



Highlights

- Store up to 5.5 petabytes (PBs) of uncompressed data in a single frame library or scale up at 1 PB per square foot to a total of 175.5 PBs
 - Proactively monitor archived data with policy-based automatic media verification
 - Strengthen security and regulatory compliance with data encryption and write-once-read-many (WORM) media
 - Support any combination of Linear Tape-Open (LTO) Ultrium 7, 6, and 5, and IBM® TS1150 and TS1140 tape drives
 - Simplify user access to data stored on tape cartridges through the use of IBM Spectrum Archive™ featuring IBM Linear Tape File System™ technology
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IBM TS4500 Tape Library

A next-generation tape solution that delivers high storage density and integrated management

IBM TS4500 Tape Library is a next-generation storage solution designed to help midsized and large enterprises respond to storage challenges. These challenges include high data volumes and the growth in data centers, increasing cost of data center storage footprints, the difficulty of migrating data across vendor platforms and increased complexity of IT training and management as staff resources shrink.

In TS4500, IBM delivers the density that today's and tomorrow's data growth requires—along with the cost efficiency and the manageability to grow with business data needs while preserving existing investments in IBM tape library products. Now, organizations can achieve both a low cost per terabyte (TB) and a high TB density per square foot. In fact, TS4500 can store up to 5.5 PBs of data in a single 10 square-foot library, more than three times the capacity of IBM TS3500 Tape Library.

TS4500 provides advanced capabilities for integrated tape drive and media management, delivered within a single-pane-of-glass management console. The TS4500 graphical user interface (GUI) is based on the unified interface used in other IBM storage solutions. It includes key features to help guide storage administrators in completing critical tasks. For example, it enables them to monitor their tape library via persistent, at-a-glance library utilization and health status indicators.

In addition, TS4500 features such as capacity on demand, automatic control-path and data-path failover, tape-drive encryption, and WORM media support are carried over from previous generations of industry-leading IBM tape libraries.



Automates solutions for open environments

TS4500 is an industry leader in tape drive integration with features such as a persistent worldwide name, multipath architecture, drive/media exception reporting, remote drive/media management and host-based path failover. TS4500 L25, D25 and S25 frames support the TS1150 and TS1140 tape drives, while TS4500 L55, D55 and S55 frames support LTO Ultrium 7, 6 and 5 tape drives. Mixed media is supported by combining LTO Ultrium tape drives and TS1150, TS1140 tape drives within the TS4500 library, frame by frame. The L-frame and D-frame models help boost efficiency with improved hot-swappable drive packaging. In addition, all of the frames include high-density (HD) slot technology that can significantly increase a library's total capacity.

Providing more flexibility in the use of data center floor space than previous versions, the new TS4500 frame models can be placed in any active position, meaning the library can grow from both the right and the left side of the first L frame. Previous versions allowed the addition of frames only to the right.

A new rack offering can also reduce the storage footprint and simplify cabling by providing 10U of rack space on top of the library for Fibre Channel switches, tape data movers or IBM Spectrum Archive nodes.

Delivers capacity on demand

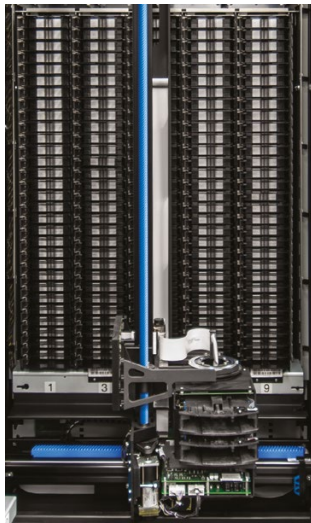
The TS4500 library frame provides a more flexible upgrade path for users who want to expand their tape storage as their needs grow. Capacity-on-demand configurations for TS4500 L-frame models include an entry-level configuration, an intermediate configuration and a base-capacity configuration. All models also support HD capacity-on-demand configurations.



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Includes advanced features

TS4500 is designed with a number of advanced features to deliver cutting-edge performance and long-term value. For example, the Advanced Library Management System (ALMS) feature supports dynamic storage management, enabling users to dynamically create and change logical libraries and configure any drive into any logical library. TS4500 also offers automatic control-path and data-path failover to help improve business continuity and disaster recovery. Policy-based automatic media verification can help minimize data risk in the library environment.



Centralizes management of tape resources

IBM offers a wide range of management software options for TS4500. The management software options include:

- **IBM TS4500 command-line interface (CLI)**—Provides access to TS4500 library functions from a CLI, such as moving cartridges to and from storage, drives or input/output (I/O)
- **IBM Tape System Reporter**—Enables administrators to monitor and report on storage devices in an enterprise environment
- **IBM Tape System Library Manager**—Allows administrators of large tape environments, spanning multiple libraries, to manage them as a single system
- **IBM Security Key Lifecycle Manager**—Simplifies encryption key management with an intuitive user interface

Inside IBM TS4500 Tape Library

IBM TS4500 Tape Library at a glance

Frame definition	<p>L25—Base frame for TS1150 and TS1140 (3592) drives and cartridges – includes 32 I/O slots</p> <p>D25—Drive-capable and storage expansion frame for TS1150 and TS1140 (3592) drives and cartridges</p> <p>S25—Storage-only expansion frame for 3592 cartridges</p> <p>L55—Base frame for LTO drives and cartridges – includes 36 I/O slots</p> <p>D55—Drive-capable and storage expansion frame for LTO drives and cartridges</p> <p>S55—Storage-only expansion frame for LTO cartridges</p>
Tape drive types	TS1150 and TS1140 (3592), LTO Ultrium 7, 6 and 5 tape drives
Number of frames per library	One base frame, up to 17 expansion frames with maximum of 7 Dx5 frames
Number of drives	Up to 16 per frame (up to 12 in frame 1) Up to 128 per library
Number of tape cartridges	<p>L25—up to 660 (up to 550 in frame 1)</p> <p>D25—up to 740 (up to 590 in frame 1)</p> <p>S25—up to 1,000 (up to 798 in frame 1)</p> <p>Total supported per library: up to 17,550</p> <p>L55—up to 882 (up to 730 in frame 1)</p> <p>D55—up to 970 (up to 774 in frame 1)</p> <p>S55—up to 1,320 (up to 1,054 in frame 1)</p> <p>Total supported per library: up to 23,170</p>
Capacity*	<p>3592 advanced cartridges: up to 175.5 PB per library (526.5 PB with 3:1 compression)</p> <p>LTO Ultrium 7 cartridges: up to 139 PB per library (up to 347.5 PB with 2.5:1 compression)</p>

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 TS4500 Tape Library.

For more information

To learn more about IBM TS4500 Tape Library, please contact your IBM representative or IBM Business Partner, or visit:

ibm.com/systems/storage/tape/ts4500

Additionally, IBM Global Financing can help you acquire the IT solutions that your business needs in the most cost-effective and strategic way possible. For credit-qualified clients we can customize an IT financing solution to suit your business requirements, enable effective cash management, and improve your total cost of ownership. IBM Global Financing is your smartest choice to fund critical IT investments and propel your business forward. For more information, visit:

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Actual available storage capacity may be reported for both uncompressed and compressed data and will vary and may be less than stated.

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



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