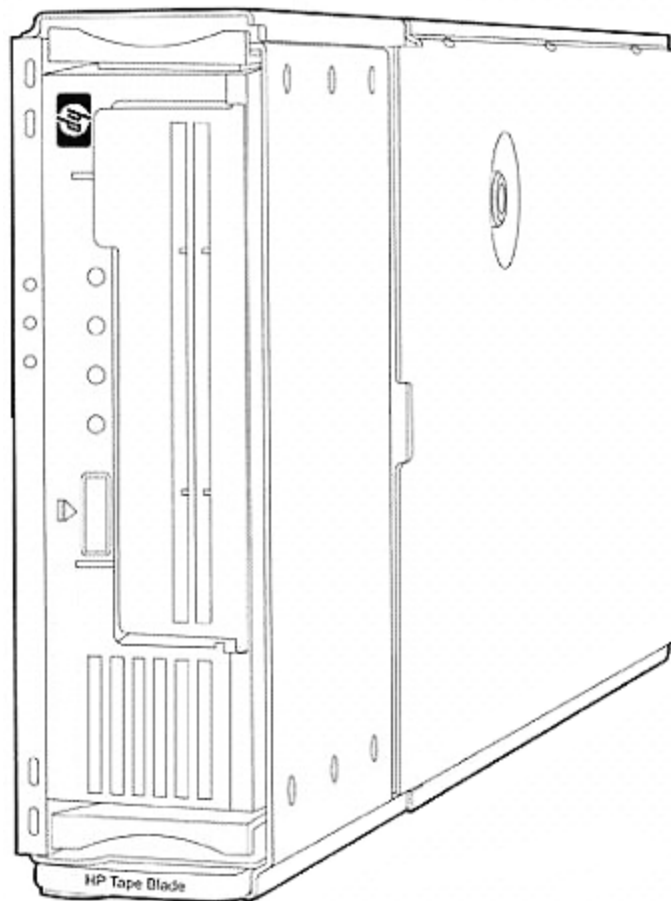


Overview

HPE Ultrium Tape Blades

The HPE Ultrium Tape Blades are ideal for HPE BladeSystem c-Class customers who need an integrated data protection solution. These half-height tape blades provide direct attach data protection for the adjacent server and network backup protection for all data residing within the enclosure. HPE Ultrium Tape Blades offer a complete data protection, disaster recovery and archiving solution for BladeSystem c-Class customers.

Each HPE Ultrium Tape Blade solution ships standard with the option to download Yosemite Server Backup Basic backup and recovery software. In addition, each tape blade supports HPE One-Button Disaster Recovery (OBDR), which allows quick recovery of the operating system, applications and data from the latest full backup set. HPE Ultrium Tape Blades are the industry's first tape blades and are developed exclusively for HPE BladeSystem c-Class enclosures.



HPE Ultrium Tape Blades

What's New

- Increased capacity and performance with the LTO-5 SB3000c, with capacity up to 3 TB on a single data cartridge (2:1 compression) and performance up to 1 TB/hr (2:1 compression).
- TapeAssure makes managing, optimizing and archiving on the HPE LTO Ultrium tape drives easier. This tool provides additional management and monitoring capabilities.
- Compliance to 2013 ROHS requirements

NOTE: Yosemite Server Backup Basic replaces Data Protector Express Basic as the software (downloadable) included with the HPE LTO Ultrium tape drives.

At A Glance

- Integrated into BladeSystem c-Class enclosures:

- Ideal direct attach tape-based data protection solution for customers who need an integrated data protection solution.

- **Complete data protection and disaster recovery solution:**

- Ships standard with the option to download Yosemite Server Backup Basic software ideal for data protection needs.
Supports One-Button Disaster Recovery (OBDR) for adjacent backup server. OBDR allows quick recovery of operating system, applications and data from the latest backup set in the event of a hard drive failure.

- **Versatility:**

- Direct attach data protection of adjacent server and network backup of data via Ethernet for all other servers within the BladeSystem c-Class enclosure.
Protects both half-height and full-height server blades.

- **Hardware Data Encryption:**

- LTO-4 SB1760c and LTO-5 SB3000c Tape Blades offer AES 256-bit hardware data encryption.

- **Form Factor:**

- Half-height blade optimizing slot utilization.

- **Warranty:**

- Hewlett Packard Enterprise provides a 3-year, next-day, parts exchange, limited warranty for the HPE tape blades, plus 9x5 phone support for the duration of the warranty

Models

HP StoreEver LTO-5 Ultrium SB3000c Tape Blade

BS580B

NOTE: 0D1 will appear after this part number on your sales order if factory integration is indicated.

HP StoreEver LTO-4 Ultrium SB1760c Tape Blade

NOTE: 0D1 will appear after this part number on your sales order if factory integration is indicated.

Kit Contents LTO-5 SB3000c Tape Blade

- HPE StoreEver LTO-5 Ultrium SB3000c Tape Blade HPE LTO-5 Ultrium 3 TB Data Cartridge
- CD
- Yosemite Server Backup Basic (option to download)Coupler
- Install poster
- Warranty booklet

Kit Contents LTO-4 SB1760c Tape Blade

- HPE StoreEver LTO-4 Ultrium SB1760c Tape Blade HPE LTO-4 Ultrium 1.6 TB Data Cartridge
- CD
- Yosemite Server Backup Basic (option to download)Coupler
- Install poster
- Warranty booklet

Compatibility

Key Features: LTO-5 SB3000c Tape Blade Features of the HPE StoreEver LTO-5 Ultrium SB3000c Tape Blade include:

- LTO-5 Ultrium tape technology with 3 TB of capacity on a single data cartridge (2:1 compression) and performance up to 1 TB/hr (2:1 compression)
- AES 256-Bit hardware data encryption provides easy-to-enable security to protect the most sensitive data and prevent unauthorized access of tape cartridges.
- TapeAssure provides life and health information, utilization and operational performance for media and drives

- WORM (Write-Once, Read Many) support offering a simple and secure method for archiving records as part of a compliance solution to meet the toughest of industry regulations.
- Ship standard with the option to download Yosemite Server Backup Basic software and supports HPE's One-Button Disaster Recovery (OBDR)
- Integrated data protection solution for BladeSystem c-Class enclosures

Key Features: LTO-4 SB1760c Tape Blade

Features of the HPE StoreEver LTO-4 Ultrium SB1760c Tape Blade include:

- LTO-4 Ultrium tape technology with 1.6 TB of capacity on a single data cartridge (2:1 compression) and performance up to 576 GB/hr (2:1 compression)
- AES 256-Bit hardware data encryption provides easy-to-enable security to protect the most sensitive data and prevent unauthorized access of tape cartridges.
- WORM (Write-Once, Read Many) support offering a simple and secure method for archiving records as part of a compliance solution to meet the toughest of industry regulations.
- Ship standard with the option to download Yosemite Server Backup Basic and supports HPE's One-Button Disaster Recovery (OBDR)
- Integrated data protection solution for BladeSystem c-Class enclosures

Direct Attach Data Protection

Provides direct attach tape-based data protection of the adjacent server blade within the enclosure.

Network Backup Capability

In addition to direct attach data protection of the adjacent server blade, the HPE LTO Ultrium Tape Blades also provide network backup capability for other data residing within the blade enclosure. The adjacent server to the tape blade becomes the designated backup server and other server blades within the enclosure can perform network backups via the Ethernet connection within the enclosure. This functionality is enabled by purchasing additional data protection software client licenses for each server blade that needs network backup capability.

Complete data protection and disaster recovery solution

The HPE Ultrium Tape Blades ship standard with the option to download Yosemite Server Backup Basic software. In addition, the tape blade supports HPE's One-Button Disaster Recovery (OBDR) disaster recovery solution. OBDR allows quick restores of your operating system, applications and data from your latest full backup set. OBDR is supported for the server blade adjacent to the tape blade. For more information on Yosemite Server Backup Basic software, please visit: <http://www.barracudaware.com/ysbbasic>. For more information on HPE's One-Button Disaster Recovery, please visit: <http://www.hp.com/go/obdr>.

AES 256-Bit Hardware Data Encryption

The HPE LTO-4 SB1760c and LTO-5 SB3000c Tape Blades offer AES 256-bit hardware data encryption. AES 256-bit hardware data encryption provides easy-to-enable security to protect the most sensitive data and prevent unauthorized access of tape cartridges. By using LTO-4 or LTO-5 encryption, not only is data fully capable of being compressed therefore maximizing capacity, encrypted backups are completed without a loss in performance.

TapeAssure

HPE TapeAssure makes managing, optimizing and archiving on the HPE LTO Ultrium tape drives easier. This tool provides additional management and monitoring capabilities including:

- Life and health information for media and drives
- Information on media and drive utilization and operational performance
- Notifications of drive and media characteristics that fall below HPE recommended standards

TapeAssure health reports and alerts give you peace of mind knowing the condition of the drives, the tapes and the data on each tape. TapeAssure monitors every backup to ensure the highest standards of reliability, sends alerts when these standards are not met, and ensures that you can maintain the drives and tapes used in an archive environment to have the highest integrity.

TapeAssure builds a database of drive and tape history information that you can export as .CSV (comma-separated-value) files and import into Excel or other tools to create pivot-charts, pie charts and bar charts for graphical presentation or further analysis. This data can be automatically exported on a schedule or on demand and written to a local or network drive where analysis scripts can also be run.

Instructions and downloads of HPE TapeAssure are available at:
<http://www.hp.com/go/TapeAssure>

Linear Tape File System (LTFS)

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

For more information, including user guide, downloads and compatibility, visit:
<http://www.hp.com/go/LTFS>

WORM (Write-Once, Read-Many)

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.

The HPE SB3000c, SB1760c and SB920c Tape Blades feature the ability to archive and store data in a 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, the SB3000c, SB1760c and SB920c can archive large amounts of data for periods of up to 30 years in a secure, untampered state. Since all SB3000c, SB1760c and SB920c Tape Blades include support for both rewritable and WORM media, IT organizations can now easily integrate a secure, long-term archiving solution into their current data protection strategy:

- A single drive to support all backup and archiving needs
- Two distinctive tape cartridges to easily distinguish and manage both rewriteable and WORM data cartridges
- A specially designed WORM data cartridge with multiple integrated fail-safe features to prevent accidental or intentional overwriting of data
- High-capacity, low-cost HPE WORM media that can store up to 3 TB (SB3000c) or 1.6 TB (SB1760c) of data on a single data cartridge
- Support from many backup and archiving software vendors, providing the most comprehensive and mainstream support in the industry
- The LTO open standard that offers greater choice and compatibility across all third-generation Ultrium products

Density

The HPE Ultrium Tape Blades fit into a half height bay on the BladeSystem c-Class c3000 and c7000 enclosures.

Manageability

- Onboard Administrator module which provides a single point of control for intelligent management of the entire enclosure.
- Insight Display powered by the Onboard Administrator provides local management through an LCD display conveniently sited on the front of the

- system.
- HPE TapeAssure provides life and health information, utilization and operational performance for media and drives
- HPE Library and Tape Tools provide a robust diagnostic tool for Ultrium Tape Blades.

Compatibility and Integration Testing

Extensive compatibility testing with HPE BladeSystem c-Class server blades for the highest level of integration available in the industry. Please visit <http://www.hp.com/storage/SPOCK> for a complete list of qualified tape blade solutions.

BladeSystem c-Class compatibility

Installs into half-height bay of a BladeSystem c-Class enclosure. Compatible with the following BladeSystem c-Class server blades:

HPE ProLiant Server Blades

- ProLiant BL260c G5 Server Blade (EOL)
- ProLiant BL280c G6 Server Blade
- ProLiant BL460c G6, G7 Server Blade
- ProLiant BL460c G5 Server Blade (EOL)
- ProLiant BL465c G5, G6, G7 Server Blade
- ProLiant BL480c Server Blade
- ProLiant BL490c G6, G7 Server Blade
- ProLiant BL495c G5, G6 Server Blade
- ProLiant BL620c G7 Server Blade
- ProLiant BL680c G5 Server Blade
- ProLiant BL685c G5, G6, G7 Server Blade
- ProLiant BL460c Gen8 Server Blade
- ProLiant BL465c Gen8 Server Blade
- ProLiant BL660c Gen8 Server Blade

NOTE: In order to connect a standalone tape drive using the P721m Mezz Card, the BL460c Gen8 Server Blade must have 2 processors installed. The Mezz Card and tape drive are not recognized if this Server Blade only has 1 processor installed

HPE Integrity Server Blades

- HPE Integrity BL860c Server Blade
- HPE Integrity BL860c i2 Server Blade
- HPE Integrity BL870c i2 Server Blade

NOTE: For the most up-to-date BladeSystem c-Class compatibility, please visit: <http://www.hp.com/storage/SPOCK>.

Operating Systems

- Microsoft Windows Server 2003 (Not supported on some G7 Servers)
- Microsoft Windows Server 2008 (x32 and x64)
- Red Hat Enterprise Linux
- SUSE Linux Enterprise Server
- OpenVMS (Integrity Server Blades)
- HP-UX (Integrity Server Blades)

NOTE: For the most up-to-date list of compatible operating systems, please visit <http://www.hp.com/storage/SPOCK>

NOTE: For more Linux OS support & certification information, please visit our the ProLiant & BladeSystem Server Linux matrix: <http://h18004.www1.hp.com/products/servers/linux/hplinuxcert.html>

Software Suite

Yosemite Server Backup Basic software

- Downloadable, Simple data protection that installs from box to backup in minutes
- Fast and robust disaster recovery using One-Button Disaster Recovery (OBDR)

HPE Systems Insight Manager (SIM)

- Powerful server and server options/storage manager tool
- Monitors over 1,200 system wide parameters
- Configuration/Diagnostic Utilities

HPE Library and Tape Tools

- Robust diagnostic tool for HPE tape products
- Free download plus quick installation
- Intuitive user interface requires no training
- Web-based smart firmware downloads, updates and notifications

Warranty Information , HPE Care Pack, and Service and Support

Warranty and Services Included with the Product

Hewlett Packard Enterprise provides a 3-year, next-day, parts exchange, limited warranty for the HPE tape blades, plus 9x5 phone support for the duration of the warranty.

For more information about HPE's Global Limited Warranty and Technical Support, visit:

<http://www.hp.com/storage/warranty>

HPE Pointnext operational services

Packaged server and storage services for increased uptime, productivity and ROI
When you buy HPE 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 HPE Pointnext operational 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 HPE Pointnext operational services, helps reduce downtime risks and provides operational consistency for mission-critical and standard business computing.

HPE Pointnext operational services: Upgrading or extending standard server and storage warranties cost effectively

Hewlett Packard Enterprise recommends Proactive Care for your BladeSystem servers, enclosures and components to prevent problems with proactive advice and assistance, resolve issues and rapidly recover by connecting to The Hewlett Packard Enterprise enhanced call experience and advanced technical expertise. The portfolio also provides a combination of integrated proactive and reactive services, such as Proactive 24 Service and Critical Service. In addition with HPE Proactive Select, you can acquire the specific proactive constancy and technical services. HPE 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.

HPE server and storage lifecycle support services offers a full spectrum of customer care-from technology support to complex migrations to complete managed services. HPE Factory Express provides customization, integration and deployment services for

turnkey solutions. HPE Education Services offer flexible, comprehensive training on to help your IT staff get the most out of your server and storage investments. HPE Financial solutions extend innovative financing and cost-effective asset management programs-from purchase to equipment retirement.

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

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

HPE Pointnext operational services are sold by HPE and Hewlett Packard Enterprise Authorized Service Partners:

- Services for customers purchasing from HPE or an enterprise reseller are quoted using HPE order configuration tools.
- Customers purchasing from a commercial reseller can find HPE Pointnext operational services at <http://www.hp.com/go/lookuptool>

Recommended HPE Pointnext operational services for optimal satisfaction with your HPE product.

3-Year HPE Support Plus 24 HPE Foundation Care 24x7 connects you to Hewlett Packard Enterprise 24 hours a day, seven days a week for assistance on resolving issues - hardware onsite response within four hours and software call back within two hours after opening your case. Three years' coverage recommended with HPE Care Pack Service.

HPE BladeSystem c7000 Infrastructure (ICE + OS) Installation & Startup An HPE Care Pack Service, the HPE Installation and Startup Service for HPE BladeSystem c-Class Infrastructure provides for the installation of an HPE BladeSystem c-Class enclosure, c-Class ProLiant and Integrity server blades, storage blades, SAN switch blades, Virtual Connect modules (Ethernet and Fibre Channel), Ethernet network interconnects, and Infiniband, as well as deployment and basic configuration of HPE Insight Control Environment for HPE BladeSystem software.

- Efficient and effective HPE BladeSystem c-Class infrastructure setup, server deployment, and management
- Delivery of the service at a mutually scheduled time convenient to the organization
- Expedited installation, provided all service prerequisites are met prior to commencement of service
- Verification prior to installation that all service prerequisites are met
- Reduced implementation time and cost
- More effective IT resource planning

Remember, HPE Pointnext operational services:

- Provide a defined portfolio of services to help customers derive measurable business value and agility from their IT investment
- Offer factory configuration, integration, and onsite product and solution deployment
- Uplift the standard hardware warranty to provide additional support for higher levels of availability for an extended period of time

<https://www.hpe.com/h20195/v2/getpdf.aspx/4aa0-5964enw>

Optional HPE Pointnext operational services that will enhance your HPE product experience.

HPE Proactive Select Service For customers who need to improve IT performance and manageability through the use of cost effective flexible proactive services:

HPE Proactive Select Service improves your IT performance and manageability through the use of cost effective flexible services. Hewlett Packard Enterprise provides technical expertise and best practices to accelerate ROI of your technology

investment. Selectable proactive services span a wide range of technology and process services - a flexible way to purchase proactive services that fit your particular environment and situation.

HPE Proactive Select Service is technology agnostic and purchased in addition to your choice of underlying reactive support.

<http://h20195.www2.hp.com/v2/GetPDF.aspx/4AA2-3842ENN.pdf>

HPE Entry Storage Data Migration Service for Windows

For customers who need to safely migrate Windows data within their TCP/IP networks with minimal impact to their operations:

You have a need to migrate data between Windows servers within your TCP/IP network. Or you have a need to migrate storage for your Windows servers. Or both. And you need to accomplish these migrations efficiently while minimizing risk at the same time.

HPE Entry Storage Data Migration Service for Windows offers you a cost competitive and convenient way to accommodate data migration triggered by a need to refresh or consolidate storage, or to create different storage tiers. This service offers a migration cost in line with the costs of storage products in small and medium-sized storage environments. The service is delivered via a skilled HPE service specialist with special consideration for data availability, integrity, and ongoing operational performance during the transfer process.

<https://www.hpe.com/h20195/v2/getpdf.aspx/4aa2-4734enw.pdf>

eSupport

HPE 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 HPE 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 HPE service agreement. To access the support portal, visit: <http://www.hp.com/support>

HPE Insight Remote Support software delivers secure remote monitoring and support for your Hewlett Packard Enterprise servers and Storage, 24 X 7, so you can spend less time solving problems and more time focused on your business. You can have your systems remotely monitored for hardware failure using secure technology that's been proven at thousands of companies around the world. In many cases, you can avoid problems before they occur.

Customer Technical Training

HPE 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, Hewlett Packard Enterprise 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.

HPE Services Awards	HPE 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.
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Additional Services Information	To learn more on HPE ProLiant servers, HPE BladeSystem servers and HPE storage products, please contact your Hewlett Packard Enterprise sales representative or Hewlett Packard Enterprise Authorized Channel Partner. Or visit: http://www.hp.com/services/proliant or http://www.hp.com/services/bladeSystem or http://www.hp.com/services/storage
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Related Options

NOTE: Some of the options listed below may be discontinued.

Media	HPE LTO-5 Ultrium 3TB RW Data Cartridge	C7975A
	HPE LTO-5 Ultrium 3TB WORM Data Cartridge	C7975W
	HPE LTO4 Ultrium 1.6TB Read/Write Data Cartridge	C7974A
	HPE LTO4 Ultrium 1.6TB WORM Data Tape Cartridge	C7974W
	HPE LTO-3 Ultrium 800 GB Re-writable Data Cartridge	C7973A
	HPE LTO-3 Ultrium 800 GB WORM Data Cartridge	C7973W
	HPE LTO2 Ultrium 400GB RW Data Tape	C7972A
	HPE Ultrium Universal Cleaning Cartridge	C7978A

Mezzanine Pass-Thru Card	HPE BL c-Class PCI Express Mezzanine Pass Thru Option Kit NOTE:NOTE: Required when installing an HPE Ultrium Tape Blade adjacent to a full-height server blade, with the exception of the HPE Integrity i2 server blades. The Mezzanine Card must be installed in mezzanine 3 connector in the server blade.	431643-B21
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Enclosure Configuration

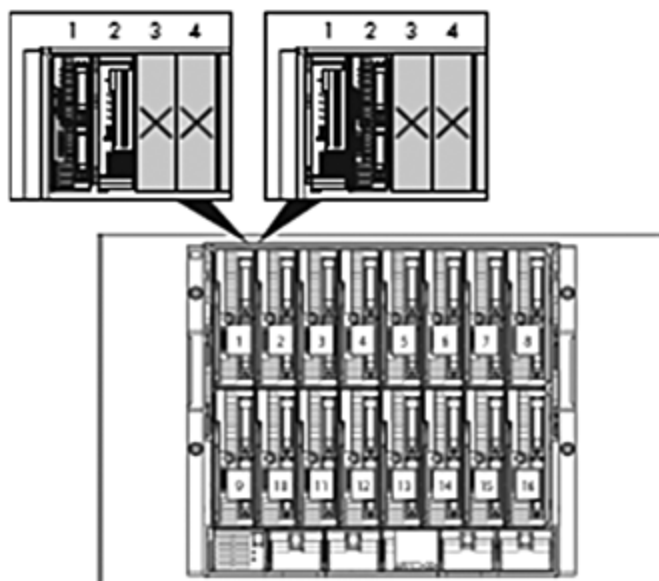


Figure 1 Installing a tape blade adjacent to a half-height server blade in a c7000 enclosure.

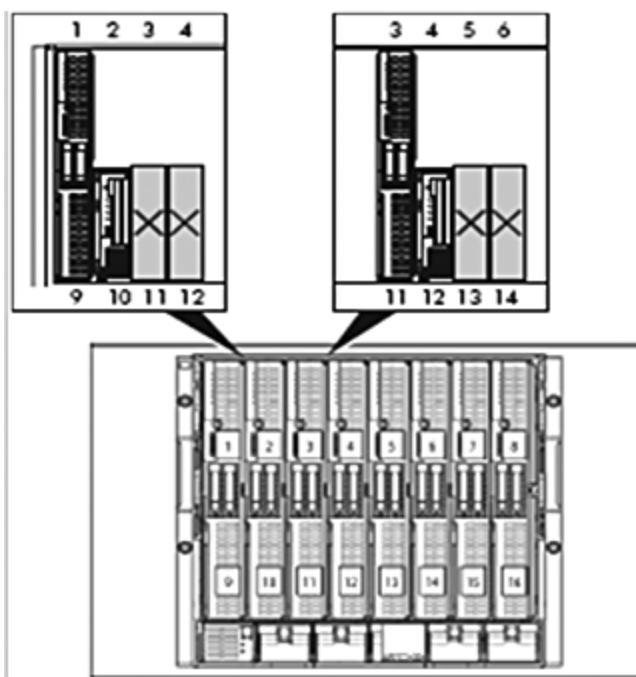


Figure 2 Installing a tape blade adjacent to a full-height server blade in a c7000 enclosure.

HPE LTO Ultrium Tape Blades

Description	Quantity Supported	Position Supported	Comments
HPE Ultrium Tape Blade NOTE: Connected adjacent to a half-height server blade (Figure 1)	Up to 8 per HPE BladeSystem c-Class c7000 Enclosure	Odd or Even slots next to partner server blade	- A tape blade supports one partner server blade, and one partner server blade supports one tape blade. - Identify the partner server blade to be installed with the HPE tape blade. The two blades always occupy a pair of slots, as follows: 1 & 2, 3 & 4, 5 & 6, 7 & 8, 9 & 10, 11 & 12, 13 & 14, 15 & 16 (see Figure 1). - If the partner server blade is installed in an odd-numbered bay, the HPE tape blade is installed in the adjacent even-numbered bay to the right. - If the partner server blade is installed in an even-numbered bay, the HPE tape blade is installed in the adjacent odd-numbered bay to the left.
HPE Ultrium Tape Blade NOTE: Connected adjacent to a full-height server blade (Figure 2)	Up to 4 per HPE BladeSystem c-Class c7000 Enclosure	Odd or even slots next to partner server blade (lower bays only)	- A tape blade supports one partner server blade, and one partner server blade supports one tape blade. - When partnering a tape blade with a full height server blade (with the exception of the HPE Integrity i2 server blades), an HPE PCI Express Mezzanine Pass-Thru Card for BladeSystem c-Class (431643-B21) is required. This card is installed in mezzanine 3 connector in the server blade. - Identify the partner server blade to be installed with the HPE tape blade. The two blades always occupy a pair of slots, as follows: 9 & 10, 11 & 12, 13 & 14, 15 & 16 (see Figure 2). - If the partner server blade is installed in an odd-numbered bay, the tape blade is installed in the adjacent even-numbered bay to the right.

- If the partner server blade is installed in an even-numbered bay, the tape blade is installed in the adjacent odd-numbered bay to the left.
- The tape blade is always located on the lower row of the enclosure when installed next to a full-height server blade.

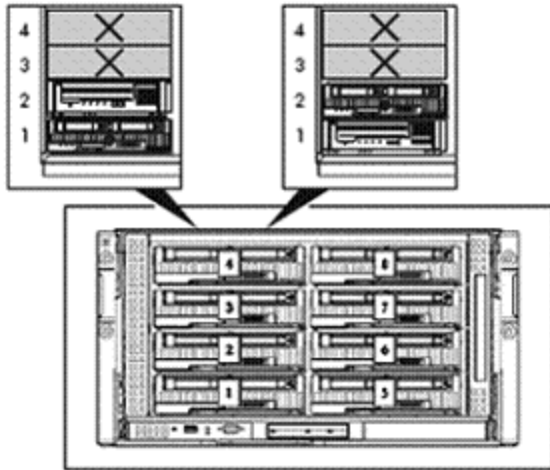


Figure 3 Installing a tape blade adjacent to a half-height server blade in a c3000 enclosure.

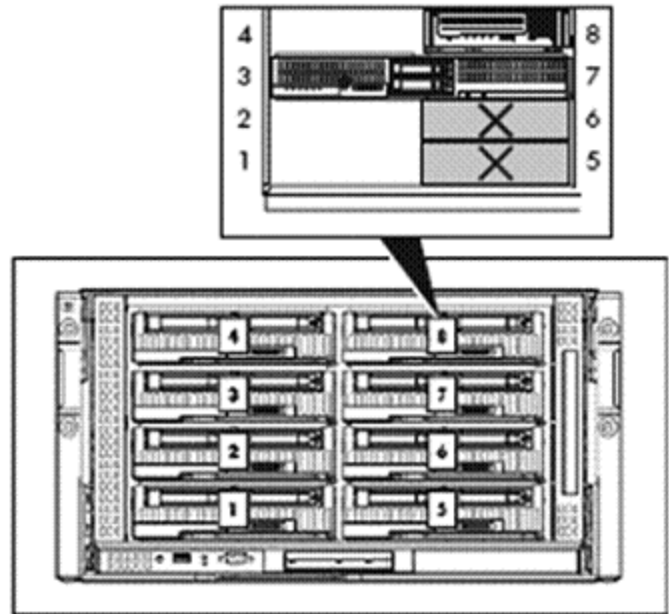


Figure 4 Installing a tape blade adjacent to a full-height server blade in a c3000 enclosure.

HPE Ultrium Tape Blades

Description	Quantity Supported	Position Supported	Comments
HPE Ultrium Tape Blade NOTE: Connected adjacent to a half-height server blade (Figure 3)	Up to 4 per HPE BladeSystem c-Class c3000 Enclosure	Odd or Even slots next to partner server blade	• A tape blade supports one partner server blade, and one partner server blade supports one tape blade. • Identify the partner server blade to be installed with the HPE tape blade. The two blades always occupy a pair of slots, as follows: 1 & 2, 3 & 4, 5 & 6 and 7 & 8 (see Figure 3).
HPE Ultrium Tape Blade NOTE: Connected adjacent to a full-height server blade (Figure 4)	1 per HPE BladeSystem c-Class c3000 Enclosure	Paired with a server blade in slots 3 & 7 (tape blade goes in 8)	• A tape blade supports one partner server blade, and one partner server blade supports one tape blade. • When partnering a tape blade with a full height server blade (with the exception of the HPE Integrity i2 server blades), an HPE PCI Express Mezzanine Pass-Thru Card for BladeSystem c-Class (431643-B21) is required. This card is installed in mezzanine 3 connector in the server blade. • Identify the partner server blade to be installed with the HPE tape blade. The two blades always occupy a pair of slots, as follows: 3 & 7 (tape blade in 8).

Technical Specifications

Tape Blade	HPE LTO-5 SB3000c Tape Blade		
Dimensions (HxWxD)	2.19 x 7.154 x 20.058 in (5.56 x 18.17 x 50.95 cm)		
Weight (loaded)	11 lb (4.99 kg)		
Capacity	Native	1.5 TB	
	Compressed (assumes 2:1 data compression)	3 TB	
	Buffer Size	256 MB	
Performance	Sustained transfer rate, native	140 MB/s	
	Sustained transfer rate compressed (assumes 2:1 data compression)	280 MB/s	
	Burst transfer rate	600MB/s	
	Data rate matching range (native)	47-140 MB/s	
	Data access time	52 s typical for a 1.5 TB tape (native) (from BOT)	
	Average load time	>19 s	
	Average unload time	19 s	
	Rewind time from EOT	96 s (1.5TB tape)	
	Rewind tape speed	9.0 m/s	
	Reliability	MTBF	250,000 hours at 100% duty cycle
Uncorrected Error Rate		1 in 1x10 ¹⁷ bits	
Media Compatibility		LTO-5 Ultrium(Read and Write) LTO-4 Ultrium - (Read and Write) LTO-3 Ultrium(Read Only)	
Tape Format	Recording method	16-channel linear serpentine	
	Recording format	LTO Ultrium 5 LTO Ultrium 4 (for 800 GB tape)	
	Data compression	LTO DC dual mode compression (an enhanced version of ALDC)	
	Error detection/correction	Reed-Solomon	
	Read channel technology	Partial Response Maximum Likelihood (PRML)	
	Data encoding method	RLL 32/33	
	Interface	6Gb/sec	
Power Specifications	Power requirements	++12V@2.0A (typical) +12V@3.5A (max)	
	Power Consumption	13 Watts idle 24 Watts typical 42 Watts max	
	Environmental Specifications	Temperature range	Operating
		Storage	-40° F to 151° F (-40° C to 66° C)
Non-condensing humidity		Operating	20 to 80% RH (non-condensing)

range Storage 10 to 95% RH (non-condensing)

NOTE: To maintain proper cooling and airflow, a blank or blade must occupy all bays during operation.

Standards Compliance

CSA Certification to C22.2, No.60950 (cCSAus)
TÜV EN60950 (IEC 60950)
CE Declaration of Conformity
FCC 47 CFR Parts 15
NOM
VCCI
C-TICK
RRL
BSMI
GOSH
CB Certificate and Report (IEC 60950)

Tape Blade

HPE LTO-4 SB1760c Tape Blade

Dimensions (HxWxD)

2.19 x 7.154 x 20.058 in (5.56 x 18.17 x 50.95 cm)

Weight (loaded)

11 lb (4.99 kg)

Capacity

Native 800 GB

Compressed 1.6 TB
(assumes 2:1 data compression)

Performance

Buffer Size 128 MB

Sustained transfer rate, native 80 MB/s

Sustained transfer rate, compressed 160 MB/s (576 GB/hr)
(assumes 2:1 data compression)

Burst transfer rate 300 MB/s (with 3Gb/sec SAS)

Data rate matching range 33-80 MB/s (native)

Data access time 64 s typical for a 800 GB tape (native)
(from BOT)

Average load time 17 s

Average unload time 16 s

Rewind time from EOT 121 s (200 GB tape)

Rewind tape speed 5.0 m/s

Reliability

MTBF 250,000 hours at 100% duty cycle

Uncorrected Error Rate 1 in 1×10^{17} bits

Media Compatibility

LTO-4 Ultrium(Read and Write)
LTO-3 Ultrium - (Read and Write)
LTO-2 Ultrium(Read Only)

Tape Format

Recording method 16-channel linear serpentine

Recording format LTO-4 Ultrium LTO-3 Ultrium(for 400 GB tape)

Data compression LTO DC dual mode compression (an enhanced version of ALDC)

Error detection/correction Reed-Solomon

Read channel technology Partial Response Maximum Likelihood (PRML)

Interface Power Specifications	Data encoding method	RLL 0,13/11	
	Interface type	3Gb/sec SAS	
	Power requirements	+12V@2.0A (typical) +12V@3.5A (max)	
Environmental Specifications	Power consumption	13 Watts idle 24 Watts typical 42 Watts max	
	Temperature range	Operating	50° F to 95° F (10° C to 40° C) at a minimum of 6CFM airflow
		Storage	-40° F to 151° F (-40° C to 66° C)
	Non-condensing humidity range	Operating	20 to 80% RH (non-condensing)
	Non-condensing humidity range	Storage	10 to 95% RH (non-condensing)
Standards Compliance	NOTE: To maintain proper cooling and airflow, a blank or blade must occupy all bays during operation.		
	CSA Certification to C22.2, No.60950 (cCSAus) TÜV EN60950 (IEC 60950) CE Declaration of Conformity FCC 47 CFR Parts 15 NOM VCCI C-TICK RRL BSMI GOSH CB Certificate and Report (IEC 60950)		

Summary of Changes

Date	Version History	Action	Description of Change
23-Oct-2017	Version 25	Changed	Care Pack naming and Service and Support-Parts and Materials updated.
14-Oct-2016	From Version 23 to 24	Changed	Rebranding edition
07-Nov-2014	From Version 22 to 23	Changed	SKUs Descriptions were updated
09-May-2014	From Version 21 to 22		Added: the Summary of Changes table and edit the hyperlinks to match current format guidelines.
		Removed	Removed the Proliant BL420c server blade from the BladeSystem c-Class compatibility table.
		Changed	HPE Pointnext operational services and Recommended HPE Pointnext operational services were revised.
08-Jun-2013	From Version 20 to 21	Changed	Model product descriptions were revised.
29-Mar-2013	From Version 19 to 20	Changed	Compatibility: Updated BladeSystem c-Class compatibility section.
12-Oct-2012	From Version 18 to 19	Changed	Change made with URL in Warranty Information, HPE Care Pack, and Service and Support section.

21-Sep-2012	From Version 17 to 18	Changed	Change made with URL in Warranty Information, HPE Care Pack, and Service and Support section.
13-Aug-2012	From Version 16 to 17	Changed	Changes were made in Overview, Compatibility, Related Options and Technical Specifications sections.
19-Aug-2011	From Version 15 to 16	Changed	HPE Data Protector Express Software was completely revised in Related Options.
29-Jul-2011	From Version 14 to 15	Removed	Removed HPE Ultrium 448c Tape Blade throughout the document.
08-Jun-2011	From Version 13 to 14	Removed	Removed StorageWorks throughout the document.
27-May-2011	From Version 12 to 13	Added	HPE StorageWorks SB920c Tape Blade was removed.
15-Nov-2010	From Version 11 to 12	Added	HPE StorageWorks LTO-5 SB3000c Tape Blade was added HPE Data Protector Express Basic backup and recovery was added TapeAssure and Linear Tape File System (LTFS) were added to Compatibility G6 and G7 servers were added to BladeSystem c-Class Compatibility Microsoft Windows Server 2008 was added to Operating Systems
		Changed	Warranty Information, HPE Care Pack and Service and Support were completely revised Uncorrected Error Rate was modified throughout Technical Specifications
18-Jun-2010	From Version 10 to 11	Changed	Updated the BladeSystem c-Class compatibility - HPE Integrity Server Blades - added BL8x0c i2 Server Blades.
03-Apr-2009	From Version 9 to 10	Changed	Corrected the ProLiant and BladeSystem Server Linux Matrix link for Operating Systems in the Compatibility section.
26-Jan-2009	From Version 8 to 9	Changed	Changes were made throughout the entire QuickSpecs. NOTE the title has changed.
02-May-2008	From Version 7 to 8	Changed	Changes were made to BladeSystem c-Class Compatibility in the Compatibility section and to Tape Blades in the Storage section.
07-Mar-2008	From Version 6 to 7	Changed	Changes were made in the Overview and Compatibility sections.
25-Jan-2008	From Version 5 to 6	Added	"For tape drives and media, 1 GB = 1 billion bytes. Actual formatted capacity is less." was added as the last line in the Copy Right information.
16-Nov-2007	From Version 4 to 5	Changed	The image for the SB920c Tape Blade was replaced.
12-Nov-2007	From Version 3 to 4	Changed	Changes were made throughout the QuickSpecs.
20-Jul-2007	From Version 2 to 3	Changed	The HPE Data Protector Express object in the Related Options section was rewritten.
07-Jun-2007	From Version 1 to 2	Added	Added EMEA version.

   
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For hard drives, 1 GB = 1 billion bytes. Actual formatted capacity is less.

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

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