

IBM TS4500 Tape Library

A next-gen ultra-high-capacity storage solution with integrated management



Highlights

Ultra-capacity 3592 tape storage

High-density with LTO tape storage

Simplified user access to data

Field upgradable paths to expansion

Reduce storage footprint and simplify cabling with 5U and 10U top rack space

The next-generation IBM® TS4500 Tape Library is designed to help mid-sized and large enterprises meet cloud storage challenges. As staff resources shrink, TS4500 helps you handle data volume growth, rising storage footprint costs, data migration efforts and the increased complexity of IT training and management.

To maximize the value of storage systems, mid-sized and large enterprises need next-generation cloud storage solutions aimed at solving the following challenges:

- Data proliferation
- Rising storage footprints and costs
- Data migration efforts
- Increased complexity of IT training and management
- Shrinking staff resources

TS4500 can answer those business needs by incorporating the latest generation of industry-leading LTO and IBM enterprise-class technology. This advanced tape system helps your organization meet the growing data demands of modern tape use cases such as active file archiving, cold archives and of course backup. ¹

TS4500 delivers the density that today's data growth requires—along with efficiency and manageability that grow with business needs while preserving your existing investments in IBM tape library products. You can achieve both a low per-terabyte cost and high density, with up to 39.6 PB of data in a single 10 square-foot library using LTO Ultrium 10 cartridges or 50 PB with 3592 cartridges.



Figure 1. The IBM TS4500 Tape Library frame offers enhanced flexibility.

High-density with LTO tape storage

Safeguard up to 1.73 EB at 2.5:1 compression per library with IBM LTO-10 cartridges. Leveraging the power of IBM LTO-10 cartridges, this solution delivers efficient data storage and retrieval for enterprises with extensive storage needs. The high-capacity design and advanced features make it a reliable choice to help organizations optimize your storage infrastructure while managing vast amounts of data with ease.

Ultra-capacity 3592 tape storage

The IBM TS4500 with TS1170 tape library is a cutting-edge storage solution designed to meet the high-capacity needs of your enterprise. This advanced tape library system offers reliable data backup and archiving with storage up to 50 TB (native) per cartridge along with outstanding performance. The modular design allows seamless scalability so your business can accommodate rapid data growth. With its robust features, such as encryption, automation and simplified management, the TS4500 with TS1170 helps protect data, improve cost efficiency and streamline operations. It's an ideal choice for organizations looking for scalable, dependable storage solutions.

Store up to 2.63 EB at 3:1 compression per library using 50 TB native capacity JF cartridges. Paired with IBM 3592 cartridges, this scalable, high-performance solution is ideal for organizations with vast data storage needs. Whether you're archiving critical business data or managing large-scale backups, the TS4500 with TS1170 offers reliable data retention, efficient management and seamless scalability to accommodate your evolving storage requirements.

IBM Storage® Archive supports unstructured data on tape

Simplified user access to data

IBM Storage Archive is an innovative solution that supports unstructured data on tape that allows direct access by users and applications without administrator intervention. With user-friendly access and seamless integration, your business can effortlessly retrieve and use your valuable data, enhancing productivity and streamlining data management processes. This feature-rich combination empowers your organization to optimize your storage infrastructure and efficiently handle unstructured data with ease and accessibility.

Field upgradable paths to expansion

TS4500 provides a flexible upgrade path to expand tape storage as needs grow. In addition, it enhances asset protection by letting you upgrade tape drives and media in the existing tape library. TS4500 accommodates evolving storage requirements without requiring replacement of the entire infrastructure. This advantage means organizations can confidently invest in the TS4500 knowing they can efficiently expand and adapt their tape storage environment in the future.

IBM Storage® Archive supports unstructured data on tape and is accessible directly by users and applications without administrator intervention.



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Table 1. IBM TS4500 with IBM TS1100 tape technology

	Base frame	Drive-capable and Storage expansion frame	Storage-only expansion frame	Total support per library
Frame definition	L25	D25	S25	-
Input/Output (I/O) slots	32 slots	32 slots	-	-
Tape drive types	TS1170, TS1160, TS1155, and TS1150		-	-
Tape drive cartridge	3592 cartridges			
Compression rate	3:1 compression			
Number of frames per library	One base frame	One base frame, up to 17 expansion frames with a maximum of 7 D25 frames		18 frames
Number of drives	Up to 14 when not positioned as frame 1	Up to 16 per frame	-	Up to 128 per library
Number of tape cartridges	Up to 660 (up to 550 in frame 1)	Up to 740 (up to 590 in frame 1)	Up to 1000 (up to 798 in frame 1)	Up to 17,550
Capacity* with 3592 advanced cartridges	Frame 1: Up to 27.5 PB native / up to 82.5 PB compressed Any frame: Up to 33 PB native / up to 99 PB compressed	Up to 877.5 PB native / 2.63 EB compressed per library		
Operating systems support	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.

Table 2. IBM TS4500 with IBM LTO tape technology

	Base frame	Drive-capable and Storage expansion frame	Storage-only expansion frame	Total support per library
Frame definition	L55	D55	S55	-
Input/Output (I/O) slots	32 slots	32 slots	-	-
Tape drive types	LTO Ultrium 10,9,8,7, and 6 tape drives		-	-
Tape drive cartridge	LTO Ultrium 10,9,8,7, 6, 5 and 4 tape		-	-
Compression rate	2:5:1 compression			
Number of frames per library	One base frame	One base frame, up to 17 expansion frames with a maximum of 7 D55 frames		18 frames
Number of drives	Up to 14 when not positioned as frame 1	Up to 16 per frame	-	Up to 128 per library
Number of tape cartridges	Up to 882 (up to 730 in frame 1)	Up to 970 (up to 774 in frame 1)	Up to 1,320 (up to 1,054 in frame 1)	Up to 23,170
Capacity* with LTO advanced cartridges	<p>Frame 1: Up to 21.9 PB native / up to 54.7 PB compressed</p> <p>Any frame: Up to 26.4 PB native / up to 66 PB compressed</p>	Up to 695 PB native / 1.73 EB compressed per library		
Operating systems support	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.

Conclusion

The IBM TS4500 Tape Library is ideal for midsized and large enterprises working with immense volumes of data or enterprises that require scalability from single library image. With high-density and highly available storage capacity and performance in a multi-directional, scalable configuration, this solution offers incredible value to backup and archival operations. It also includes features that optimize resource allocation and data resiliency in a modern data protection environment and is based on full-height LTO and IBM 3592 Tape Drives, providing secured data storage.

Why IBM?

The performance and availability of your storage environment can either enhance or hamper your business processes. IBM, a market leader in the storage industry, can help you handle these and other challenges—no matter the size of your organization.¹ Innovative technology, open standards, excellent performance and a broad portfolio of tested storage software, hardware and solutions are just a few of the reasons you should consider partnering with IBM to meet your storage needs.

For more information

To learn more about IBM TS4500 Tape Library, contact your IBM representative or IBM Business Partner or visit ibm.com/products/ts4500.

1. Tape Marketshare Report - 2024

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