



Highlights

- Store up to 5.5 petabytes (PBs) of data in a single frame library – more than three times as much capacity as previous generations of IBM® tape libraries
 - Improve storage density with more than two times the expansion frame capacity – and support for 33 percent more tape drives
 - Manage storage using the Advanced Library Management System
 - Improve business continuity and disaster recovery (DR) with automatic control path and data path failover
 - Help ensure security and regulatory compliance with tape-drive encryption and write-once-read-many (WORM) media
 - Support Linear Tape-Open® (LTO®) Ultrium® 6, LTO Ultrium 5 and IBM TS1150 and TS1140 tape drives.
-

IBM TS4500

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

The IBM TS4500 tape library is a next-generation storage solution designed to help midsized and large enterprises respond to storage challenges. Among these are high data volumes and the growth in data centres (DCs), increasing cost of DC 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, organisations 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 frame, more than three times more capacity than the 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 utilisation and health status indicators.

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



Automates solutions for open environments

TS4500 is one of the industry leaders 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 6 and 5 tape drives. 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 DC 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 FC switches, tape data movers or IBM Linear Tape File System (LTFS) nodes.

Delivers CoD

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



IBM TS4500 tape library

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 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 DR.



Centralises 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.

IBM TS4500 tape library with top rack

IBM TS4500 at a glance

Frame definition	<p>L25—Base frame for TS1150 and TS1140 (3592) drives and cartridges – includes 36 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 32 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 6 and LTO Ultrium 5 tape drives
Number of frames per library	One base frame, up to 3 expansion frames
Number of drives	Up to 16 per frame (up to 12 in frame 1) Up to 60 per library string
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 3,550</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 4,690</p>
Capacity*	<p>3592 advanced cartridges: up to 35.5 PB per library (106.5 PB with 3:1 compression)</p> <p>LTO Ultrium 6 cartridges: up to 11.7 PB per library (up to 29.3 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 one of the market leaders in the storage industry, IBM can help you handle the challenges, whether you are a small to midsized 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 the IBM TS4500 tape library.

For more information

To learn more about the IBM TS4500 tape library, please contact your IBM representative or IBM Business Partner (BP), or visit: ibm.com/systems/storage/tape/ts4500

Additionally, IBM Global Financing (IGF) can help you acquire the IT solutions that your business needs in the most cost-effective and strategic way possible. We will partner with credit-qualified clients to customise an IT financing solution to suit your business goals, enable effective cash management and improve your total cost of ownership (TCO). IGF is your smartest choice to fund critical IT investments and propel your business forward. For more information, visit: ibm.com/financing/uk



IBM United Kingdom Limited

PO Box 41
North Harbour
Portsmouth
Hampshire
PO6 3AU
United Kingdom

IBM Ireland Limited

Oldbrook House
24-32 Pembroke Road
Dublin 4

IBM Ireland Limited registered in Ireland under company number 16226. The IBM home page can be found at ibm.com

IBM, the IBM logo, ibm.com and Linear Tape File System are trademarks or registered trademarks of International Business Machines Corporation in the United States, other countries, or both. If these and other IBM trademarked terms are marked on their first occurrence in this information with a trademark symbol (® or ™), these symbols indicate U.S. registered or common law trademarks owned by IBM at the time this information was published. Such trademarks may also be registered or common law trademarks in other countries.

A current list of IBM trademarks is available on the Web at 'Copyright and trademark information' at ibm.com/legal/copytrade.shtml

Linear Tape-Open, LTO, the LTO Logo, Ultrium, and the Ultrium logo are trademarks of HP, IBM Corp. and Quantum in the U.S. and other countries

Other company, product and service names may be trademarks, or service marks of others.

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

References in this publication to IBM products, programs or services do not imply that IBM intends to make these available in all countries in which IBM operates.

Any reference to an IBM product, program or service is not intended to imply that only IBM products, programs or services may be used. Any functionally equivalent product, program or service may be used instead.

IBM hardware products are manufactured from new parts, or new and used parts. In some cases, the hardware product may not be new and may have been previously installed. Regardless, IBM warranty terms apply.

This publication is for general guidance only. Information is subject to change without notice. Please contact your local IBM sales office or reseller for latest information on IBM products and services.

This publication contains non-IBM Internet addresses. IBM is not responsible for information found at these Web sites.

IBM does not provide legal, accounting or audit advice or represent or warrant that its products or services ensure compliance with laws. Clients are responsible for compliance with applicable securities laws and regulations, including national laws and regulations.

Photographs may show design models.

© Copyright IBM Corporation 2014



Please Recycle