QuickSpecs

Overview

HPE TFinity® ExaScale Tape Libraries

Meeting enterprise data growth challenges head-on, HPE TFinity® ExaScale Tape Libraries deliver enormous scalability to keep pace with unpredictable data growth. Choose from a range of base configurations and scale up to 53,460 LTO-7 tape cartridges or 40,680 TS11xx Technology cartridges in increments of 10 LTO of 9 TS11xx Technology slots for capacity on demand. Incorporating between 1 and 144 tape drives you can consolidate and store up to 1.52 EB (compressed 2.5:1) using TS11xx Technology or 801 PB (compressed 2.5:1) using LTO-7 tape cartridges of enterprise data.

1.   Drive and Media Expansion Frames
2.   Air Filters and Fans (Behind cover panel)
3.   Center TAP (Import/Export)
4.   Operator Panel Touch Screen
5.   Bulk TAP Import

6.   Base Frame
7.   Bulk TAP Service Bay (Import/Export)
8.   Window Panel
9.   Standard Service Bay

Standard Features

1.   **Scalability**
     a.   Capacity on Demand from 50 to 53,460 LTO Tape Cartridges (45 to 40,680 Enterprise Tape Cartridges) and 1 to 144 tape drives
     b.   Scale capacity in 10 LTO or 9 Enterprise tape slot increments
     c.   Bulk import/export Service Bay Frames for faster cartridge load and unload
     d.   Library frames/expansion modules add 8.71 ft 2 per frame
     e.   The HPE TFinity ExaScale can be configured either for LTO-6 and LTO-7 or TS1150 and TS1155 Technology Drives with mixed media support available. Mixed media supports LTO and TS11xx Technology combined in the same library and requires Enterprise Frames.
2.   **High Availability**
     a.   Redundant power supplies
     b.   Dual Robotics
     c.   Global Spare Drive option
     d.   Optional Assisted Self Maintenance Kit (ASM) for on-site parts replacement
3.   **Manageability** - BlueScale®
     a.   Management access on front panel of library or remotely via web-browser
     b.   Easy to use web GUI

Hewlett Packard Enterprise

Features in more detail

      c.   BlueScale management software provides proactive hardware health monitoring
      d.   BlueScale Library management provides advanced logs and reporting on media, drives, power consumption and performance
      e.   Auto Support Logs (ASL) provide automatic e-mail alerts on monitored thresholds

4. **Security**
      a.   Built-in BlueScale Standard Encryption (LTO Only)
      b.   Built-in option for BlueScale Professional Encryption (LTO Only)
      c.   Hardware Based Encryption through HPE ESKM
      d.   Hardware Based Encryption through Spectra SKLM

5. **Longevity**
      a.   Ideal for archiving cold or active data with a media shelf-life of up to 30 years
      b.   Lowest cost per Gigabyte for longer term storage, no on-going power or energy requirement
      c.   Portable, high density storage, small footprint with up to 15TB of compressed data on a single LTO-7 data cartridge and 37.5TB of compressed data on a single TS1155 Technology JD data cartridge.
      d.   LTFS for ease of use and assured interchange

Customer Benefits

1. **Capacity on demand**
    -   Only buy what you need today and add storage capacity as you need it
    -   Upgrade capacity in intervals of 10 LTO or 9 Enterprise tape slots at a time
    -   More storage capacity in less floor space
    -   Tape consolidation through capacity, performance, partitioning and reporting results in a lower total cost of ownership.
    -   The HPE TFinity ExaScale can be configured either for LTO-6 and LTO-7 or TS1150 and TS1155 Technology Drives with mixed media support available. Mixed media supports LTO and TS11xx Technology combined in the same library and requires Enterprise Frames.

2. **Continuous data protection**
    -   Data Integrity Verification examines media health before and after data writes, when enabled
    -   Integrated BlueScale Encryption (LTO Only) provides automatic data protection

3. **Reduced cost of ownership**
    -   Most energy efficient tape library for its class
    -   Enhanced manageability from any location.
    -   Proactive and predictive library maintenance supported by BlueScale management software

4. **Enhanced data security**
    -   Provides a high level of encryption security, with compression, for strong backup data privacy to secure confidential information and address compliance quickly.
    -   Supports WORM media (using LTO-7 Ultrium, LTO-6 Ultrium)
    -   Providing a fail-safe method for permanently storing data records.

Family Comparison

	TFinity ExaScale Edition
Scalability	Scales horizontally with linear robot from 3 to 44 frames, 1-144 drives, and 50 to 53,460 LTO slots or 45 to 40,680 TS11xx Technology slots.
Drive Technology*	LTO-7, LTO-6 Ultrium Tape Drives, TS1150 or TS1155 Technology Drives

Features in more detail

Capacity range	50 LTO slots minimum in a single frame 53,460 LTO slots in a max configuration of 44 frames 45 TS11xx Technology slots minimum in a single frame 40,680 TS11xx Technology slots in a max configuration of 44 frames
Maximum Drive Count	1-24 in a base frame 1-24 in each Drive Expansion Frame 144 in maximum configuration
Maximum Capacity (compressed 2.5:1)	801.9 PB using LTO-7 media (max 53,460 slots,44 frames) 1.52 EB using TS1155 Technology media (max 40,680 slots,44 frames)
Maximum Throughput (LTO-7 Native)	300 MB/s native per LTO-7 drive (43,200 MB/s Maximum)
Standard Form-factor	Free Standing
Dual robotics	Standard
Data & library security	Encryption: BlueScale Standard Encryption (LTO Only) BlueScale Professional Encryption (LTO Only) HPE ESKM supported Spectra SKLM
The HPE TFinity ExaScale can be configured with LTO-6, LTO-7, TS1150 and TS155 Technology Drives with mixed media support available. Mixed media supports LTO and TS11xx Technology combined in the same library and requires Enterprise Frames. The option to upgrade to mixed media is available to existing LTO customers – contact HPE Sales for more information.	

Scalability to meet uncertain data growth   Buy only what you need today for backup and archive, and then expand the library for higher capacity and performance as your data grows.

The HPE TFinity ExaScale Tape Library provides a modular architecture allowing for capacity increases up to 5.52 PB / 8.71 ft^2. Capacity may be added to each frame in increments of 10 LTO tape slots (9 Enterprise tape slots) at a time, up to 53,460 LTO (40,680 Enterprise) tapes.

The library configuration can accommodate:

- 6 Robotic Interface Modules
- 0 to 41 expansion Frames – Max. 44 Frames (Add 41 Media Expansion and Drive Expansion Frames to Base Frame and 2 Service Bays)
- 50 to 53,460 possible LTO cartridges slots or 45 to 40,680 TS11xx Technology slots maximum
- 1 to 144 LTO-7, LTO-6, TS1150 or TS1155 Technology Drives.

TFinity ExaScale Enterprise Frames can support both TS11xx Technology or LTO Drives and media with mixed media support available. Mixed media supports LTO and TS11xx Technology combined in the same library and requires Enterprise Frames.

HPE TFinity ExaScale Tape Libraries offer different expansion frames to best suit your data protection and/or archiving needs.

Frame Types	(Slots Max)	Drives (Max)	Max Throughput (Compressed)	Max Capacity (Compressed)
Minimum Base Configuration	Base, Right Service Bay, Left Service Bay			

Features in more detail

Base Frame

LTO Configuration		Includes Svc Bays	Includes Svc Bays
920 Slots	12 Drives	32.4 TB/hr	28.8 PB
800 Slots	24 Drives	64.8 TB/hr	27.0 PB
Enterprise Configuration		**Includes Svc Bays**	**Includes Svc Bays**
594 Slots	24 Drives	60.48 TB/hr	50.6 PB

Standard Right Service Bay

LTO 500 Slots			
	N/A	N/A	Included with Base Frame
Enterprise 378 Slots			

Standard Left Service Bay

LTO 500 Slots			
	N/A	**N/A**	**Included with Base Frame**
Enterprise 378 Slots			

Media Expansion

LTO 1300 Slots	**N/A**		**19.5 PB**

Features in more detail

	N/A
Enterprise 990 Slots	**37.12 PB**

Drive Expansion

LTO Configuration

1010 Slots	12 Drives	32.4 TB/hr	15.15 PB
890 Slots	24 Drives	64.8 TB/hr	13.35 PB

Enterprise

675 Slots	24 Drives	60.48 TB/hr	25.31 PB

Bulk TAP Service Bay

A Service Bay may optionally be configured as a Bulk TAP Service Bay. A Bulk TAP Service Bay adds 14 TeraPack Enter/Exit ports to the front of the frame.

LTO 500 Slots	N/A	N/A	Included with Base Frame
Enterprise 378 Slots	N/A	N/A	Included with Base Frame

Data Path Failover   With the addition of two Robotic Interface Modules (RIMs), the secondary RIM may be configured to serve as a data path failover.

Dual Robotics   To greatly increase HPE TFinity ExaScale high availability, active/active dual robots are included with each library. A Base TFinity ExaScale configuration consists of a base frame and both a left and right service bay. The Service Bays serve as a maintenance and repair zone for a single robot and will allow for library operations to continue while either robot is in service.

Features in more detail

Media Handling   TeraPack® cases, are unique in how they are used in the library. TeraPacks increase library density
beyond all competition. Multiple tape cartridges are grouped in a single container that is used
throughout the library and beyond. Library robotics can transport a TeraPack within the library and
select a requested tape from the TeraPack case. In this unique architecture, each TeraPack case equals
9 x Enterprise media or 10 x LTO media tape slots. A robot can move a bar-coded TeraPack case that
contains 9 or 10 pieces of media in a single robotic move, while other tape libraries require 9 or 10
separate robotic moves to accomplish this task.

Traditional libraries organize tapes one-tape-deep along the library chassis wall. The TFinity ExaScale
library uses TeraPack cases to store tapes, with each TeraPack case
extending into the library's interior. This provides HPE Tape Libraries
with very high density, allowing more tapes in a given area than
competitors' libraries.

The library's two TeraPack Access Ports (TAPs) provide a practical
and efficient method for inserting and removing media. To simplify
use and reduce time spent on data protection, HPE Tape Libraries
provides a configurable entry/exit pool, so all cases to be exported are
identified before the operator unloads media. The TeraPack cases can be swiftly unloaded through the
two TAPs, 18 Enterprise tapes or 20 LTO tapes at a time. Because tapes are loaded in multiple
quantities, bulk loads and unloads save significant time.

Mixed Media

Mixed media in the TFinity ExaScale tape library allows the library to support multiple media and drive
technologies in a single tape library – with LTO tape technology and IBM's TS11xx tape technology.
This feature enables customers to migrate between different media technologies within the same
library. Mixed media support also enables customers to deploy the most appropriate tape technology
for the demands of their specific backup and archive needs, all within a single library.

Features in more detail

BlueScale Management   The TFinity ExaScale Tape library provides a graphical interface that is extremely easy to use. You can monitor and manage the library from the tape library's front panel or remotely. Reporting is also straightforward - the library, drive and media status can be viewed in a glance with complete reporting available if needed at the touch of a button. BlueScale is included with the TFinity ExaScale as a standard feature.

Thin Provisioning

Thin provisioning provides a method for optimizing the available storage in the partitions of a tape library. The benefit of this feature is that thin provisioning allows an administrator to change the size of a partition in a tape library without having to reconfigure the entire tape library. Thin provisioning is an easy-to-use offering that provides virtual storage capacity for simplified administration, minimized downtime and reduced cost when adding storage.

Library Lifecycle Management

BlueScale Library Lifecycle Management (LLM) tracks the library and its components across the library's lifecycle. Through Hardware Health Monitoring (HHM), BlueScale tracks maintenance thresholds for key library components and notifies you when maintenance tasks are required to keep your library in optimum operating condition. When a component reaches its maintenance threshold, the status bar displays a Maintenance Notification icon.

Library Lifecycle Management (LLM) collects or maintains the following information:

- Library serial number and name (if configured)
- Information about key library components monitored by HHM including maintenance thresholds
- Transporter moves including Drive-to-drive moves, drive-to-slot moves, slot-to-slot moves, slot-to-drive moves, and importing/exporting media

Drive Lifecycle Management (DLM)

DLM gathers data each time a tape is unloaded from a drive. The data stored by the library includes the following information about the last 50 tapes unloaded:

- Read/write errors, including soft and hard errors
- Tape alerts
- Flags generated while the tape was loaded in the drive
- Recent errors or recent information posted through the drive's single-character display

The library uses this data to generate a report on overall drive health as well as health reports for individual drives. These reports, along with BlueScale drive clean, test, and resets, help you determine whether a problem exists with a drive, a tape, or another library component.

Drive Performance Monitoring

The Drive Performance Monitor lets you get the most out of your library by ensuring that drives are performing at the highest possible throughput rate. Performance monitoring graphically displays the read/write performance of the drives in the library. Metrics can be tracked per individual drive or by tracking overall library throughput.

EnergyAudit Power Monitoring

Features in more detail

EnergyAudit, the BlueScale power monitoring feature, tracks power use over time and by component. Customers can use this information to adjust and optimize power use. Tracking this data becomes increasingly important as energy prices continue to climb.

Auto Drive Clean

Auto Drive Clean provides library-based cleaning of drives without user intervention. The Auto Drive Clean feature uses a dedicated cleaning partition with specially labeled Maintenance TeraPacks. The cleaning partition can be shared by multiple storage partitions and is used by the library to automatically clean drives whenever necessary.

Automated drive cleaning results in fewer failed tape read/write operations and is the recommended method for cleaning drives.

MediaIQ™

MediaIQ is a performance technology that enables the TFinity ExaScale tape library to queue multiple moves simultaneously and select the most efficient order in which to perform these moves. MediaIQ also greatly enhances the utilization of the robotics system, selecting the best robot for each move based on their proximity between media and drives.

SlotIQ™

SlotIQ is a performance technology that utilizes Spectra Logic's unique TeraPack® storage architecture to greatly reduce robotic movement for most move profiles. By virtualizing the tape cartridge inventory, SlotIQ can take advantage of moving up to ten slots within a TeraPack to any location in the library, thus reducing by almost half the required time for an unload/load operation.

Advanced Reporting   Syslog

A Syslog server is used to easily monitor all system messages. Once configured, the library automatically sends all system messages to a designated Linux server that has been configured to support Syslog. Syslog is a standard for forwarding log messages over an Internet Protocol (IP) computer network. It provides separation of the software that generates log messages from the system that stores the messages.

AutoSupport Logs (ASL)

The HPE TFinity ExaScale Tape libraries have a Phone Home feature, AutoSupport that can be configured to automatically create and send e-mail messages about issues or problems to designated e-mail users, including technical support. The data included in these e-mail messages includes trace information, log data, a system description, and information about any message or issue. You can also elect to copy this same data to a USB device, if security concerns prevent the use of automatic outbound email. You can set whether some or all messages are sent, per severity level of the message. This easy-to-use and easy-to-administer feature helps identify issues before they turn into problems, and speeds the resolution of problems. If the site is set up to use SSL, the Phone Home service uses the secure connection; otherwise, the service uses the network

---

Features in more detail

Best in class reliability   As data becomes more and more mission critical, and downtime becomes more costly to the enterprise, customers are requiring high availability consolidated storage solutions which offer hot-plug components and redundancies of key operating subsystems (tape drives, power supplies, control modules, robotics and filters).

Data Encryption for added security   ESKM: The Hewlett Packard Enterprise Secure Key Manager, using the industry-standard KMIP protocol, reduces your risk of a costly data breach and reputation damage while improving regulatory compliance with a secure centralized encryption key management solution for LTO-7 and LTO-6 as well as TS11xx Technology drives within the HPE TFinity ExaScale tape library. In addition, the ESKM provides strong auditable security and reliable lifetime key archival. The ESKM with KMIP and LTO-7/LTO-6 or TS11xx Technology drive encryption in the TFinity ExaScale Tape Library provides a complete and secure privacy solution to protect customer's confidential data.

BlueScale Professional Encryption

BlueScale Professional Encryption offers LTO users integrated encryption key management provided through the library's user interface, and is the only true integrated encryption key management option for data on tape. Secure and easy to use, BlueScale Professional Encryption provides powerful key management features for encryption and decryption, and is suitable for customers who desire more than one encryption key for all data stored by a single tape library. BlueScale Professional Encryption has the capability to manage up to 30 individual encryption keys on the tape library. The BlueScale user interface manages the encryption keys without any need for an external server, reducing operational complexity.

Spectra SKLM Encryption

For organizations with more complex and extensive encryption requirements, Spectra SKLM Encryption Key Management is time tested and proven across enterprise-level customers requiring the highest standard of encryption security. With Spectra SKLM, customers can deploy a centralized and redundant key management solution that meets the most complex key management requirements. Spectra SKLM allows multiple tape libraries to connect to a centralized key manager, giving all of the libraries access to the same encryption key store. Optional redundancy provided by Spectra SKLM provides high availability of the encryption keys.

Bulk media import/export for significant time savings   The Center TAP (TeraPack Access Point) allows for up to 20 LTO or 18 Enterprise tape cartridges to be imported/exported into the library at one time. With the addition of a Bulk TAP Service Bay, up to 140 LTO or 126 Enterprise tape cartridges may be imported/exported in to the library at one time.

LTO Ultrium Technology   LTO (Linear Tape Open) Ultrium Tape Drives use best of breed technology. By taking the best features from other tape technologies and combining them into a single new technology, Ultrium tape drives are in a league of their own. LTO technology is an open industry standard format.

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:

Features in more detail

- 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 & TS Technology Tape Drives	Data transfer rate range (native)
LTO-7 Ultrium	101 to 300MB/s
LTO-6 Ultrium	40 to 160 MB/s
TS1155 Technology Drives	112 to 360 MB/s
TS1150 Technology Drives	112 to 360 MB/s

WORM (Write-Once, Read-Many) Drive and Media Support

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

HPE TeraPack Media

HPE TeraPack Media is designed to ensure that customers have the most reliable and automated tape storage available. No other supplier places as much emphasis on continual enhancements and features that simplify all aspects of the media management process. From manufacturer selection to testing and customer shipment, every step of the certified media process is designed to ensure you have the most reliable and automated tape storage available.

Quality - Hewlett Packard Enterprise believes that the test program for HPE Ultrium storage supplies is the most thorough and comprehensive in the industry. In order to carry the HPE Brand, designated cartridges must satisfy an exhaustive battery of additional procedures that relate directly to how the product is used in real life situations when real data and real businesses are at stake. Some of these procedures - e.g. "five corner" environmental interchange, load/unload for automation, ageing simulation and drop testing are not found in the standard logo test. These exhaustive tests on media and both HPE and non HPE drives ensure that HPE LTO Ultrium storage supplies will always offer

Features in more detail

maximum reliability even in the most extreme conditions. Unique to TeraPack media, an additional CarbideClean® process gives further peace of mind for HPE T950 and HPE TFinity Exascale library customers.

Intelligence - Media Lifecycle Management (MLM) reduces the most common media-related failures. MLM allows you to proactively manage your tape inventory through simple monitoring of over 40 health statistics and automatically identifies at-risk tapes ready for retirement.

Verification – HPE TeraPack Media assures data integrity using an integrated, intelligent and comprehensive set of Data Integrity Verification (DIV) tools when integrated with your tape library. PreScan verifies your tapes are safe prior to usage and QuickScan and FullScan verify your data has been properly written to tape

Protect - When combining HPE TeraPack Media and our tape library family's integrated BlueScale Encryption Key Management, your data is protected with a straightforward, easily installed solution.

Management – Media arrives on customer's doorsteps, individual tapes unwrapped with pre-applied barcode labels bundled in TeraPack containers and ready for bulk-loading into your tape library**.**

Warranty - Lifetime Guarantee warrants our tapes to be free from defects in materials and workmanship for the life of the media. All HPE storage media products are supported by a worldwide network of resellers and service providers as well as toll-free 24 X 7 technical phone support during the warranty period **.**

Data Integrity Verification

HPE TFinity ExaScaleTape Libraries' data integrity verification features a set of background processes that provide multiple levels of integrity verification for LTO data cartridges. These features help ensure that data stored over any length of time, including archived data stored for years, can be retrieved as needed. These processes include PreScan and PostScan (QuickScan or Fullscan). PreScan checks newly imported tapes to make sure they are ready to use (for example, in good health and not write-protected.) FullScan verifies readability of all the data written on the tape. Quickscan verifies the readability of the data on a single pass of the tape.

PreScan: Once configured, the library automatically inserts each newly imported LTO cartridge into an LTO tape drive in the partition and checks the drive to determine the following about the cartridge:
- Non-MLM-enabled tape
- Broken or dislodged leader
- Poor media health
- Write protected
- Encrypted tape with a moniker not currently stored in the library

PostScan: After data is written to tape, a PostScan can be conducted to verify that the data written to the tape has no errors. Using either **QuickScan** or **FullScan**, the drive will scan each LTO cartridge and confirm that there are no media errors on the tape by reading either a single length of one wrap of tape (16 tracks on LTO) or the entire length of the tape, up to the end of the recorded data (EOD).

The PostScan process is performed by the library independently of the backup application normally used to read and write data to the tape. The results of the scan are stored in the library's media-health database. The user can set triggers to check the health of tapes over an interval of time, to ensure that the data is valid. You can also verify a specific tape's data integrity manually/by request.

QuickScan Using Global Spare— A Global Spare drive can be used to verify the integrity of all the data on a tape in a single wrap, from the beginning of the tape up to the end of first wrap or the end of recorded data (EOD), whichever comes first. Using a Global Spare drive avoids potential delays in normal

Features in more detail

operation while a QuickScan is being performed.

**Industry-Unique
Customization**

The range of possibilities for customizing the TFinity ExaScale are almost boundless. Whether customizing a new TFinity ExaScale, or enhancing an existing TFinity ExaScale tape library, customers can graphically customize the panels on their tape library nearly any way they would like. Custom decorative skins enable customers to brand their data centers and the TFinity ExaScale tape library

Compatibility

Software Support   The HPE TFinity ExaScale Tape Libraries are supported on the following ISV's for LTO drives:
- HPE Data Protector
- ARCserve Backup
- Dell EMC Legato Networker
- IBM Spectrum Protect
- VERITAS Backup Exec
- VERITAS NetBackup
- CommVault Simpana
- Oracle Diva Archive
- Quantum StorNext
- SGI DMF
- MassTech MassStore
- SGL Flashnet
- IBM HPSS

Please contact sales for further details including current TS11xx Technology Compatibility.

Encryption Support   BlueScale Standard Encryption (LTO Only): Included with Tape Library

The HPE TFinity ExaScale Tape Libraries are supported on the following Encryption Key Servers:
HPE ESKM 5.0
BlueScale Professional Encryption (LTO Only)
Spectra SKLM

Service and Support and Warranty Information

Warranty Included with the Product

The HPE TFinity ExaScale has a standard warranty that extends one year from the date of shipment from the factory. This warranty includes a Next Business Day service contract. Additional years of warranty service can be purchased.

Service and Support

HPE offers a wide range of support options and professional services options. Support options include ongoing telephone and web support, an Assisted Self-Maintenance (ASM) option that stores customer-replaceable spare parts on-site, a global spare drive option, and built-in "phone home" support through the library's AutoSupport feature. Professional Services further extends options through site visits and preventive maintenance options. Customers automatically receive complete installation and integration services.

Recommended Support Services

Four-Hour On-Site Service

Four-Hour On-Site Service includes:

•   Telephone access to a Technical Support representative, 24 hours a day, 7 days a week, 365 days a year (including evenings, weekends, and holidays).

•   Upon verification that the unit has malfunctioned and a part replacement is required, a service visit from a field service representative will be dispatched to arrive on-site within four hours, including evenings, weekends, and holidays. The customer may specify an arrival time after the four-hour window. The customer may be requested to replace the part if appropriate.

•   Remote troubleshooting 24 hours a day, 7 days a week, 365 days a year.

•   24 x 7 x 365 access to the Support Web Portal, knowledge base and online documentation.

Next Business Day On-Site Service

Next Business Day On-Site Service includes:

•   Access to a Technical Support representative on any business day (not including evenings, weekends, or holidays) from 8:00 a.m. to 5:00 p.m. (customer local time).
•   A service visit from a field service representative, upon verification that the unit has malfunctioned and a part replacement is required. If Technical Support is notified by 5:00 p.m. (customer local time), a field service representative will be dispatched for arrival on the following business day between 8:00 a.m. and 5:00 p.m.
•   Remote troubleshooting between 8:00 a.m. and 5:00 p.m. (customer local time) during the standard business week, excluding nationally recognized holidays in the customer's location.
•   24 x 7 x 365 access to the Support Web Portal, knowledge base and online documentation.

Service and Support and Warranty Information

Next Business Day Service	Next Business Day service includes: • Telephone support between 8:00 a.m. and 5:00 p.m. (customer local time) during the standard business week of the country where the equipment is registered with Technical Support, excluding any nationally recognized holidays in that location. • Next business day delivery of parts. Upon verification that the product has malfunctioned and a part replacement is required, the part will be shipped for delivery and customer installation the next business day. Parts must be shipped by 14:30 p.m. to arrive the next business day. • Remote troubleshooting between 8:00 a.m. and 5:00 p.m. (customer local time) during the standard business week, excluding nationally recognized holidays in the customer's location. • 24 x 7 x 365 access to the Support Web Portal, knowledge base and online documentation**.**
Assisted Self Maintenance (ASM)	Recognizing that some users prefer to have hands-on control over library uptime, our tape library was designed so that major components are customer-replaceable. With Assisted Self-Maintenance (ASM) support options, spare components are placed at your facility, ready to be installed by your IT staff in your data storage environment. Most of the swappable components can be replaced, with only a screwdriver, in less than three minutes. Our libraries are the only libraries in the industry that ship with on-site, user-replaceable components that include: • Drive • Power supply • Air filters • Connectivity controller (RIM – Robotics Interface Module) The ASM Gold program adds the following components to the on-site kit: • Transporter (robotics) – ASM Gold • Library Control Module/Robotics Control Module – ASM Gold The library robotics replacement procedure requires only a screwdriver, which is included in the ASM kit. With ASM, data center staff can replace components as directed by technical support to resolve library issues as they arise. Instead of having to wait for an average of eight hours for an engineer to arrive at the site, the TFinity ExaScale library can be running again in less than five percent of the usual wait time. **https://support.spectralogic.com/**

Technical Specifications

LTO TFinity ExaScale Frames

LTO TFinity ExaScale Base Frame Options	Part Number
HPE TFinity ExaScale3 Drive Bay Assembly Max 12 LTO Drives 920 Slot	Q1G79A
HPE TFinity ExaScale6 Drive Bay Assembly Max 24 LTO Drives 800 Slot	Q1G81A
HPE TFinity ExaScale Custom 3 Drive Bay Assembly Max 12 LTO Drives 920 Slot	Q1J42A
HPE TFinity ExaScale Custom 6 Drive Bay Assembly Max 24 LTO Drives 800 Slot	Q1J44A

- Includes 20 Entry/Exit Slots, zero drives, and 50 slots enabled.

   NOTE: Minimum TFinity ExaScale includes the Base Frame, Left and Right Service Bay. As drives and slots are added, additional Expansion Frames may be required. Please contact your local sales representative to ensure desired capacity is achieved.

   NOTE: Custom Skins require the purchase of Q1J58A HPE TFIN Artwork Design Service and completion of the custom skin form.

   NOTE: This product is TAA (Trade Agreements Act) compliant.

LTO TFinity ExaScale Service Bays – Minimum configuration includes Base Frame and 2 Service Bays	Part Number
HPE TFinity ExaScale LTO Bulk Left Service Bay, 140 Entry/Exit Slots, 500 slots	Q1G83A
HPE TFinity ExaScale LTO Bulk Right Service Bay, 140 Entry/Exit Slots, 500 slots	Q1G84A
HPE TFinity ExaScale LTO Left Service Bay, 500 slots	Q1G86A
HPE TFinity ExaScale LTO Right Service Bay, 500 slots	Q1G87A
HPE TFinity ExaScale LTO Custom Bulk Left Service Bay, 140 Entry/Exit Slots, 500 slots	Q1J46A
HPE TFinity ExaScale LTO Custom Bulk Right Service Bay, 140 Entry/Exit Slots, 500 slots	Q1J47A
HPE TFinity ExaScale LTO Custom Left Service Bay, 500 slots	Q1J49A
HPE TFinity ExaScale LTO Right Service Bay, 500 slots	Q1J50A

LTO TFinity ExaScale Expansion Frames	Part Number
HPE TFinity ExaScale 3 Drive Bay Assembly Expansion Frame Maximum 12 LTO Drives 1,010 Slots	Q1G80A
HPE TFinity ExaScale 6 Drive Bay Assembly Expansion Frame Maximum 24 LTO Drives 890 Slots	Q1G82A
HPE TFinity ExaScale LTO Media Expansion Frame 1,300 Slots	Q1G85A
HPE TFinity ExaScale Custom 3 Drive Bay Assembly Expansion Frame Maximum 12 LTO Drives 1,010 Slots	Q1J43A
HPE TFinity ExaScale Custom 6 Drive Bay Assembly Expansion Frame Maximum 24 LTO Drives 890 Slots	Q1J45A
HPE TFinity ExaScale LTO Custom Media Expansion Frame 1,300 Slots	Q1J48A

LTO TFinity ExaScale Transporter – selection required. Qty 2 will be included in configuration.	Part Number
HPE Standard Transporter - LTO Tape Drive	Q0G87A
HPE High Performance Transporter	Q0G95A

Technical Specifications

HPE LTO Entry/Exit TeraPack 10-slot No Media	Q0H10A

Qty 5 Entry/Exit TeraPacks will be added to a new TFinity ExaScale configurations

Enterprise TFinity ExaScale Frames

	Part Number
Enterprise TFinity ExaScale Base Frame Configuration	
HPE TFinity ExaScale 6 Drive Bay Assembly Maximum 24 Enterprise Drives 594 Slots	Q1G88A
HPE TFinity ExaScale Custom 6 Drive Bay Assembly Maximum 24 Enterprise Drives 594 Slots	Q1J51A

- Includes 18 slot Entry/Exit slots, zero drives, and 45 slots enabled

NOTE: Minimum TFinity ExaScale includes the Base Frame, Left and Right Service Bay. As drives and slots are added, additional Expansion Frames may be required. Please contact your local sales representative to ensure desired capacity is achieved.

NOTE: Custom Skins require the purchase of Q1J58A HPE TFIN Artwork Design Service and completion of the custom skin form.

NOTE: This product is TAA (Trade Agreements Act) compliant.

	Part Number
Enterprise TFinity ExaScale Service Bays – Minimum configuration includes Base Frame and 2 Service Bays	
HPE TFinity ExaScale Enterpise Bulk Left Service Bay, 126 Entry/Exit Slots, 378 slots	Q1G90A
HPE TFinity ExaScale Enterprise Bulk Right Service Bay, 126 Entry/Exit Slots, 378 slots	Q1G91A
HPE TFinity ExaScale Enterprise Left Service Bay, 378 slots	Q1G93A
HPE TFinity ExaScale Enterprise Right Service Bay, 378 slots	Q1G94A
HPE TFinity ExaScale Enterpise Custom Bulk Left Service Bay, 126 Entry/Exit Slots, 378 slots	**Q1J53A**
HPE TFinity ExaScale Enterprise Custom Bulk Right Service Bay, 126 Entry/Exit Slots, 378 slots	**Q1J54A**
HPE TFinity ExaScale Enterprise Custom Left Service Bay, 378 slots	**Q1J56A**
HPE TFinity ExaScale Enterprise Custom Right Service Bay, 378 slots	**Q1J57A**

	Part Number
Enterprise TFinity ExaScale Expansion Frames	
HPE TFinity ExaScale 6 Drive Bay Assembly Expansion Frame Maximum 24 Enterprise Drives 675 Slots	Q1G89A
HPE TFinity ExaScale Custom 6 Drive Bay Assembly Expansion Frame Maximum 24 Enterprise Drives 675 Slots	Q1J52A
HPE TFinity ExaScale Enterprise Media Expansion Frame 990 Slots	Q1G92A
HPE TFinity ExaScale Enterprise Custom Media Expansion Frame 990 Slots	Q1J55A

	Part Number
Enterprise TFinity ExaScale Transporter – selection required. Qty 2 will be included in configuration.	

Technical Specifications

HPE Standard Transporter – Enterprise   Q0G96A

HPE High Performance Transporter- Enterprise   Q0G95A

HPE TS11xx Technology Entry/Exit TeraPack 9-slot No Media   Q0H14A

NOTE : Qty 5 Entry/Exit TeraPacks will be added to new TFinity ExaScale configurations

NOTE:

- Customers may also be required to also purchase the necessary number of drives, Fibre Channel cables, tape media, power cords and software licenses in order to complete the library solution.
- Installation and Support services will be quoted as a part of each library order.

Technical Specifications

Tape Drives, Slot/Capacity Licenses, and HPE TeraPack Media

LTO-7 Drive Options	Part Number
HPE TFinity ExaScale LTO-7 Ultrium Fibre Channel Full Height Drive EDBA Sled (New Or Upgrade Option)	Q0H20A
HPE TFinity ExaScale LTO-7 Ultrium Fibre Channel Full Height Drive Sled (Upgrade Option)	Q0H19A

Quantity: 1 to 24 drives per drive frame; up to 144 drives maximum

LTO-6 Drive Options	
HPE TFinity ExaScale LTO-6 Ultrium Fibre Channel Full Height Drive EDBA Sled (New or Upgrade Option)	Q0H16A
HPE TFinity ExaScale LTO-6 Ultrium Fibre Channel Full Height Drive Sled (Upgrade Option)	Q0H15A

Quantity: 1 to 24 drives per drive frame; up to 144 drives maximum

TS1150 Technology Drive Options	Part Number
HPE TFinity ExaScale TS1150 Technology Fibre Channel Drive EDBA Sled (New Or Upgrade Option)	Q0H18A

Quantity: 1 to 24 drives per drive frame; up to 144 drives maximum

LTO Slots/Capacity Licenses	Part Number
HPE TFinity ExaScale LTO BlueScale Storage Chamber 10-slot LTU	Q0H12A

LTO slots are purchased in 10 slot increments.

Enterprise Slots/Capacity Licenses	Part Number
HPE TFinity ExaScale Enterprise BlueScale Storage Chamber 9-slot LTU	Q0H13A

Enterprise slots are purchased in 9 slot increments.

TS1155 Technology Drive Options	Part Number
HPE TFinity ExaScale TS1155 Technology Fibre Channel Drive EDBA Sled (New or Upgrade Option)	Q1J76A

Quantity: 1 to 24 drives per drive frame; up to 144 drives maximum

HPE LTO Ultrium TeraPack Media

Non-Custom Labeled LTO Ultrium TeraPack Data Cartridges

HPE LTO-6 Ultrium BaFe Non-Custom Labeled TeraPack (10 Data Cartridges)	Q1G95A
HPE LTO-6 Ultrium MP Non-Custom Labeled TeraPack (10 Data Cartridges)	Q1G97A
HPE LTO-7 Ultrium Non-Custom Labeled TeraPack (10 Data Cartridges)	Q1H01A

Custom Labeled LTO Ultrium TeraPacks Data Cartridges

NOTE: Custom labeled products allow customers to choose their own specific label sequence to be printed on their label order. A custom barcode label order form must be completed.

HPE LTO-6 Ultrium BaFe Custom Labeled TeraPack (10 Data Cartridges)	Q1G96A
HPE LTO-6 Ultrium MP Custom Labeled TeraPack (10 Data Cartridges)	Q1G98A
HPE LTO-7 Ultrium Custom Labeled TeraPack (10 Data Cartridges)	Q1H02A

Non-Custom Labeled Cleaning LTO Ultrium TeraPacks

HPE LTO Ultrium Maintenance TeraPack (10 Cleaning Cartridges)	Q1H03A

Technical Specifications

Empty TeraPack Trays and Dust Cover (LTO)

HPE LTO Ultrium TeraPack 10-slot Dust Cover   Q1H05A
HPE Empty LTO Ultrium TeraPack Tray (No Cover or Media)   Q1H40A
HPE Empty TS TeraPack Tray (No Cover or Media)   Q1H41A

Part Name	HPE LTO-6 BaFe Non Custom TeraPack	HPE LTO-6 BaFe Custom TeraPack	HPE LTO-6 MP Non Custom TeraPack	HPE LTO-6 MP Custom TeraPack	HPE LTO-7 Non Custom TeraPack	HPE LTO-7 Custom TeraPack	HPE LTO Maintenance TeraPack
Part Number	Q1G95A	Q1G96A	Q1G97A	Q1G98A	Q1H01A	Q1H02A	Q1H03A
Format	LTO-6 BaFe	LTO-6 BaFe Cust	LTO-6 MP	LTO-6 MP	LTO-7	LTO-7	LTO Cleaning Tapes
Media Format	Re-Writable	Re-Writable	Re-Writable	Re-Writable	Re-Writable	Re-Writable	
Quantity per Package	10	10	10	10	10	10	10
Capacity	2.5 TB Uncompressed	2.5 TB Uncompressed	2.5 TB Uncompressed	2.5 TB Uncompressed	6.0 TB Uncompressed	6.0 TB Uncompressed	
	6.25 TB Compressed	6.25 TB Compressed	6.25 TB Compressed	6.25 TB Compressed	15 TB Compressed	15 TB Compressed	
Tape Length	846 m	846 m	846 m	846 m	960 m	960 m	319 m
Tape Width (Metric)	12.65 mm	12.65 mm	12.65 mm	12.65 mm	12.65 mm	12.65 mm	12.65 mm
Tape Thickness	6.1 um	6.1 um	6.4 um	6.4 um	5.6 um	5.6 um	8.9 um
Particle Type	BaFe	BaFe	MP	MP	BaFe	BaFe	MP
Bit Density	343 kbits/inch	343 kbits/inch	343 kbits/inch	343 kbits/inch	485 kbits/inch	485 kbits/inch	
Number of Data Tracks	2176	2176	2176	2176	3584	3584	
Magnetic Layer Coercivity	2280 Oe	2280 Oe	2850 Oe	2850 Oe	2850 Oe	2850 Oe	
Archival Storage Life	30 years	30 years	30 years	30 years	30 years	30 years	
Warranty	Limited Lifetime Warranty	Limited Lifetime Warranty	Limited Lifetime Warranty	Limited Lifetime Warranty	Limited Lifetime Warranty	Limited Lifetime Warranty	Limited Lifetime Warranty
Environmental Operating							
Temperature	10 to 45°C	10 to 45°C	10 to 45°C	10 to 45°C	10 to 45°C	10 to 45°C	10 to 45°C
	(50 to 113°F)	(50 to 113°F)	(50 to 113°F)	(50 to 113°F)	(50 to 113°F)	(50 to 113°F)	(50 to 113°F)
Relative Humidity	10-80%	10-80%	10-80%	10-80%	10-80%	10-80%	10-80%
Maximum wet bulb temperature	26°C (79°F)	26°C (79°F)	26°C (79°F)	26°C (79°F)	26°C	26°C	26°C
Environmental Storage Conditions							
Temperature	16 to 32°C	16 to 32°C	16 to 32°C	16 to 32°C	16 to 32°C	16 to 32°C	16 to 32°C
	(61 to 90°F)	(61 to 90°F)	(61 to 90°F)	(61 to 90°F)	(61 to 90°F)	(61 to 90°F)	(60 to 89°F)
Relative Humidity	20-80%	20-80%	20-80%	20-80%	20-80%	20-80%	20-60%
Maximum wet bulb temperature	26°C (79°F)	26°C (79°F)	26°C (79°F)	26°C (79°F)	26°C (79°F)	26°C (79°F)	26°C (79°F)

Technical Specifications

HPE TS11xx Technology TeraPack Media

Non-Custom Labeled TS11xx Technology TeraPack Data Cartridges

HPE TS1150 and TS1155 JD Non-Custom Labeled TeraPack (9 Data Cartridges)   Q1G99A

Custom Labeled TS11xx Technology TeraPack Data Cartridges
NOTE: Custom labeled products allow customers to choose their own specific label sequence to be printed on their label order. A custom barcode label order form must be completed.

HPE TS1150 and TS1155 JD Custom Labeled TeraPack (9 Data Cartridges)   Q1H00A

Non-Custom Labeled Cleaning TS11xx Technology TeraPacks

HPE TS11xx Technology TeraPack (9 Cleaning Cartridges)

                                                                                                            Q1H04A

Part Name	HPE TS1150 and TS1155 Non CustomTeraPack	HPE TS1150 and TS1155 Custom TeraPack	HPE TS Series Maintenance TeraPack
Part Number	Q1G99A	Q1H00A	Q1H04A
Format	TS1150 and TS1155	TS1150 and TS1155 Cust	
Media Format	Re-Writable	Re-Writable	
Quantity per Package	9	9	9
Capacity	TS1150 10TB Uncompressed TS1155 15 TB Uncompressed	TS1150 10 TB Uncompressed TS1155 15 TB Uncompressed	
	TS1150 25TB Compressed TS1155 37.5TB Compressed	TS1150 25TB Compressed TS1155 37.5 TB Compressed	
Tape Length	1,072 m	1,072 m	318 m
Warranty	Limited Lifetime Warranty	Limited Lifetime Warranty	Limited Lifetime Warranty
Environmental Operating			
Temperature	16 to 32°C	16 to 32°C	16 to 32°C
	(61 to 90°F)	(61 to 90°F)	(60 to 90°F)
Relative Humidity	20-80%	20-80%	8-10%
Maximum wet bulb temperature	26°C (79°F)	26°C (79°F)	23°C (79°F)
Environmental Storage Conditions			
Temperature	16 to 25°C	16 to 25°C	
	(61 to 77°F)	(61 to 77°F)	
Relative Humidity	20-50%	20-50%	
Maximum wet bulb temperature	26°C (79°F)	26°C (79°F)	

Additional Media Options

HPE Empty LTO TeraPack with no Dust Cover and media.   Q1J40A

Technical Specifications

HPE Empty TS11XX Technology TeraPack with no Dust Cover and media.   Q1J41A

HPE TFinity ExaScale Tape Library Licenses

HPE TFinity ExaScale KMIP Encryption Key - enables 24 Drives   Q0G93A
              Quantity 1 license needed per Drive Frame

HPE TFinity ExaScale Shared Library Services QIP RIM Connect Software – enables tape library partitioning   Q0H04A
HPE Spectra SKLM Software Installation CD   Q1J59A
HPE TFinity ExaScale Spectra SKLM Encryption Key for Max Drives   Q1J62A
HPE T950/TFinity BlueScale Professional Encryption LTU   Q1J70A
HPE T950/TFinity Thin Provisioning LTU   Q1J73A

Additional Options

Model Name	Part Number
HPE BlueScale Vision Camera for Media Expansion Frame	Q1J38A
HPE BlueScale Vision Camera for Drive Expansion Frame	Q1J37A
HPE Accessory kit required for shipments to secure/black sites	Q1J39A
HPE TFinity ExaScale artwork, design, setup, and proofing for the custom front panels. Customer must complete the TFinity Custom Panel Order Form.	Q1J58A
HPE T950/TFinity Leveling Plate	Q1J74A
HPE RIM2 Robotic Interface Module	Q0H07A
HPE TFinity ExaScale BlueScale SD Card	Q0H05A
HPE LS Gen IV 1x Upgrade	Q0G97A
HPE T950/TFIN 24V 8Amp Power Pack	Q0G89A
HPE 5-12V 8Amp Power Pack	Q0G90A
Shipping Crate Ramp	Q0G85A
HPE Drive Bay Assembly	Q0G88A
HPE Ethernet Drive Bay Assembly	Q0H00A

> Each Drive Bay Assembly can hold up to 4 LTO or TS11xx Technology Drives and 1 Robotic Interface Module

Fibre Channel Cables

HPE 10m Duplex Multi-mode 50u LC/LC Optical Cable	Q0G67A
HPE 20m Duplex Multi-mode 50u LC/LC Optical Cable	Q0G68A
HPE 50m Duplex Multi-mode 50u LC/LC Optical Cable	Q0G69A

Power Cord   HPE 2.5m 220-240V AU Power Cord   Q0G56A
              HPE 2.5m 220-240V ZA/IN Power Cord   Q0G57A
              HPE 2.5m 220-240V UK Power Cord   Q0G58A

Technical Specifications

HPE 2.5m 220-240V IL Power Cord	Q0G59A
HPE 2.5m 220-240V JP Power Cord	Q0G60A
HPE 2.5m 220-240V EU Power Cord	Q0G61A
HPE NEMA L6-30P 220-240V 4.5m US Power Cord	Q0G62A
HPE C19 IEC ZA Power Cord	Q0G63A
HPE C19 IEC to NEMA 5-15P 110-120V 2.5m Power Cord	Q0G64A
HPE C13 to NEMA 5-15P 110-240V 50-60Hz 14AWG 2m Power Cord	Q0G65A
HPE C19 IEC309 220-240V 12AWG 4.6m Power Cord	Q0G66A
HPE C19 L6-20P 220-240V 20Amp 4.5m US Locking Power Cord	Q0G70A

**TFinity ExaScale
Support Options**

HPE TFIN 1yr Gold Assisted Self Maintenance	Q1G05A
HPE TFIN 1yr Gold Assisted Self Zone 2 Maintenance	Q1G06A
HPE TFIN 2yr Gold Assisted Self Maintenance	Q1G07A
HPE TFIN 2yr Gold Assisted Self Zone 2 Maintenance	Q1G08A
HPE TFIN Robotics and RIM 1yr 7x24 with 4hr Onsite Support	Q1G09A
HPE TFIN Robotics and RIM 1yr 7x24 with 4hr Onsite Zone 2 Support	Q1G10A
HPE TFIN 1yr Next Business Day Onsite Support	Q1G11A
HPE TFIN 1yr Next Business Day Onsite Zone 2 Support	Q1G12A
HPE TFIN Robotics and RIM 2yr 7x24 with 4hr Onsite Support	Q1G13A
HPE TFIN Robotics and RIM 2yr 7x24 with 4hr Onsite Zone 2 Support	Q1G14A
HPE TFIN Robotics and RIM 2yr Next Business Day Onsite Support	Q1G15A
HPE TFIN Robotics and RIM 2yr Next Business Day Onsite Zone 2 Support	Q1G16A
HPE TFIN BlueScale Software 1yr 7x24 with 4hr Onsite Support	Q1G17A
HPE TFIN BlueScale Software 1yr 7x24 with 4hr Onsite Zone 2 Support	Q1G18A
HPE TFIN BlueScale Software 2yr 7x24 with 4hr Onsite Support	Q1G19A
HPE TFIN BlueScale Software 2yr 7x24 with 4hr Onsite Zone 2 Support	Q1G20A
HPE TFIN BlueScale Software 2yr Next Business Day Onsite Support	Q1G21A
HPE TFIN BlueScale Software 2yr Next Business Day Onsite Zone 2 Support	Q1G22A
HPE TFIN 1 Unit Co-term Support	Q1G23A
HPE TFIN Drive 1yr 7x24 with 4hr Onsite Support	Q1G24A
HPE TFIN Drive 1yr 7x24 with 4hr Onsite Zone 2 Support	Q1G25A
HPE TFIN Drive 2yr 7x24 with 4hr Onsite Support	Q1G26A
HPE TFIN Drive 2yr 7x24 with 4hr Onsite Zone 2 Support	Q1G27A
HPE TFIN Drive 2yr Next Business Day Onsite Support	Q1G28A
HPE TFIN Drive 2yr Next Business Day Onsite Zone 2 Support	Q1G29A
HPE TFIN Drive Expansion Frame 1yr 7x24 with 4hr Onsite Support	Q1G30A
HPE TFIN Drive Expansion Frame 1yr 7x24 with 4hr Onsite Zone 2 Support	Q1G31A
HPE TFIN Drive Expansion Frame 2yr 7x24 with 4hr Onsite Support	Q1G32A
HPE TFIN Drive Expansion Frame 2yr 7x24 with 4hr Onsite Zone 2 Support	Q1G33A
HPE TFIN Drive Expansion Frame 2yr Next Business Day Onsite Support	Q1G34A
HPE TFIN Drive Expansion Frame 2yr Next Business Day Onsite Support	Q1G35A
HPE TFINJ 1yr Gold Assisted Self Maintenance	Q1G36A
HPE TFINJ 1yr Gold Assisted Self Zone 2 Maintenance	Q1G37A

Technical Specifications

HPE TFINJ 2yr Gold Assisted Self Maintenance	Q1G38A
HPE TFINJ 2yr Gold Assisted Self Zone 2 Maintenance	Q1G39A
HPE TFINJ TS11xx Technology Drive 1yr 7x24 with 4hr Onsite Support	Q1G40A
HPE TFINJ TS11xx Technology Drive 1yr 7x24 with 4hr Onsite Zone 2 Support	Q1G41A
HPE TFINJ TS11xx Technology Drive 2yr 7x24 with 4hr Onsite Support	Q1G42A
HPE TFINJ TS11xx Technology Drive 2yr 7x24 with 4hr Onsite Zone 2 Support	Q1G43A
HPE TFINJ TS11xx Technology Drive 2yr Next Business Day Onsite Support	Q1G44A
HPE TFINJ TS11xx Technology Drive 2yr Next Business Day Onsite Zone 2 Support	Q1G45A
HPE TFIN Service Bay 1yr 7x24 with 4hr Onsite Support	Q1G46A
HPE TFIN Service Bay 1yr 7x24 with 4hr Onsite Zone 2 Support	Q1G47A
HPE TFIN Service Bay 2yr 7x24 with 4hr Onsite Support	Q1G48A
HPE TFIN Service Bay 2yr 7x24 with 4hr Onsite Zone 2 Support	Q1G49A
HPE TFIN Service Bay 2yr Next Business Day Onsite Support	Q1G50A
HPE TFIN Service Bay 2yr Next Business Day Onsite Zone 2 Support	Q1G51A
HPE TFinity Spectra SKLM Encryption per Library Additional 2yr Support	Q1J65A
HPE TFinity Spectra SKLM Encryption per Library Additional 2yr Zone 2 Support	Q1J66A
HPE TFinity BlueScale Professional Encryption Support	Q1J69A
HPE TFinity BlueScale Professional Encryption Zone 2 Support	Q1J72A

TFinity ExaScale Professional Services Offerings	HPE Professional Services TFIN Onsite Installation Base	Q0G77A
	HPE Professional Services TFIN Expansion Frame Installation Base	Q0G78A
	HPE Professional Services TFIN Expansion Frame Installation Upgrade	Q0G79A
	HPE Professional Services TFIN Onsite (per Day) Consulting and Training	Q0G80A
	HPE Professional Services TFIN Onsite (per Week) Consulting and Training	Q0G81A
	HPE Professional Services TFIN Annual Preventive Maintenance	Q0G82A
	HPE Professional Services TFIN Individual Preventive Maintenance	Q0G84A
	HPE SKLM Basic Installation - Up to 5 days of Professional Services advanced installation for Spectra SKLM encryption option.	Q1J60A
	HPE Consulting Day for Multi-site or Multi-instance Spectra SKLM Installation	Q1J67A

Dimensions Weight	**Form Factor**	Free standing
	Frames each (Base, Drive Expansion, Media Expansion) - Physical (HxWxD)	79.125-82 x 29.0 x 43.25 inches (201.0-208.3 x 73.7 x 109.9 cm)
	Service Frames - Physical (HxWxD)	79.125-82 x 29.8 x 43.25 inches (201.0-208.3 x 75.7 x 109.9 cm)
	Frames each (Base, Drive Expansion, Media Expansion, Service) - Shipping (HxWxD)	86.4 x 42.0 x 55.2 inches (220.0 x 110.0 x 140.0 cm)
Base Frame	**Out of box**	810-821 lb (367-372 kg)
	Shipping	1,200-1,300 lbs (544-590 kg)

Technical Specifications

Drive Expansion Frame	**Out of box**	750-763 lb (340-346 kg)
	Shipping	1,155-1168 lbs (524-530 kg)
Media Expansion Frame	**Out of box**	564 lb (256 kg)
	Shipping	888 lbs (403 kg)
Service Frame (standard/bulk TAP)	**Out of box**	737 lb/824 lb (334 kg/374 kg)
	Shipping	1,079 lb/1166 lb (489 kg/529 kg)

NOTE: These weights are with no drives or media installed

Robotic and Host Interface	Fibre Channel, 8Gb/4Gb/2Gb Multi-mode optical, LC connector and optional Robotic Interface Module
Library Management Interface	One RJ-45 Ethernet port, 10/100Base-T.

Drive Performance
(1Kb = 1,000 bytes)

	LTO-7 Ultrium	**LTO-6 Ultrium**	**TS1155 Technology**	**TS1150 Technology**
Native Data transfer rate	300 MB/s with LTO-7 media	160 MB/s with LTO-6 media	360 MB/s with TS1155 Technology	360 MB/s with TS1150 Technology
Average load, thread, & initialize time	12 seconds	12 seconds	12seconds	12seconds
Average unload time	17 seconds	17 seconds	17 seconds	17 seconds
Average First File Access Time	60 seconds	60 seconds	55 seconds	55 seconds

Bulk load unload	144 LTO and 126 Enterprise Slots	Maximum number of Entry/Exit Slots

NOTE: Minimum of 20 LTO and 18 Enterprise slot Entry/Exit ports comes with each library. 140 LTO or 126 Enterprise tape cartridges may be imported/exported in to the library at one time if Bulk Service Bays are configured.

Input Requirements	Auto-range to domestic and international AC voltages	
	Nominal / Range Line Frequency	
Input Requirements Power Consumption	Range Line Voltage	50 Hz / 60Hz
	Typical Input Current	200 VAC to 240 VAC
	VA max 960W 613W (N+1)	13A max
Connectors	FC	
Drives Supported	Native Fibre Drives: LTO-7 Ultrium, LTO-6 Ultrium, TS1155 and TS1150 Technology Drive	LC Connector
Maximum Number of Drives	24 drives per Base Frame and 24 per Drive Expansion Frame up to maximum of 144 drives per library with multiple expansion frames	
Reliability (Library Only) **MTBF**	6.3 Years	
Reliability (Library Only) **MCBF**	3.1 Million	

Technical Specifications

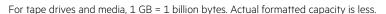|		
	MTTR	3 minutes for hot-swap components. 30 minutes for non-hot-swap-components
Reliability (Tape Drive)	**MTBF**	250,000 power-on hours 100% duty cycle
Reliability (Tape Drive)	**MSBF**	100,000
Relative Humidity (non-condensing)	**Shipping**	Shipping & Storage: 10% to 95% non-condensing
	Operating	Operating: 20% to 80% non-condensing
Temperature Range	**Operating** **Shipping**	Dry Bulb: 10° to 40° C/50° to 104° F Wet Bulb: 25° C (77° F) maximum
	Safety	Dry Bulb: -40° to 65° C/-40° to 149° F Wet Bulb: 46° C (115° F) maximum
Regulatory Compliance		
	Safety **EMC**	UL 60950-1, 2nd ed. Including am1, am2 IEC 60950-1(ed.2); am1;am2
	Country Regulatory Compliance	CISPR 22/class A, CISPR 24, FCC/Class A
	Regulatory Model Number	For country specific compliance contact your local sales representative. TFinity

Summary of Changes

Date	Version History	Action	Description of Change
12-Jun-2017	From Version 5 to 6	Changed	Fixed typos
05-Jun-2017	From Version 4 to 5	Changed	Changes made throughout the QuickSpecs
27-Mar-2017	From Version 3 to 4	Changed	Changes made throughout the QuickSpecs
17-Feb-2017	From Version 2 to 3	Changed	Changes made throughout the QuickSpecs
09-Dec-2016	From Version 1 to 2	Changed	Changes made to the Overview Section
28-Nov-2016	Version 1	Created	Document Created

f   𝕏   in   ✉

Sign up for updates

Hewlett Packard Enterprise