

IBM TS3500 Tape Library

A highly scalable, automated tape solution addresses data protection and long-term retention

Highlights

- Support highly-scalable, automated data retention on tape
 - Deliver extreme scalability and capacity
 - Up to 600 PB of compressed LTO 8 automated in a single library image
 - Data security and regulatory compliance with encryption and WORM cartridges
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IBM TS3500 Tape Library is designed to provide a highly-scalable, automated tape library for mainframe and open-systems backup and archive that can scale from midsized to large enterprise environments.

Automates solutions for open and mainframe environments

TS3500 continues to lead the industry in tape drive integration with features such as persistent worldwide name, multipath architecture, drive and media exception reporting, remote drive and media management and host-based path failover. The L23 and D23 frames support IBM TS1160, TS1155, TS1150, IBM TS1140 tape drives. The L53 and D53 frames support LTO Ultrium 8, 7, 6 and 5 tape drives. L-frame models support improved cartridge handling, hot-swappable drive packaging and the option of an additional 16-slot input/output (I/O) station. Mixed media is supported by combining LTO Ultrium tape drives or 3592 J1A tape drives within the TS3500 library, frame by frame.

TS3500 supports IBM Z when used with the IBM TS7700 family of virtual tape servers. These systems enable IBM Z hosts to access the TS3500 cartridge inventory.

Offers high-capacity, high-density, low-cost storage

Storage requirements are increasing in organizations due to the growing use of cloud, mobile and social media technologies. Data retention and protection policies further

increase these demands. At the same time, available floor space in data centers is diminishing. To help manage these conflicting issues, TS3500 supports storage-only library frames with patented, high-density slots that can significantly increase a library's total capacity. These frames contain multiple tiers of cartridge slots, yet have the same physical footprint as L and D frames. When configured with high-density frames, TS3500 can store up to 600 PB of compressed data with LTO cartridges, or up to 900 PB of compressed data with 3592 cartridges.



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Helps ensure high availability

TS3500 Tape Library can be ordered with a dual-accessor model option to help increase mount performance and overall system reliability and availability. TS3500 Model HA1 enables two robotic accessors to operate simultaneously in configurations from two to 16 frames.

Includes advanced features

TS3500 Tape Library is designed with a number of advanced features to deliver cutting-edge performance and long-term value. Highlights include:

- Flexible library capacity with up to 192 drives in up to 16 TS3500 frames
- Simultaneous attachment of servers and applications to logical library partitions
- Remote management with a web-based interface for library control and configuration
- Simple Network Management Protocol (SNMP) query and trap functionality
- Automatic control path and data path failover to support improved continuity and disaster recovery
- Redundant control paths, grippers, power supplies and AC feeds for enhanced availability

The available Advanced Library Management System feature supports dynamic storage management, enabling users to create and change logical libraries dynamically and configure any drive into any logical library.

Supports encryption and WORM media

To keep information confidential if backup tapes are lost or stolen, TS3500 supports TS1160, TS1155, TS1150, TS1140, as well as LTO Ultrium, tape drive encryption. These tape drives include data encryption capabilities within the drives, helping to avoid the need for host-based data encryption—and the resulting drain on host performance—or the use of specialized encryption appliances.

The IBM Security Key Lifecycle Manager component for Java platforms can help generate and manage encryption keys for LTO Ultrium tape drives across the enterprise. This feature uses standard key repositories and supports three different encryption key-management methods: application-managed, system-managed or library-managed.

IBM TS3500 can also support WORM LTO media.

Integrates with powerful software

Further enhance the power of TS3500 by integrating it with industry-leading storage management solutions, such as IBM Spectrum Protect and a wide array of other storage software.

Centralizes tape management

IBM offers a wide range of management software options for TS3500. The following table lists a subset of the software options, some available as downloadable files at ibm.com

IBM TS3500 at a glance

Characteristics	
Frame definition	D23—Drive-capable and storage expansion frame for TS1155, TS1150, TS1140 or 3592
	S24—Storage-only expansion frame for 3592 cartridges
	D53—Drive-capable and storage expansion frame for LTO
	S54—Storage-only expansion frame for LTO cartridges
Tape drive types	TS1160, TS1155, TS1150, TS1140 or 3592 tape drives or LTO Ultrium 8, 7, 6 and 5 tape drives
Number of frames per library	One base frame, up to 15 expansion frames
Number of libraries per complex	Up to 15 libraries
Number of drives	Up to 12 per frame
	Up to 192 per library string
Number of tape cartridges	L23—up to 260†
	D23—up to 400
	S24—up to 1,000
	Total supported per library: >15,000
	L53—up to 287†
	D53—up to 440
	S54—up to 1,320
	Total supported per library: >20,000
Number of I/O slots	16 I/O slots standard
Number of logical libraries	Maximum of 192 per library (up to number of drives installed)
Number of IBM TS7700 Virtualization Engine systems	Maximum of eight per TS3500 subsystem
Capacity*	LTO Ultrium 8 cartridges: up to 240 PB per library (up to 600 PB with 2.5:1 compression)
	3592 advanced cartridges: up to 225 PB per library (675 PB with 3:1 compression)
Media type	L23/D23/S24—IBM 3592 JA/JJ,JB/JC/JK/JD/JL and JW/JR/JX/JY/JZ write-once-read-many (WORM)
	L53/D53/S54—LTO Ultrium 8, 7, 6, 5, 4, 3, 2, 1 cartridges
Dimensions (all frames)	1,800 mm H × 782 mm W × 1,212 mm D (70.9 in. × 30.8 in. × 47.7 in.)
Maximum weight	L23—490 kg (1,079 lb); D23—451 kg (994 lb), S24—526 kg (1,160 lb)
	L53—481 kg (1,061 lb); D53—440 kg (970 lb), S54—563 kg (1,240 lb)
Warranty	One-year limited warranty, on-site service, same-day 24×7, service upgrades available
Operating environment	
Temperature	15°C - 32°C (59°F - 90°F)

System Storage Hardware Data Sheet



Relative humidity	20% - 80% (noncondensing)
Wet bulb maximum	26.0°C (78.8°F)
Electrical power	4.1 A at 200 - 240 V AC; 1.1 kVA
Attachment and systems support	Can attach to IBM Power Systems™ and non-IBM servers and workstations (Attachment to IBM Z can be made via TS7700)
Operating systems support	Device driver support is available for IBM system platforms and other vendor platforms
	Latest support information: Visit the IBM System Storage Interoperation Center

* Capacity depends on drives installed, number and type of cartridges used, and compression ratio achieved. Listed capacity is physical. Usable capacity may be less.

† Legacy

Why IBM?

The performance and availability of your storage environment can either enhance or hamper your business processes. That's where IBM comes in. As a market leader in the storage industry, IBM can help you handle the challenges, whether you are a small to mid-sized company or a large enterprise.

Innovative technology, open standards, excellent performance, and a broad portfolio of proven storage software, hardware and solutions offerings are just a few of the reasons you should consider storage solutions from IBM, including IBM TS3500 Tape Library.

For more information

To learn more about IBM TS3500 Tape Library, please contact your IBM representative or IBM Business Partner, or visit: ibm.com/us-en/marketplace/ts3500

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