is lost, the library activates the Control Path Failover drive and the host-based drivers find the robot on the new path.
  - Drivers will handle errors before applications see them.
  
- **LTO-7 + driver-based Data and Control Path Failover (supports LTO-7 and later drives):**
  - LTO-7+ Path Failover supports Data Path and Control Path failover, 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-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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### 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 HPE 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 HPE's 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, HPE's '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 HPE's 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

## Product Highlights

and maximum dependability is to use HPE-branded Ultrium cartridges at all times.

### 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.

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

### 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

HP LTO-7 Ultrium 15000  
HPE LTO-6 Ultrium 6250

#### ATS data transfer rate range (native)

101 to 300 MB/s  
54 to 160 MB/s

### 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 in normal ambient 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.

### 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.

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. Seventh generation LTO Ultrium drives read and write LTO -7 and LTO-6 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.

### 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.



## Product Highlights

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 : <https://software.microfocus.com/en-us/software/data-protector>

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## 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 Data Agile DAPR Compatibility Matrix (Formerly EBS) at:

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

## Service and Support and Warranty Information

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

**Connect your devices**      Unlock all of the benefits of your technology investment by connecting your products to HP Enterprise. Achieve up to 77%<sup>1</sup> reduction in down time, near 100%<sup>2</sup> diagnostic accuracy and a single consolidated view of your environment. By connecting, you will receive 24x7 monitoring, 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.  
 1- IDC  
 2 - HP CSC reports 2014 - 2015

## Recommended Services

**Optimized Care**      **HPE Proactive Care\* with 24x7 coverage, three year Support Service + 20 Services credits**  
 HPE Proactive Care gives customers an enhanced call experience plus helps preventing problems and maintains IT stability by utilizing personalized proactive reports with recommendations and advice when your products are connected to HPE. This Service combines three years' proactive reporting and advice with our 24x7 coverage, four hour hardware response time when there is a problem.  
<https://www.hpe.com/h20195/v2/GetPDF.aspx/4AA3-8855ENW.pdf>

**Standard Care**      **HPE Proactive Care\* with 24x7 coverage, three year Support Service + 10 Services credits**  
 HPE Proactive Care gives customers an enhanced call experience plus helps preventing problems and maintains IT stability by utilizing personalized proactive reports with recommendations and advice when your products are connected to HPE. This Service combines three years' proactive reporting and advice with our 24x7 coverage, four hour hardware response time when there is a problem.  
<https://www.hpe.com/h20195/v2/GetPDF.aspx/4AA3-8855ENW.pdf>

**Basic Care**      **HPE Foundation Care 24x7, three-year Support Service**  
 HPE Foundation Care 24x7 gives you access to HPE 24 hours a day, seven days a week for assistance on resolving issues. This service includes need based Hardware onsite response within four hours. Simplify your support experience and make HPE your first call to help resolve hardware or software problems.  
<https://www.hpe.com/h20195/V2/GetDocument.aspx?docname=4AA4-8876ENW&cc=us&lc=en>

**HPE Support Services Credits**      Services Credits offer flexible services and technical skills to meet your changing IT demands. With a menu of service that is tailored to suit your needs, you get additional resources and specialist skills to help you maintain peak performance of your IT. Offered as annual credits, you can plan your budgets while proactively responding to your dynamic business.

**NOTE:** \*HPE Proactive Care and HPE Proactive Care Advanced require that the customer connect their devices to make the most of these services and receive all the deliverables.

## Service and Support and Warranty Information

### Related Services

**HPE Backup Recovery Efficiency Analysis** - Assessment of how efficiently backup components are being used as the amount of data to be backed up continues to grow exponentially via analysis intelligence and a snapshot of your current backup environment.

<http://h20195.www2.hpe.com/v2/GetPDF.aspx/4AA3-8490ENW.pdf>

**HPE Backup Recovery Impact Analysis** - Focus placed on service requirements and design as the key to success for gaining a clear understanding of the role of increasingly diverse data protection strategies. <http://h20195.www2.hpe.com/V2/GetPDF.aspx/4AA4-1175ENW.pdf>

**HPE Installation and Startup Service for HPE StoreEver Storage Systems** - Installation and testing of your hardware and software onsite, including configuration of the storage deployment  
**HPE Storage and Data Consultant Residency Services** - Strategically augments current environment with Hewlett Packard Enterprise resources who become your trusted advisor to provide answers that are right for your storage and backup environment

**HPE Storage Data Migration Service** - End-to-end data migration service providing seamless discovery, assessment, planning, and design, completely customizable to your organization's storage area network (SAN) or network attached storage (NAS) environment and using innovative software to help you migrate to HPE storage quickly and efficiently

<http://h20195.www2.hpe.com/V2/GetPDF.aspx/4AA3-0774ENW.pdf>

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### For more information

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

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

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

## Configuration Information

### Step 1 - Base Configuration

HPE StoreEver MSL3040	Base Module description	Part Number
	HPE StoreEver MSL3040 Scalable Library Base Module	Q6Q62A

#### NOTES:

- This product is TAA (Trade Agreements Act) compliant.
- The base module is 3U rack mountable.
- Base module enables 32 slots.
- Standard power supply is included with the base module. Redundant power supply is not included as standard, if required it needs to be added to the order. This needs to be factory integrated, #0D1, in order to be TAA compliant.
- It does not contain any tape drives, up to 3 HH tape drives may be added to the base module.

#### Kit Contents:

- 2.5M PDU Power Cord, C13/C14, 10A
- Rack-mount hardware
- Getting started poster
- Power Supply
- Flyer for Veritas Backup Exec software\*

**\*NOTE:** Customers can download a fully functional 60-day trial of Backup Exec and receive a 50% discount off Veritas MSRP.

Visit <http://www.backupexec.com/hpe> for full details of the promotion.

HPE StoreEver MSL3040 Scalable Library Expansion Module	Q6Q63A
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#### NOTES:

- Expansion module activates 40 slots.
- This product is TAA (Trade Agreements Act) compliant.
- The expansion module is 3U rack mountable.
- It does not contain any tape drives, up to 3 HH tape drives may be added to the expansion module. If drives are added to the expansion module then a power supply is required. Standard or redundant power supplies are not included. If needed, these will have to be added to the order. If TAA compliance is required, power supplies need to be factory integrated, #0D1.

#### Kit Contents:

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

HPE StoreEver MSL3040 Upgrade Power Supply kit	Q6Q64A
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#### NOTES:

- Redundant power supply is not included as standard with the base module, if required it needs to be added to the order. This needs to be factory integrated, #0D1, in order to be TAA compliant.
- For the expansion module, neither the standard power supply nor the redundant are included. A power supply is only needed if tape drives need to be installed in the expansion module. If TAA compliance is required,

## Configuration Information

power supplies need to be factory integrated, #0D1.

<b>Factory Racking</b>	Factory integrate MSL3040 Tape Library with other HPE products such as HPE ProLiant Servers <b>NOTE:</b> #0D1 will appear after the Tape Library part number on the sales order if HPE factory integration is indicated	#0D1
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### Step 2 - Select Generation & Quantity of LTO Ultrium Tape Drives

<b>HPE StoreEver LTO-7 Ultrium 15000 FC Drive Kit</b>	HPE StoreEver MSL LTO-7 Ultrium 15000 FC Drive Upgrade Kit <b>NOTE:</b> Half height LTO-7 FC tape drive. For use with the MSL2024, 4048, 3040 or 6480 libraries. Drive kit includes a tape drive and documentation. <b>NOTE:</b> #0D1 will appear after N7P36A on the sales order if HPE factory integration is indicated. <b>NOTE:</b> This product is TAA (Trade Agreements Act) compliant.	N7P36A
<b>HPE StoreEver LTO-7 Ultrium 15000 SAS Drive Kit</b>	HPE StoreEver MSL LTO-7 Ultrium 15000 SAS Drive Upgrade Kit <b>NOTE:</b> Half height LTO-7 SAS tape drive. For use with the MSL2024, 4048, 3040 or 6480 libraries. Drive kit includes a tape drive and documentation. <b>NOTE:</b> #0D1 will appear after N7P37A on the sales order if HPE factory integration is indicated. <b>NOTE:</b> This product is TAA (Trade Agreements Act) compliant.	N7P37A
<b>HPE StoreEver LTO-6 Ultrium 6250 FC Drive Kit</b>	HPE StoreEver MSL LTO-6 Ultrium 6250 Fibre Channel Drive Upgrade Kit <b>NOTE:</b> Half height LTO-6 FC tape drive. For use with the MSL2024, 4048, 3040 or 6480 libraries. Drive kit includes a tape drive and documentation. <b>NOTE:</b> #0D1 will appear after COH28A on the sales order if HPE factory integration is indicated. <b>NOTE:</b> This product is TAA (Trade Agreements Act) compliant.	COH28A
<b>HPE StoreEver LTO-6 Ultrium 6250 SAS Drive Kit</b>	HPE StoreEver MSL LTO-6 Ultrium 6250 SAS Drive Upgrade Kit <b>NOTE:</b> Half height LTO-6 SAS tape drive. For use with the MSL2024, 4048, 3040 or 6480 libraries. Drive kit includes a tape drive and documentation. <b>NOTE:</b> #0D1 will appear after COH27A on the sales order if HPE factory integration is indicated. <b>NOTE:</b> This product is TAA (Trade Agreements Act) compliant.	COH27A

### Step 3 - Select Software Licenses

Select each option as required with quantities specified:

Software Licenses	Quantity	Description	Part Number
<b>HPE StoreEver MSL TapeAssure Advanced LTU</b>	1 each	HPE StoreEver MSL TapeAssure Advanced LTU <b>NOTE:</b> 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. <b>NOTE:</b> One license needed per library and Command View TL must be installed. <b>NOTE:</b> This is a paper license that will be mailed.	TC406A
<b>HPE StoreEver MSL TapeAssure Advanced E-LTU</b>	1 each	HPE StoreEver MSL TapeAssure Advanced E-LTU <b>NOTE:</b> One license needed per library and Command View TL must be installed. <b>NOTE:</b> This is an electronically delivered License.	TC406AAE

## Configuration Information

<b>HPE StoreEver MSL3040 KMIP Key Manager LTU</b>	1 each	HPE StoreEver MSL3040 KMIP Key Manager LTU <b>NOTE:</b> This is a paper license that will be mailed.	Q8K98A
<b>HPE StoreEver MSL3040 KMIP Key Manager E-LTU</b>	1 each	HPE StoreEver MSL3040 KMIP Key Manager E-LTU <b>NOTE:</b> This is an electronically delivered License.	Q8K98AAE
<b>HPE StoreEver MSL3040 Secure Manager LTU</b>	1 each	HPE StoreEver MSL3040 Secure Manager LTU <b>NOTE:</b> This is a paper license that will be mailed.	Q8K99A
<b>HPE StoreEver MSL3040 Secure Manager E-LTU</b>	1 each	HPE StoreEver MSL3040 Secure Manager E-LTU <b>NOTE:</b> This is an electronically delivered License.	Q8K99AAE
<b>HPE StoreEver MSL3040 LTO-7+ Path Failover LTU</b>	1 each	HPE StoreEver MSL3040 LTO-7+ Ultrium Path Failover LTU <b>NOTE:</b> This is a paper license that will be mailed.	Q8L00A
<b>HPE StoreEver MSL3040 LTO-7+ Path Failover E-LTU</b>	1 each	HPE StoreEver MSL3040 LTO-7+ Ultrium Path Failover E-LTU <b>NOTE:</b> This is an electronically delivered License.	Q8L00AAE
<b>HPE StoreEver High Availability MSL3040 LTO-6 Control Path Failover LTU</b>	1 each	HPE StoreEver High Availability MSL3040 LTO-6 Control Path Failover LTU <b>NOTE:</b> This is a paper license that will be mailed.	Q8K96A
<b>HPE StoreEver High Availability MSL3040 LTO-6 Control Path Failover E-LTU</b>	1 each	HPE StoreEver High Availability MSL3040 LTO-6 Control Path Failover E-LTU <b>NOTE:</b> This is an electronically delivered License.	Q8K96AAE
<b>HPE StoreEver High Availability MSL3040 LTO-6 Data Path Failover LTU</b>	1 each	HPE StoreEver High Availability MSL3040 LTO-6 Data Path Failover LTU <b>NOTE:</b> This is a paper license that will be mailed.	Q8K97A
<b>HPE StoreEver High Availability MSL3040 LTO-6 Data Path Failover E-LTU</b>	1 each	HPE StoreEver High Availability MSL3040 LTO-6 Data Path Failover E-LTU <b>NOTE:</b> This is an electronically delivered License.	Q8K97AAE

## Step 4 - Select Additional Accessories

Power Cords	Quantity	Description	Part Number
	1 each	HPE C13 - C14 WW 250V 10Amp 2.5m Jumper Cord <b>NOTE:</b> This cord ships standard with each MSL3040 Base Tape Library and Power Supply Upgrade Kit. It can be used to connect the rack-mounted device to PDUs with IEC-320 receptacles.	142257-002
	<b>Quantity to</b>	Regional Power Cord Options	

## Configuration Information

<b>order</b>	<b>NOTE:</b> One PDU cord is shipped with each base module (above). If regional power cords are preferred, order qty (1) for the base module and one with each upgrade power supply purchased. Please select the correct power cord for your geographical location.	
1 per base module and upgrade power supply	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 - CEI-23-50 IT/CL 250V 10Amp 1.83m Power Cord	AF571A
	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
	HPE C13 - IS-1293 IN 240V 6Amp LV 2.0m Power Cord	AF562A

**NOTE:** 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.

## Related Options

<b>Redundant Power Supply Upgrade Kit</b>	<p>HPE StoreEver MSL3040 Upgrade Power Supply kit <span style="float: right;">Q6Q64A</span></p> <p><b>NOTES:</b></p> <ul style="list-style-type: none"> <li>Redundant power supply is not included as standard with the base module, if required it needs to be added to the order. This needs to be factory integrated, #0D1, in order to be TAA compliant.</li> <li>For the expansion module, neither the standard power supply nor the redundant are included. A power supply is only needed if tape drives need to be installed in the expansion module. If TAA compliance is required, power supplies need to be factory integrated, #0D1.</li> </ul>
<b>Factory Racking</b>	<p>Factory integrate the MSL Tape Libraries with other Hewlett Packard Enterprise products such as HPE ProLiant Servers <span style="float: right;">#0D1</span></p> <p><b>NOTE:</b> #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 21U in a single rack.</p>
<b>Encryption</b>	<p>HPE StoreEver 1/8 G2 Tape Autoloader and MSL Encryption Kit <span style="float: right;">AM495A</span></p> <p><b>NOTE:</b> The Encryption Kit key server token will generate and retain encryption keys for HPE LTO Ultrium tape drives in the library. Works independent of application or backup software; doesn't require ISV support.</p> <p>HPE StoreEver MSL3040 KMIP Key Manager LTU <span style="float: right;">Q8K98A</span></p> <p><b>NOTE:</b> This is a paper license that will be mailed.</p> <p>HPE StoreEver MSL3040 KMIP Key Manager E-LTU <span style="float: right;">Q8K98AAE</span></p> <p><b>NOTE:</b> This is an electronically delivered License.</p>
<b>FC Host Bus Adapters</b>	<p>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 Data Agile DAPR Compatibility Matrix (Formerly EBS) and Design Guide located at: <a href="http://www.hpe.com/go/DAPRcompatibility">http://www.hpe.com/go/DAPRcompatibility</a>. For more information on FC HBAs, see HPE StoreFabric Adapters at: <a href="http://www.hpe.com/storage/san/">http://www.hpe.com/storage/san/</a></p>
<b>SAS Host Bus Adapters</b>	<p>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 Data Agile DAPR Compatibility Matrix (Formerly EBS) and Design Guide located at: <a href="http://www.hpe.com/storage/DAPRcompatibility">http://www.hpe.com/storage/DAPRcompatibility</a>. For more information on HPE Smart Array RAID controllers, see Fibre HPE P-class RAID controllers at: <a href="http://www.hpe.com/servers/smartarray/">http://www.hpe.com/servers/smartarray/</a>. For more information on HPE ProLiant (SAS) host bus adapters, see H-class HBA controllers at: <a href="http://www.hpe.com/servers/smartarray/">http://www.hpe.com/servers/smartarray/</a></p>
<b>HBAs and SAS Controllers</b>	<p>HPE Smart Array P408e-p SR Gen10 (8 external lanes/4GB cache) <span style="float: right;">804405-B21</span></p> <p><b>NOTE:</b> Recommended for ProLiant Gen10 SAS tape automation connect.</p> <p>HPE Smart Array E208e-p SR Gen10 (8 external lanes/No cache) <span style="float: right;">804398-B21</span></p> <p><b>NOTE:</b> Recommended for ProLiant Gen10 SAS tape automation connect.</p> <p>HPE Smart Array P431/2GB FBWC 12Gb 2-ports Ext SAS Controller <span style="float: right;">698531-B21</span></p> <p><b>NOTE:</b> Recommended for ProLiant Gen9 SAS tape automation connect.</p> <p>HPE H241 12Gb 2-ports Ext Smart Host Bus Adapter <span style="float: right;">726911-B21</span></p> <p><b>NOTE:</b> Recommended for ProLiant Gen9 SAS tape automation connect.</p>



## Related Options

HPE H221 PCIe 3.0 SAS Host Bus Adapter	729552-B21
<b>NOTE:</b> Recommended for ProLiant Gen8 SAS tape automation connect.	
HPE H222 Host Bus Adapter	650926-B21
<b>NOTE:</b> Recommended for ProLiant Gen8 SAS tape automation connect.	
HPE Smart Array P411/256 2-ports Ext PCIe x8 SAS Controller	462830-B21
<b>NOTE:</b> Recommended for ProLiant G6/G7 SAS tape automation connect.	
HPE Smart Array P212/256 1-ports Int/1-ports Ext PCIe x8 SAS Controller	462834-B21
<b>NOTE:</b> Recommended for ProLiant G6/G7 SAS tape automation connect.	

## Optical cables

### OM4 LC-LC type cables

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 drive tapes	0.5m - 500m	0.5m - 380m	0.5m - 150m

**NOTE:** 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 2m External Mini-SAS to 4x1 Mini-SAS Cable	AN975A
<b>NOTE:</b> One cable is required for every four autoloaders or every four library drives. Use this cable to connect HPE MSL SAS Tape Libraries to Mini-SAS (SFF8088) ports.	
HPE StoreEver 4m External Mini-SAS to 4x1 Mini-SAS Cable	AN976A
<b>NOTE:</b> One cable is required for every four autoloaders or every four library drives. Use this cable to connect HPE MSL SAS Tape Libraries to Mini-SAS (SFF8088) ports.	
HPE StoreEver External SAS to Mini-SAS Fanout Cable	AH587A
<b>NOTE:</b> One cable is required for every four drives. Use this cable to connect HPE MSL SAS Tape Libraries to legacy 3Gb SAS controllers with Infiniband (SFF8470) connectors.	
HPE StoreEver Mini-SAS High Density to 4-lane Mini-SAS External Fanout 2m Cable	K2R09A
HPE StoreEver Mini-SAS High Density to 4-lane Mini-SAS External Fanout 4m Cable	K2R10A
HPE 2.0m External Mini SAS High Density to Mini SAS Cable	716191-B21
<b>NOTE:</b> 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	716193-B21
<b>NOTE:</b> 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.	

## Related Options

### Rack Cabinets

The MSL3040 libraries are supported in a variety of HPE Rack offerings, including the HPE Intelligent Series Racks and the HPE 10000 G2 Series Racks.

**NOTE:** If ordering the #0D1 Factory Integration option, the MSL3040 Tape Libraries are certified to ship with one base module and up to 6 expansion modules (up to 21U) installed in the HPE Intelligent Series rack.

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<b>Media</b>	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 15TB WORM Data Cartridge	C7977W
	HPE LTO-6 Ultrium 6.25TB MP RW Data Cartridge	C7976A
	HPE LTO-6 Ultrium 6.25TB MP 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
	<b>Bar Code Labels</b>	
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	
HPE LTO-5 Ultrium WORM Bar Code Label Pack	Q2012A	
<b>Non-Custom Labeled Data Cartridges</b>		
<b>NOTE:</b> Non-Custom labels will come pre-labeled with a pre-determined number sequence.		
HPE LTO-8 Ultrium 30TB RW 20 Data Cartridges Non Custom Labeled with Cases	Q2078AN	
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 MP RW Non Custom Labeled Data Cartridge 20 Pack	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	
<b>Custom Labeled Data Cartridges</b>		
<b>NOTE:</b> Custom labeled products allow customers to customize a specific sequence printed on each label.		
HPE LTO-8 Ultrium 30TB RW 20 Data Cartridges Custom Labeled with Cases	Q2078AL	
HPE LTO-8 Ultrium 30TB WORM 20 Data Cartridges Custom Labeled with Cases	Q2078WL	
HPE LTO-8 Ultrium 30TB RW 20 Data Cartridges Custom Labeled Library Pack without Cases	Q2078AC	
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 MP RW Custom Labeled Data Cartridge 20 Pack	C7976AL	
HPE LTO-6 Ultrium 6.25TB MP RW Custom Labeled Data Cartridge No Case 20 Pack	C7976AC	

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**Related Options**

HPE LTO-6 Ultrium 6.25TB MP RFID RW Custom Labeled Data Cartridge 20 Pack	C7976AF
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

**NOTE:** For more information on LTO media, see: <http://h18006.www1.hpe.com/storage/storagemedia.html?psn=storage>

## Technical Specifications

		<b>MSL3040</b>
<b>Drive Technology</b>		LTO-7 Ultrium 15000 LTO-6 Ultrium 6250
<b>Maximum Number of Drives</b> - Per Module - Per fully expanded Library		3 HH (per Module) 21 HH (per Library)
<b>Number of Slots</b> - Per Module - Per fully expanded Library		32 (Base Module)/40 (Expansion Module) 272 (per Library)
<b>Drive Interface</b>		8 Gb Native Fibre Channel 6 Gb/sec SAS
<b>Maximum Capacity</b>	<b>Native</b> - Per Base Module	192 TB (LTO-7, 32 slots) 80 TB (LTO-6, 32 slots)
	- Per Full Library	1.63 PB (LTO-7, 272 slots) 680 TB (LTO-6, 272 slots)
	<b>Compressed (2.5:1)</b> - Per Module	480 TB (LTO-7, 32 slots) 200 TB (LTO-6, 32 slots)
	- Per Library	4.08 PB (LTO-7, 272 slots) 1.7 PB (LTO-6, 272 slots)
<b>Maximum Transfer Rate</b>	<b>Native</b> - Per Module	3.24 TB/hour (with 3 LTO-7 drives) 1.73 TB/hour (with 3 LTO-6 drives)
	- Per Library	22.5 TB/hr (with 21 LTO-7 drives) 14 TB/hr (with 21 LTO-6 drives)
	<b>Compressed (2.5:1)</b> - 3 HH drives Per Module	Up to 10.32 TB/hr (with 3 LTO-7 drives) 4.3 TB/hr (with 3 LTO-6 drives)
	- 21 HH drives Per Library	Up to 72.45 TB/hr (with 21 LTO-7 drives) 30.2 TB/hr (with 21 LTO-6 drives)
		<b>MSL3040</b>
<b>Dimensions</b>	Out-of-Box (HxWxD)	5.24 X 18.98 X 34.27 in (13.3 x 48.2 x 87.3 cm)
	Shipping (HxWxD)	12.6 X 27.09 X 45.59 in (61.5 x 80.0 x 120.0 cm)
<b>Weight</b>	Out of box	55.34 lbs (25.1 kg)
	Shipping	68.34 lbs (31 kg)
<p><b>NOTE:</b> The weight of each library varies somewhat based on the type and number of LTO tape drives contained in the configuration. 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.</p>		
<b>Reliability</b>	MTBF (mean time between failures)	125,000 hours (based on 1M MSBF)
	MSBF (Mean swaps before failure)	1,000,000
<b>Average Cartridge Swap Time (drive to slot, slot to drive)</b>		26 seconds (Base Unit)
<b>Initialization Time</b>		77 to 204 seconds

## Technical Specifications

<b>Inventory Time</b>		50 seconds (average) Base unit
<b>Connectors</b>		Mini-SAS (MSL SAS model only) LC Optical Fibre (MSL FC models only) (1)RJ-45 Ethernet
<b>Color Control Panel information (on front panel)</b>		Monochrome graphic display, 4 inch diagonal, 240 by 128 black dots, 4/3 aspect ratio
<b>Management Interface</b>		10/100/1000 Mbits/second, auto-configuring interface. RJ-45 connection. Https configurable.
<b>Power</b>		230 Watts (max)
<b>Input Requirements</b>		100-240 VAC, 3.7A Max., 50/60Hz
<b>Relative Humidity</b> (non-condensing)	Operating	20% to 80%
	Shipping	20% to 90%
<b>Temperature Range</b> (wet bulb)	Operating	50° to 95° F (10° to 35° C)
	Shipping	-22° to 140° F (-30° to 60° C)
		<b>NOTE: Library operating temperature limits are based on the industry standard tape limit.</b>
<b>Altitude</b>	Operating	13,000 ft (4000 m)
	Shipping	35,000 ft (10,675 m)

## Summary of Changes

Date	Version History	Action	Description of Change
04-Dec-2017	Version 1	Created	All Content created.



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

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