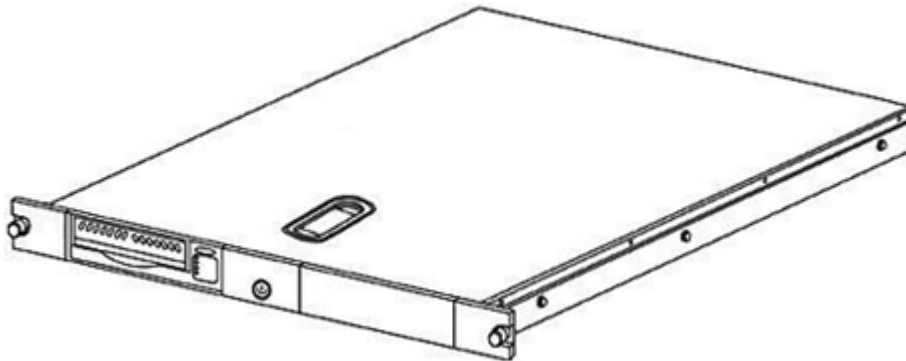


Overview

The HP Rack-mount Kits provide a high-density, rack-mountable tape drive and removable hard disk drive enclosure for direct-attach SCSI, USB, and SAS backup and archiving applications. Because these enclosures use standard internal tape drives and internal removable hard disk drives, they provide a cost-effective means of mounting tape drives and removable hard disk drives in rack server environments. These enclosures provide customers with scalability, allowing the customer to add drives and migrate to new tape or removable hard disk drive technologies as their capacity and performance needs grow. HP Rack-mount Kits are supported by ProLiant, HP Integrity, and AlphaServer platforms.

1U Rack-mount Kit

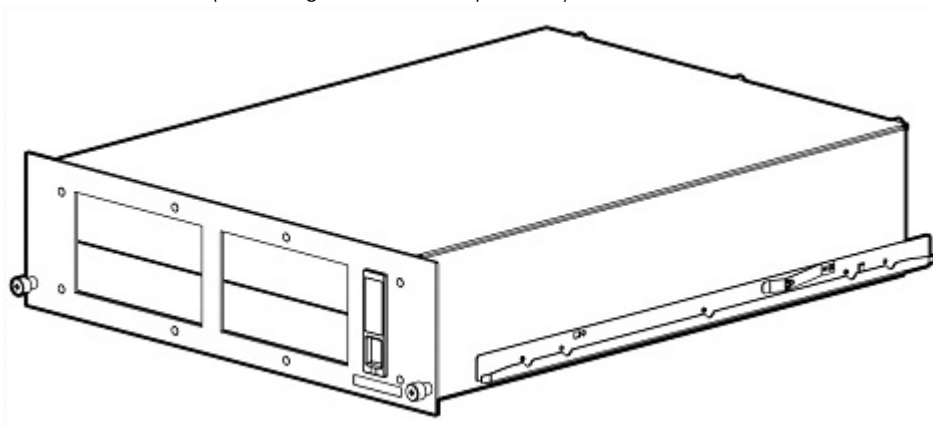
Available in SCSI, SAS and USB interfaces, the 1U Rack-mount Kit accommodates up to two half-height internal tape drives and supports a range of tape technologies, including DAT, and half-height Ultrium, with a maximum capacity of 6 TB using two LTO-5 Ultrium 3000 drives. The USB enclosure supports DAT 40, DAT 72, DAT 160 and the DAT 320 USB tape drives with a maximum capacity of 640 GB per backup session when using two DAT 320 USB drives. The 1U USB enclosure also supports HP RDX 160, 320, 500 and 1 TB Removable Disk Backup Systems with a maximum capacity of 2 TB per backup session when using two RDX 1 TB USB removable hard disk drives. The 1U SAS enclosure supports up to two DAT 160 SAS, DAT 320 SAS, Ultrium 448 SAS, Ultrium 920 SAS, Ultrium 1760 SAS and Ultrium 3000 SAS tape drives with a maximum capacity of 6 TB when using two LTO-5 Ultrium 3000 SAS drives (assuming 2:1 data compression).



HP 1U Rack-mount Kit

3U Rack-mount Kit

Available in SCSI and SAS interfaces. The 3U Rack-mount Kit holds up to two full-height internal tape drives, four half-height internal tape drives, or a combination of one full-height and two half-height tape drives. This enclosure supports a wide range of tape technologies, including DAT, DLT VS, SDLT, and Ultrium, with a maximum capacity of 6 TB using two LTO-5 Ultrium 3280 or 12 TB with four LTO-5 Ultrium 3000 SAS drives (assuming 2:1 data compression).



HP 3U Rack-mount Kit



Overview

What's New

- The new latching switch for the 1U SCSI and USB Rack-mount Kit allows for auto restart after power has been interrupted and restore



Features

Key Features

1U SCSI Rack-mount Kit

- High-density 1U Rack-mount form factor
- The SCSI enclosure is capable of mixing technologies and is compatible with a wide range of single-ended and LVD SCSI internal tape drives, including:
 - DAT 40, DAT 72 and DAT 160 SCSI Tape Drives
 - LTO-1 Ultrium 232, LTO-2 Ultrium 448, LTO-3 Ultrium 920 and LTO-4 Ultrium 1760 SCSI Tape Drives
- SCSI enclosure Provides up to 3.2 TB of storage capacity (assuming 2:1 compression using two LTO-4 Ultrium 1760 drives)
- Data transfer rates up to 1 TB/hr (assuming 2:1 data compression using two LTO-4 Ultrium 1760 drives)
- Latching switch for the 1U rack allows for auto restart after power has been interrupted and restore
- SAS Upgrade Kit available in order to support one SAS drive and one SCSI drive.

1U USB Rack-mount Kit

- High-density 1U Rack-mount form factor
- The USB enclosure supports , DAT 40 USB, DAT 72USB, DAT 160 USB and DAT 320 USB tape drives and also supports RDX 160GB, RDX 320GB, RDX 500GB and RDX 1TB removable hard disk drives.
- USB enclosure provides up to 640 GB of storage capacity, using two DAT 320 USB drives and up to 2 TB of storage capacity using two RDX 1 TB removable hard disk drives.
- Data transfer rates of 86.4G/hour (assuming 2:1 data compression) using two DAT 320 drives and up to 216GB/hour using two RDX 1 TB removable hard disk drives.
- Latching switch for the 1U rack allows for auto restart after power has been interrupted and restore
- SAS Upgrade Kit available in order to support one SAS drive and one USB drive

1U SAS Rack-mount Kit

- High-density 1U Rack-mount form factor with auto-configuring 1.5Gb, 3Gb and 6Gb SAS support
- The SAS enclosure supports up to two DAT 160 SAS, DAT 320 SAS, Ultrium 448 SAS, Ultrium 920 SAS, Ultrium 1760 SAS or Ultrium 3000 SAS tape drives.
- Provides up to 6 TB of storage capacity (assuming 2:1 compression) using two Ultrium 3000 drives.
- Data transfer rates up to 2 TB/hr (assuming 2:1 compression) using two Ultrium 3000 drives
- Latching switch for the 1U rack allows for auto restart after power has been interrupted and restore
- Supports up to two separate SAS channels for connectivity to two separate servers or two separate HBA ports.

3U SCSI Rack-mount Kit

- Provides up to 3.2 TB of compressed storage capacity using two LTO-4 Ultrium 1840 or 6.4 TB with four LTO-4 Ultrium 1760 tape drives
- 3U Rack-mount form factor.
- Supports two full-height or four half-height SCSI-based tape drives, or a combination one full-height and two half-height devices.
- Includes new ease-of-use features for easier integration and management of HP tape devices
- Compatible with a wide range of single-ended and LVD SCSI internal tape drives, including:
 - DAT 40, DAT 72 and DAT 160 SCSI Tape Drives
 - DAT 72x6 Tape Autoloader
 - DLT VS160 SCSI Tape Drives
 - SDLT 600 SCSI Tape Drives
 - LTO-1 Ultrium 232, LTO-2 Ultrium 448, LTO-3 Ultrium 920, LTO-3 Ultrium 960, LTO-4 Ultrium 1760 and LTO-4 Ultrium 1840 SCSI Tape Drives



Features

3U SAS Rack-mount Kit

- Supports up to four separate SCSI buses
- Top access and removable drive trays allow customers to slide unit out of rack for easier access to tape drives
- Provides up to 6 TB of compressed storage capacity using two LTO-5 Ultrium 3280 SAS drives or 12 TB using 4 LTO-5 3000 SAS drives.
- 3U Rack-mount form factor with auto-configuring 1.5Gb, 3Gb and 6Gb SAS support
- Supports up to four SAS-based, half-height tape drives (DAT 160 SAS, DAT 320 SAS, Ultrium 448 SAS, Ultrium 920 SAS, Ultrium 1760 SAS, Ultrium 3000 SAS) or two SAS-based, full-height tape drives (Ultrium 1840 SAS, Ultrium 3280 SAS)
- Includes new ease-of-use features for easier integration and management of HP tape devices
- Supports up to four separate SAS channels for connectivity to four separate servers or four separate HBA ports. Top access and removable drive trays allow customers to slide unit out of rack for easier access to tape drives

Customer Benefits

- Small footprint allows the customer to consolidate external storage needs within a high-density form factor.
- Scalability allows customers to add tape drives and migrate to new tape drive technologies that meet their capacity and performance needs as their storage requirements change.
- Support of multiple tape drive technologies as well as RDX removable hard disk drive technology, which reduces risk and protect customers' investments.
- Support of multiple interfaces including SCSI, SAS, and USB.
- Latching switch for all 3U and 1U Rack-mount kits allows auto restart after power has been interrupted and restored
- New ease-of-use features increase the customer's efficiency in configuring, integrating, and managing external storage devices.
- Affordable pricing allows customer to match their level investment in storage to their current or future business needs.
- Thoroughly tested and qualified with HP ProLiant, HP Integrity and AlphaServer platforms and industry leading software, resulting in easier installation and fewer problems.

Family Comparison		
	1U Rack-mount Kit	3U Rack-mount Kit
Maximum Capacity (compressed)	3.2 TB (SCSI) 6 TB (SAS) 1 TB (USB)	6.4 TB (SCSI) 12 TB (SAS)
Maximum Number of Drives	2 half-height	4 half-height or 2 full-height
Drives Supported	RDX 160 RDX 320 RDX 500 RDX 1TB DAT 40 DAT 72 DAT 160 DAT 320 Ultrium 232 Ultrium 448 Ultrium 920 Ultrium 1760	Half-Height Devices: DAT 40 DAT 72 DAT 160 DAT 320 Ultrium 232 Ultrium 448 Ultrium 920 Ultrium 1760 Ultrium 3000 Full-Height Devices:



Features

	Ultrium 3000	Ultrium 960 Ultrium 1840 Ultrium 3280
Interface	SCSI (LVD/SE), 6Gb SAS, USB	SCSI (LVD/SE), 6Gb SAS
High-Availability Features	None	None



Product Highlights

Scalability	HP Rack-mount kits support up to four tape drives in the 3U and two tape drives or two RDX removable hard disk drives in the 1U. Tape drives and RDX removable hard disk drives can be added at any time, allowing flexibility to add capacity or change tape technologies at any time.
Configuration	SCSI: The standard bus configuration includes two SCSI buses with support for up to two drives per bus. Customers can purchase an LVD Cable Kit that will extend the unit to four SCSI buses supporting one drive per bus on the 3U. Using independent SCSI buses for each drive provides the best performance. SAS: The standard configuration includes two SAS channels on the 1U and four SAS channels on the 3U. USB: The standard configuration includes two USB ports on the 1U.
Ease-of-Use Features	HP Rack-mount kits include features designed to provide for easier access and management of installed tape drives and RDX removable hard disk drives. The cover is easily unscrewed and slid off for ease of access. Each unit also includes two slide-out drive trays that allow for easy removal of the internal tape drives and RDX removable hard disk drives through the top access cover. LEDs on the front panel indicate when the power is on and when service is required.
Compatibility and Integration Testing	HP Rack-mount Kits use in-house technology, which ensures the customer of full compatibility with HP ProLiant, Integrity and AlphaServer platforms. HP thoroughly tests products with leading backup software and operating systems.

HP Server Compatibility

NOTE: Connecting a Rack-mount Kit to any of the supported ProLiant, AlphaServer, and HP Integrity platforms may require the use of a secondary controller, host bus adapter, or Smart Array controller. Please see the list of supported controllers, host bus adapters, and Smart Array controllers at: <http://www.hp.com/storage/SPOCK> to select the appropriate model.

HP Rack-mount Kits are supported on the following classes of HP systems:

- HP ProLiant servers
- HP Alpha servers
- HP rx and rp series servers
- HP tc series servers

For details of which tape drive and RDX removable hard disk drive models work with which systems, including third-party systems, visit: <http://www.hp.com/storage/SPOCK> for the latest hardware compatibility information

OS Support	Operating system compatibility will depend on the drives used in the rack enclosure. For the latest list of servers, operating systems, and backup software that support HP tape drives and RDX removable hard disk drives, check the tape/RDX removable hard disk drive backup compatibility pages on our web site at: http://www.hp.com/storage/SPOCK .
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Software Support	Backup application compatibility also depends on the drives used in the Rack-mount Kit. For the latest list of servers, operating systems, and backup software that support HP tape drives and RDX removable hard disk drives, check the tape/RDX removable hard disk drive backup compatibility pages on our web site at: http://www.hp.com/storage/SPOCK .
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Service and Support, HP Care Pack, and Warranty Information

Warranty 3-0-0 (Three year parts)

HP Care Pack Services: Packaged server and storage services for increased uptime, productivity and ROI

When you buy HP server and storage products and solutions, it's also a good time to think about what levels of support you may need. Our portfolio of service options reduce deployment and management worries while helping you get the most out of your server and storage investments. We take a holistic approach to your environment, bridging servers, blades, storage, software and network infrastructures with our packaged HP Care Pack Services for servers and storage.

Protect your business beyond warranty

When it comes to robustness and reliability, standard computing equipment warranties have matured along with technology. Good news that can also create problems stemming from depending on standard warranties designed to only protect against product defects and some downtime causes. Using a standard approach to warranty uplifts, such as HP Care Pack Services, helps reduce downtime risks and provides operational consistency for mission-critical and standard business computing.

HP Care Pack Services: Upgrading or extending standard server and storage warranties cost effectively

HP Care Pack Services offer a standard reactive hardware and software support services suite sold separately, or combined with our Support Plus and Support Plus 24 services. The portfolio also provides a combination of integrated proactive and reactive services, such as Proactive 24 Service and Critical Service. In addition with HP Proactive Select, you can acquire the specific proactive constancy and technical services. HP Proactive Select menu offers a broad set of service options that you can mix and match depending on your specific requirements. Proactive service options include offers for server, storage, network, SAN device, software, environment and education services.

HP server and storage lifecycle support services offers a full spectrum of customer care-from technology support to complex migrations to complete managed services. HP Factory Express provides customization, integration and deployment services for turnkey solutions. HP Education Services offer flexible, comprehensive training on to help your IT staff get the most out of your server and storage investments. HP Financial solutions extend innovative financing and cost-effective asset management programs-from purchase to equipment retirement.

Learn more: www.hp.com/services/servers and www.hp.com/services/storage

NOTE: Care Pack Services availability may vary by product and country.

HP Care Pack Services are sold by HP and HP Authorized Service Partners:

- Services for customers purchasing from HP or an enterprise reseller are quoted using HP order configuration tools.
 - Customers purchasing from a commercial reseller can find HP Care Pack Services at: <http://www.hp.com/go/lookuptool>
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Service and Support, HP Care Pack, and Warranty Information

Recommended HP Care Pack Services for optimal satisfaction with your HP product.

Recommended Support **3-Year HP Support Plus 24**

For a higher return on your storage investment, HP Support Plus 24 provides integrated hardware and software support services designed specifically for your technology. Available 24x7, this 3-year combined reactive support option delivers onsite hardware support and over-the-phone software support around-the-clock. Leverage the full strength of HP Technology Services - customers can trust the services professionals at HP to work collaboratively with them, putting our strategic and technical know-how to work across their entire infrastructure.

- Improve uptime with responsive hardware and software services
- Enjoy consistent service coverage across geographically dispersed sites
- Update HP software at a predictable cost
- Increase customer satisfaction-with no interoperability gaps

<http://h20195.www2.hp.com/V2/GetPDF.aspx/5981-6638EEE>

**Recommended
Deployment**

HP Install Storage Autoloader/Tape Drive Array Service

For smooth start up and better business outcomes, HP Install Storage Autoloader/Tape Drive Array Service- this service provides initial hardware installation into your server technology environment (system configuration is not included). Leverage the full strength of HP Technology Services - customers can trust the services professionals at HP to work collaboratively with them, putting our strategic and technical know-how to work across their entire infrastructure.

- Allows your IT resources to stay focused on their core tasks and priorities
- Reduces implementation time, impact and risk to your storage environment

<http://h71028.www7.hp.com/ERC/downloads/5981-9356EN.pdf>

Related Services

HP Backup and Recovery Solution Service

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

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

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

<http://h20195.www2.hp.com/V2/GetPDF.aspx/5982-5442EN.pdf>

Optional HP Care Pack Services that will enhance your HP product experience.

5-Year HP Support Plus 24



Service and Support, HP Care Pack, and Warranty Information

As an alternative to our recommended support level, for customers who need to improve uptime with responsive 24x7 product support:

HP Support Plus 24 helps you increase performance and availability with comprehensive, consistent hardware and software services. Working with your IT team, HP Services engineers deliver onsite hardware support and over-the-phone software support around-the-clock 365 days per year. Service coverage encompasses HP products and selected multivendor hardware and software.

In addition, this convenient HP Care Pack packaged service makes software updates available to you at substantial savings.

Choose Support Plus 24 when you need to:

- Improve uptime with responsive hardware and software services available anytime
- Cost-effectively obtain expert 24x7 multivendor hardware and software support
- Enjoy consistent service coverage across geographically dispersed sites
- Update HP and selected third-party software at a predictable cost
- Take advantage of subscription savings on software updates

<http://h20195.www2.hp.com/V2/GetPDF.aspx/5981-6638EN.pdf>

eSupport

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

Support Portal

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

Features include:

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

Access to certain features of the support portal requires an HP service agreement. To access the support portal, visit: <http://www.hp.com/support>

Customer Technical Training

HP Education Services

In today's cost-conscious business environment, IT professionals, developers, consultants and users face an interesting challenge: how to keep up with the latest technologies and expand important skills while delivering profitable results on current projects. To help address this challenge, HP offers innovative training solutions that help keep you up-to-date on virtualization, server, storage, Insight Control, Citrix, Microsoft® and open source/Linux-related topics-while spending less time away from business-critical activities.



Service and Support, HP Care Pack, and Warranty Information

HP Services Awards

HP Technology Services continues to be recognized for service and support excellence by customers, partners, industry organizations and publications around the world. Recent honors and award reflect our services team's dedications, technical expertise, professionalism and uncompromising commitment to customer satisfaction.

Additional Services Information

To learn more on HP ProLiant servers, HP BladeSystem servers and HP storage products, please contact your HP sales representative or HP Authorized Channel Partner. Or visit: www.hp.com/services/proliant or www.hp.com/services/bladesystem or <http://www.hp.com/hps/storage>



Configuration Information

Pre-Configured Models

NOTE: The HP Rack-mount Kits are supported by HP ProLiant, AlphaServer, and HP-UX platforms.

HP 1U USB Rack-mount Kit with one DAT 320 USB drive	AP835B
HP 1U USB Rack-mount Kit with one DAT 160 USB drive	AG703B
HP 1U USB Rack-mount Kit with one DAT 72 USB drive	AG594B
HP 1U SCSI Rack-mount Kit with one LTO-2 Ultrium 448 drive	DW028C
HP 1U SCSI Rack-mount Kit with one LTO-3 Ultrium 920 drive	EH903B
HP LTO-4 Ultrium 1760 SAS (1) in 1U Rack-mount Kit	EH946B
HP LTO-5 Ultrium 3000 SAS Tape Drive in 1U Rack-mount	EJ014A
HP Ultrium 960 (1) SCSI Tape Drive in 3U Rack-mount Kit	Q1595B
HP LTO-4 Ultrium 1840 (1) SCSI Tape Drive in 3U Rack-mount Kit	EH926A
HP LTO-5 Ultrium 3280 SAS Tape Drive in 3U Rack-mount	EJ013A

NOTE: When ordering this product factory racked, an additional drive cannot be added in the factory. An additional drive can be installed by the customer.

NOTE: #0D1 will appear after the part number on the sales order if HP factory integration is indicated.

Step 1 - 1U/3U Rack-mount Kit

Select one:

Model	Part Number
HP 1U USB Rack-mount Kit USB rack-mountable enclosure (1U) with power supply, 4 meter USB cable, fans, power cord, quick deploy rail kit including sliding universal rails for ProLiant, AlphaServer and Rack System/E racks quick release levers for fast and easy serviceability and in-rack tool-less access, user's guide on CD and documentation. NOTE: #0D1 will appear after the part number on the sales order if HP factory integration is indicated.	A8007B
HP 1U SCSI Rack-mount Kit Wide SCSI LVD rack-mountable enclosure (1U) with power supply, HD - VHDC 12' SCSI cable, fans, power cord, quick deploy rail kit including sliding universal rails for ProLiant, AlphaServer and Rack System/E racks, Velcro hood/loop strap and quick release levers for fast and easy serviceability and in-rack tool-less access, user's guide on CD and documentation. NOTE: #0D1 will appear after the part number on the sales order if HP factory integration is indicated.	A7445C
HP 1U SAS Rack-mount Kit 6Gb/sec SAS rack-mountable enclosure (1U) with power supply, fans, power cord, external 2M mini-SAS (8088) cable, quick deploy rail kit including sliding universal rails for ProLiant, AlphaServer and Rack System/E racks, Velcro hood/loop strap and quick release levers for fast and easy serviceability and in-rack tool-less access, user's guide on CD and documentation. NOTE: #0D1 will appear after the part number on the sales order if HP factory integration is indicated.	AE459B
HP 3U Rack-mount Kit	274338-B22



Configuration Information

Wide SCSI LVD rack-mountable enclosure (3U) with power supply, HD - VHDC 12' SCSI cable, Ultra 320 SCSI Cable Kit, fans, power cord, 9000 and 10000 series rack compatible rail kit (Optional rail kit available for AlphaServer Rack and Rack System/E) User's Guide on CD, Documentation.

NOTE: #0D1 will appear after the part number on the sales order if HP factory integration is indicated.

HP 3U Rack-mount SAS Kit

AG576B

6Gb/sec SAS rack-mountable enclosure (3U) with power supply, fans, power cord, external 2M mini-SAS (8088) cable , 9000 and 10000 series rack compatible rail kit

(Optional rail kit available for AlphaServer Rack and Rack System/E)

User's Guide on CD, Documentation.

NOTE: #0D1 will appear after the part number on the sales order if HP factory integration is indicated.

Step 2 – Additional/Related Options

Select each required option with quantities specified

NOTE: The following is a list of additional/related options. Some may be discontinued.

Tape Drives	Description	Part Number
	HP DAT 40 Internal Tape Drive NOTE: Supported by the 1U SCSI and 3U SCSI Rack-mount Kits.	C5686C
	HP DAT 40 USB Internal Tape Drive NOTE: Supported by the 1U USB Rack-mount Kit.	DW022A
	HP DAT 72 Internal Drive NOTE: Supported by the 1U SCSI and 3U SCSI Rack-mount Kits.	Q1522B
	HP DAT 72 USB Internal Tape Drive NOTE: Supported by the 1U USB Rack-mount Kit.	DW026A
	HP DAT 160 SCSI Internal Tape Drive NOTE: Supported by the 1U SCSI and 3U SCSI Rack-mount Kits.	Q1573A
	HP DAT 160 SAS Internal Tape Drive NOTE: Supported by the 1U SAS and 3U SAS Rack-mount Kits.	Q1587A
	HP DAT 160 USB Internal Tape Drive NOTE: Supported by the 1U USB Rack-mount Kit.	Q1580A
	HP DAT 320 SAS Internal Tape Drive NOTE: Supported by the 1U SAS and 3U SAS Rack-mount Kits.	AJ830A
	HP DAT 320 USB Internal Tape Drive NOTE: Supported by the 1U USB Rack-mount Kit.	AJ825A
	HP LTO-1 Ultrium 232 SCSI Internal Tape Drive NOTE: Supported by the 1U SCSI and 3U SCSI Rack-mount Kits.	DW064A
	HP LTO-2 Ultrium 448 Internal Tape Drive NOTE: Supported by the 1U SCSI and 3U SCSI Rack-mount Kits.	DW016A
	HP LTO-2 Ultrium 448 SAS Internal Drive NOTE: Supported by the 1U SAS and 3U SAS Rack-mount Kit.	DW085A
	HP LTO-3 Ultrium 920 SCSI Internal Tape Drive NOTE: Supported by the 1U SCSI and 3U SCSI Rack-mount Kit.	EH841A



Configuration Information

HP LTO-3 Ultrium 920 SAS Internal Tape Drive NOTE: Supported by the 1U SAS and 3U SAS Rack-mount Kit.	EH847A
HP LTO-3 Ultrium 960 Internal Tape Drive NOTE: Supported by the 3U SCSI Rack-mount Kits.	Q1538A
HP LTO-4 Ultrium 1760 SCSI Internal Tape Drive NOTE: Supported by the 1U SCSI and 3U SCSI Rack-mount Kits.	EH921A
HP LTO-4 Ultrium 1760 SAS Internal WW Tape Drive NOTE: Supported by the 1U SAS and 3U SAS Rack-mount Kit.	EH919A
HP LTO-4 Ultrium 1840 SCSI Internal WW Tape Drive NOTE: Supported by the 3U SCSI Rack-mount Kits.	EH853A
HP LTO-4 Ultrium 1840 SAS Internal Tape Drive NOTE: Supported by the 3U SAS Rack-mount Kits.	EH860A
HP LTO-5 Ultrium 3000 SAS Internal Tape Drive NOTE: Supported by the 1U (AE459B) and 3U (AG576B) SAS rack-mount kits.	EH957A
HP LTO-5 Ultrium 3280 SAS Internal Tape Drive NOTE: Supported by the 3U (AG576B) SAS Rack-mount Kit.	EH899A

Removable Disk Drive	Description	Part Number
	HP RDX160 Internal Removable Disk Backup System NOTE: Supported by the 1U USB Rack-mount Kit.	AJ765A
	HP RDX320 Internal Removable Disk Backup System NOTE: Supported by the 1U USB Rack-mount Kit.	AJ767A
	HP RDX500 Internal Removable Disk Backup System NOTE: Supported by the 1U USB Rack-mount Kit.	AJ934A
	HP RDX1 TB Internal Removable Disk Backup System NOTE: Supported by the 1U USB Rack-mount Kit.	BV847A

Q Media	Description	Part Number
	HP DDS-3 24 GB Data Cartridge (125m)	C5708A
	HP DDS-4 40 GB Data Cartridge (150m)	C5718A
	HP DAT 72 Data Cartridge (170m)	C8010A
	HP DAT 160 160GB Data Cartridge	C8011A
	HP DAT 320 320GB Data Cartridge	Q2032A
	HP DDS/DAT Cleaning Cartridge	C5709A
	HP RDX 160GB Removable Disk Cartridge	Q2040A
	HP RDX 320GB Removable Disk Cartridge	Q2041A
	HP RDX 500GB removable disk cartridge	Q2042A
	HP RDX 1 TB Removable Disk Cartridge	Q2044A
	HP DLTtape IV Data Cartridge	C5141F
	HP DLT VS1 160GB Data Cartridge	C8007A
	HP DLT1/VS Cleaning Cartridge NOTE: For DLT VS drive only.	C7998A
	HP DLTtape Cleaning Cartridge NOTE: For non-DLT VS drives only.	C5142A



Configuration Information

HP SDLT I 220-320 GB Data Cartridge	C7980A
HP SDLT II 600 GB Data Cartridge	Q2020A
HP SDLT Cleaning Cartridge (For use with the SDLT 320 and SDLT 600)	C7982A
HP Ultrium 200 GB Data Cartridge	C7971A
HP Ultrium 400 GB Data Cartridge	C7972A
HP Ultrium 800 GB Rewritable Data Cartridge (For use with the Ultrium 960 Drive)	C7973A
HP Ultrium 800 GB WORM Data Cartridge (For use with the Ultrium 960 Drive)	C7973W
HP LTO4 Ultrium 1.6TB Read/Write Data Cartridge (For use with the LTO-4 Drives)	C7974A
HP LTO4 Ultrium 1.6TB WORM Data Tape Cartridge (For use with the LTO-4 Drives)	C7974W
HP LTO-5 Ultrium 3TB RW Data Cartridge (For use with the LTO-5 Drives)	C7975A
HP LTO-5 Ultrium 3TB WORM Data Cartridge (For use with the LTO-5 Drives)	C7975W
HP Ultrium Universal Cleaning Cartridge	C7978A

USB Cable Kit

HP USB Cable/Panel Option Kit ALL This cable kit can be purchased to convert a 1U SCSI Rack-mount kit to a USB interface to support the DAT USB drives. It includes 1 - 5 meter USB cable, 1- plastic grommet, 1- metallic panel, and documentation. All pieces are pre-assembled for easy implementation.	396114-B21
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NOTE: Go to <http://www.hp.com/storage/SPOCK> to confirm what cable is needed.

Optional SCSI Cable - add additional SCSI buses to the 3U Rack-mount Kits for use with certain legacy tape drives.	HP Ultra 320 SCSI Cable Kit A field upgrade kit required when going from 2 to 4 ports on the 3U Rack-mount kit. Also required for the following Rack-mount kits when adding ultra 160 or greater drives (350546-B21, 350545-B21, 350544-B21, 274338-B21), or to any of the 5U Rack-mount Kits.	DW063B
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Required External SCSI Cables - Required cables needed to connect the enclosure/drives to the host(s). Once cable per bus is needed.	VHDCI/Wide 12 Ft.Cable 68-pin HD to 68-pin NOTE: For SE and LVD SCSI tape devices.	341177-B21
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Optional External SAS Cable	HP 1U SAS TP I-E 3HDDs X 1Tape Drive X4M Server Cable Assembly Kit NOTE: This cable is needed to connect SAS enclosure/drives to the motherboard on certain servers. See http://www.hp.com/storage/SPOCK for support details.	AE464A
	HP SAS MIN-MIN 3X1X-5M Cable Assembly Kit NOTE: This cable is required to connect SAS enclosure/drives to the motherboard on HP ProLiant DL360G5 and DL365G5 SAS servers	AG452A



Configuration Information

HP 1U SAS Ext-Min 1x-4M 8088/8470 Cable Assembly Kit	AE468A
NOTE: This cable is needed to connect to SAS SC44Ge HBA external port on server	
HP SAS External-Min 1x-2M 8088/8470 Cable Assembly Kit	AE466A
NOTE: This cable is used to connect to SAS SC44Ge HBA external port on server	
HP SAS Min-Min 1x-2M (8088) Cable Assembly Kit	AE470A
NOTE: This cable is used to connect to SAS HBA mini-SAS external port on server (e.g., P212, P411, P800 Smart Array Controllers)	
HP SAS MIN-MIN 1X-4M (8088) Cable Assembly Kit	AE465A
NOTE: This cable is used to connect to SAS HBA mini-SAS external port on server (e.g., P212, P411, P800 Smart Array Controllers)	
HP 2m External Mini-SAS (8088) to 4x1 Mini-SAS Cable	AN975A
NOTE: This cable is used to connect up to 4 SAS tape drives to one SAS HBA mini-SAS external port on server (e.g., P212, P411, P800 Smart Array Controllers)	
HP 4m External Mini-SAS (8088) to 4x1 Mini-SAS Cable	AN976A
NOTE: This cable is used to connect up to 4 SAS tape drives to one SAS HBA mini-SAS external port on server (e.g., P212, P411, P800 Smart Array Controllers)	

Rail Kit	Alpha Rail Kit for 3U Rack-mount	280571-001
	NOTE: Required for installation of 3U Rack-mount Kit in AlphaServer rack.	
	NOTE: The rail kit option listed above can also be used to install HP Rack-mount Kits in HP Rack System/E cabinets.	

Host Bus Adapters, Controllers, and Accessories for ProLiant Servers

SCSI Controllers

HP SC11Xe Ultra320 Single Channel/ PCIe x4 SCSI Host Bus Adapter	412911-B21
NOTE: Recommended SCSI HBA for connecting Ultrium tape drives to G6/G7 ProLiant servers. Please visit: http://www.hp.com/storage/SPOCK for a complete list of Ultrium tape drive compatibility with ProLiant servers and other industry standard servers.	
HP U320 64bit Single Channel SCSI G2 Host Bus Adapter	374654-B21
NOTE: Recommended SCSI HBA for connecting Ultrium tape drives to G5 ProLiant servers. Please visit: http://www.hp.com/storage/SPOCK for a complete list of Ultrium tape drive compatibility with ProLiant servers and other industry standard servers.	

SAS Controllers

HP Modular Smart Array SC44Ge 1-ports Int/1-ports Ext PCIe x8 SAS Host Bus Adapter	416096-B21
NOTE: Recommended SAS HBA for connecting Ultrium tape drives to G5 ProLiant servers. Please visit: http://www.hp.com/storage/SPOCK for a complete list of Ultrium tape drive compatibility with ProLiant servers and other industry standard servers.	
HP Smart Array P212/ZM 1-ports Int/1-ports Ext PCIe x8 SAS Controller	462828-B21
NOTE: Recommended SAS HBA for connecting Ultrium tape drives to G6/G7 ProLiant servers. Please visit: http://www.hp.com/storage/SPOCK for a complete list of Ultrium tape drive compatibility with ProLiant servers and other industry standard servers.	
HP Smart Array P400/256 2-ports Int PCIe x8 SAS Controller	405132-B21
HP Smart Array P400 512MB Battery Kit	411064-B21



Configuration Information

	HP 64/133 2-ports Int PCI-X SAS Host Bus Adapter	347786-B21
	NOTE: PCI-X interface	
	HP Smart Array P800/512 BBWC 2-ports Int/2-ports Ext PCIe x8 SAS Controller	381513-B21
	HP Smart Array E500/256 2-ports Ext PCIe x8 SAS Controller	435129-B21
	HP Smart Array P700m/256 4-ports Ext PCIe x8 SAS Controller	507925-B21
	NOTE: Recommended SAS HBA for connecting HP tape drives to HP ProLiant Blade servers	
	HP Smart Array P700m/512 4-ports Ext PCIe x8 SAS Controller	508226-B21
	NOTE: Recommended SAS HBA for connecting HP tape drives to HP ProLiant Blade servers	
Host Bus Adapters, Controllers, and Accessories for HP AlphaServers	Single Channel Ultra2 SCSI, LVD	3X-KZPCA-AA
	Dual Channel PCI Ultra3 LVD Multimode	3X-KZPEA-DB

You will need to connect Ultrium 460 ,Ultrium 960 and Ultrium 1840 tape drives to a dedicated SCSI Host Bus Adaptor (HBA) that is Ultra160 or higher. To supply data to the drive fast enough to achieve full performance from the tape drive, you will need at least eight disks as part of a RAID 5 array with read cache enabled. You can test the speed of your system with tools provided at <http://www.hp.com/support/pat> or with HP's Library and Tape Tools application.

To achieve full performance from your tape drive, do not use the native backup application within the operating system (e.g., NT® Backup, Windows® 2000 Backup). For full details of supported backup applications, see <http://www.hp.com/products1/storage/compatibility/tapebackup/index.html>



Technical Specifications

		1U Rack-mount		3U Rack-mount	
Dimensions	Form Factor	1U - Rack-mount		3U - Rack-mount	
	Physical (HxWxD)	1.7 x 19 x 25.3 in (4.32 x 42.88 x 64.14 cm)		5.2 x 16.8 x 23.0 in (13.20 x 42.70 x 58.40 cm)	
	Shipping (HxWxD)	12.0 x 23.5 x 33.5 in (30.48 x 59.69 x 85.09 cm)		15.8 x 23.8 x 33.5 in (40.01 x 60.33 x 85.09 cm)	
Weight	Out of box	17.8 lb (8.07 kg)		27 lb (12.3 kg)	
	Shipping	25 lb (11.3 kg)		45 lb (20.5 kg)	
Interface	SCSI/USB/SAS Interface	Wide SCSI LVD/SE USB2.0 3Gb and 6Gb SAS		Wide SCSI LVD & SE 3Gb and 6Gb SAS	
	SCSI/USB/SAS Connector	Two 68-pin HD Two USB 2.0 ports Two mini-SAS 8088 connectors		Two 68-pin HD standard, Can be expanded to more Four mini-SAS 8088 connectors	
	Ports	1U SCSI--Two SCSI buses, 1 half-height drive per bus or can be configured with 2 half height on one bus. 1U USB--Two USB buses, 1 half-height drive per bus. 1U SAS - Two SAS ports, 1 half-height drive per port		3U SCSI - Two SCSI buses, 2 half-height or 1 full-height drive per bus. Optional: Can increase to four SCSI buses with one half-height drive per bus with LVD Cable Kit. 3U SAS - Four SAS ports, 1 half-height drive per port	
Power Specifications	Power Requirements	140 Watts, max 100 to 240 Vrms Nominal Line Voltage 90 to 264 Vrms Range Line Voltage 47/63 Hz 2.4 A max Input Current (@120 VAC)		200 Watts, max 100 to 240 Vrms Nominal Line Voltage 90 to 264 Vrms Range Line Voltage 47/63 Hz 3.1 A max Input Current	
Environmental Specifications	Temperature	Operating		41° to 104° F (5° to 40° C)	
		Storage		-22° to 104° F (-30° to 60° C)	
	Non-Condensing Humidity	Operating		20% to 80%	
		Storage		5% to 95%	
Drives Supported	1U Rack-mount	3U Rack-mount	Capacity (native)	Transfer rate (native)	Form Factor
	DAT 40 SCSI	DAT 40 SCSI	20 GB	3.2 MB/s	Half-Height
	DAT 40 USB	-	20 GB	3.2 MB/s	Half-Height
	DAT 72 SCSI	DAT 72 SCSI	36 GB	3.2 MB/s	Half-Height
	DAT 72 USB	-	36 GB	3.2 MB/s	Half-Height
	DAT 160 SCSI	DAT 160 SCSI	80 GB	6.9 MB/s	Half-Height
	DAT 160 SAS	DAT 160 SAS	80 GB	6.9 MB/s	Half-Height
	DAT 160 USB	-	80 GB	6.9MB/s	Half-Height
	DAT 320 SAS	DAT 320 SAS	160 GB	12 MB/s	Half-Height
	DAT 320 USB	-	160 GB	12MB/s	Half-Height



Technical Specifications

	RDX 160GB USB	-	160 GB	30 MB/s	Half-Height
	RDX 320GB USB	-	320 GB	30 MB/s	Half-Height
	RDX 500GB USB	-	500 GB	30 MB/s	Half-Height
	RDX 1 TB USB	-	1 TB	30 MB/s	Half-Height
	Ultrium 232 SCSI	Ultrium 232 SCSI	100 GB	16 MB/s	Half-Height
	Ultrium 448 SCSI	Ultrium 448 SCSI	200 GB	24 MB/s	Half-Height
	Ultrium 448 SAS	Ultrium 448 SAS	200 GB	24 MB/s	Half-Height
	Ultrium 920 SCSI	Ultrium 920 SCSI	400 GB	60 MB/s	Half-Height
	Ultrium 920 SAS	Ultrium 920 SAS	400 GB	60 MB/s	Half-Height
	-	Ultrium 960	400 GB	80MB/s	Full-Height
	Ultrium 1760 SAS	Ultrium 1760 SAS	800 GB	80MB/s	Half-Height
	Ultrium 1760 SCSI	Ultrium 1760 SCSI	800 GB	80MB/s	Half-Height
	-	Ultrium 1840 SCSI	800 GB	120MB/s	Full-Height
	-	Ultrium 1840 SAS	800 GB	120MB/s	Full-Height
	Ultrium 3000 SAS	Ultrium 3000 SAS	3TB	280MB/s	Half-Height
		Ultrium 3280 SAS	3TB	280MB/s	Full-Height
Max Number of drives	1U Rack-mount	3U Rack-mount			
	Two half-height internal drives	Two full-height internal drives or			
		Four half-height internal drives			
LED Indicators	1U Rack-mount	3U Rack-mount			
	Power Supply	Power Supply			

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