IBM System Storage TS3310 Tape Library

Supporting business continuity and information lifecycle management

Highlights

- Provides a modular, scalable tape library designed to grow as your needs grow

- Features desktop, desk-side and rack-mounted configurations

- Delivers optimal data storage efficiency with high cartridge density using standard or write-once-read-many (WORM) Linear Tape-Open (LTO) Ultrium data cartridges

- Can simplify user access to data stored on LTO Ultrium 6 and 5 cartridges through the use of IBM Linear Tape File System™ software

- Doubles the compressed cartridge capacity and provides over 40 percent better performance compared to 5th generation LTO Ultrium drives

The IBM System Storage® TS3310 Tape Library is a modular, scalable tape library designed to address the tape storage needs of rapidly growing companies that find themselves space- and resource-constrained with tape backup and other tape applications.

Designed around a 5U-high modular base library unit, the TS3310 can scale vertically with expansion for LTO Ultrium cartridges, drives and redundant power supplies.

The base library module, model L5B, is the entry point for the product family. It contains all of the necessary robotics and intelligence to manage the 5U-high library system, which houses up to 41 cartridges—35 storage slots and six input/output (I/O) slots; and two LTO Ultrium 6, 5 and 4 tape drives.

The TS3310 model L5B can be expanded with the addition of expansion units, the model E9U.

Each model E9U contains 92 physical LTO Ultrium cartridge storage cells and space for up to four LTO Ultrium 6, 5 and 4 tape drives. Additionally, the E9U has space for up to two power supply modules, one of which is redundant. At least one power supply module must be installed if a drive is present in the E9U.

The TS3310 supports either standard or WORM LTO Ultrium data cartridges and has continued support for encryption of data with LTO Ultrium 6 and 5 tape drives. IBM Tivoli® Key Lifecycle Manager version 1 is required for encryption key management with LTO Ultrium 6 drives.

For organizations unsure of their short- or long-term tape capacity needs, the TS3310 Tape Library capacity-on-demand (CoD) capability allows the system to scale as needs grow. In the initially shipped configuration, an E9U has half of its storage cells enabled. The purchase of a CoD key enables the business to scale with the second half of the model E9U storage cells.

Building on the success of the patented IBM multipath archi-tecture, the TS3310 can be divided into one logical library per installed tape drive. These logical libraries can be simultane-ously connected to a wide variety of different servers, running different operating systems and tape applications.

IBM offers diverse management software solutions for the TS3310 Tape Library to enhance the use of multipath architec-ture as well as the use of a single TS3310 Tape Library. In addition, a key path diagnostic function is also available to assist administrative users in the setup, configuration or troubleshoot-ing of encryption-enabled libraries.

Management software options

Linear Tape File System Library Edition and IBM Tivoli Storage Manager	• Enables users of LTO Ultrium 6 and 5 tape library systems to inventory cartridges in the library and read, write and search data on any cartridge • Enables writing metadata or "tagging" of individual files for easy and fast access to any file stored on any cartridge in the library • Enables users to create, manage and optimize archives with Tivoli Storage Manager • Provides management of concurrent copies of content, plus active, inactive and offsite content
Tivoli Key Lifecycle Manager	• Enhances data security while dramatically reducing the number of encryption keys to be managed • Simplifies encryption key management with an intuitive user interface for configuration and management • Helps minimize the risk of loss or breach of sensitive information
Advanced reporting	• Provides graphical displays for diagnostic and trend analysis data, to help evaluate tape drive, and media performance and drive utilization parameters • Enables the Drive Resource Utilization Reporting and Media Integrity Analysis Reporting functions • Drive Resource Utilization Report can identify drives or group of drives that are nearing 100 percent utilization. • Media Integrity Report can measure and evaluate media and drive performance in the library.
Crossroads ReadVerify Appliance*	• Delivered in its own server, provides dynamic, multi-variable, user-managed reporting for understanding complex system interactions and projecting future budget and system needs • Helps maximize the performance and utilization of tape drives and media in the TS3310 by providing system monitoring, policy-based alerting and reporting • Automates the verification of media quality in idle tape cartridges, while creating an audit to supplement any regulatory compliance for archiving enabled by the ArchiveVerify features

TS3310 Tape Library configurations

	3576 model L5B	3576 model L5B and four E9U models
Configuration	Base library	Base library and 4 expansion units
Maximum LTO Ultrium storage slots	41	409
Maximum LTO Ultrium I/O slots	6	54
Maximum tape drives	2	18
Total physical capacity (2.5:1 compression)	Up to 256.25 TB	Up to 2.55 PB
Capacity-on-demand increments	N/A	46 cartridges
Maximum logical libraries	2	18

TS3310 Tape Library at a glance

Form factor/height (H x W x D)	L5B: 219.7 mm (8.65 in.) × 443.2 mm (17.45 in.) × 801.4 mm (31.55 in.) L5B + E9U: 620.8 mm (24.4 in.) × 443.2 mm (17.45 in.) × 801.4 mm (31.55 in.)
Tape drive interface options	8 Gbps dual-port Fibre Channel (LTO Ultrium 6 and 5), 4 Gbps FC, 3 Gbps SAS and SCSI
Network interface	Ethernet
Power supply	L5B: 1 standard (2 maximum) L5B + E9U: 2 standard (4 maximum); L5B + E9U + E9U: 3 standard (6 maximum); L5B + 3 E9U: 4 standard (8 maximum); L5B + 4 E9U: 5 standard (10 maximum)
Hot-swap components	Power supplies, tape drives
Systems management	Storage Management Initiative Specification (SMI-S) enabled
Operating systems supported	Selected IBM servers and other Linux and Microsoft Windows open-system servers. Latest support information: **ibm.com**/systems/support/storage/config/ssic
Limited warranty	One year, 9 to 5, next business day
Weight	L5B: 38.6 kg (85 lb) max L5B + E9U: 88.5 kg (195 lb) max

Crossroads ReadVerify Appliance* at a glance

1U appliance providing real-time tape library monitoring and alerting

Individual drive utilization and performance metrics, as well as comparison across drives in a system
Statistics correlating activity by drive and cartridge
Supports LTO Ultrium, IBM Enterprise TS11x0 and other enterprise-class tape drives
Tape or drive, read or write error correlation; drive-cleaning metrics

Policy-based alerting and reporting

Daily and weekly reporting on tape library system activity—load-balancing, drive performance and utilization, hard and soft errors correlated to drives and tapes, and alert activity
Configurable alerts on potential data recovery issues, such as communication loss, degrading device conditions, stuck tape and excessive tape loads
Accessible database of all monitored and derived statistics

ArchiveVerify optional feature

Enables users to ensure that the data written to tape media can be read for recovery or compliance audits
Offers a completely automated process to validate media readability based on administrator-applied policies
Verification procedures test the entire written length of written media with no disruption of existing operations, all while the data remains securely within the library

ReadVerify Advanced Reporting optional feature

Generates dynamic, customizable, multi-variable reports
Identifies complex relationships that may impact system behavior, saving operation and capital expenses
Provides long-range data views to help project future budget and system needs

Physical characteristics

SAN connectivity	1, 2, 4 Gb Fibre Channel support
AC power	100–240 V ac auto-sensing 50/60 Hz, 4.0 amps
Dimensions (H x W x D)	43.1 mm (1.72 in.) (1U) × 426 mm (16.8 in.) × 358 mm (14.1 in.)
Weight	10.4 kg (23 lb)

Operating environment

Temperature	10°C – 40°C (50°F – 104°F)
Relative humidity	20% – 80% noncondensing
Heat output	564 BTU
Warranty	One year, provided directly by Crossroads Systems, Inc.

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, we can help you handle the challenges that your network or company as a whole encounters.

Innovative technology, open standards, excellent performance, and a broad portfolio of storage-proven software, hardware and solutions offerings—all backed by IBM with its recognized leadership—are just a few of the reasons why you should consider IBM storage offerings.

For more information

To learn more about the IBM System Storage
TS3310 Tape Library, please contact your
IBM representative or IBM Business Partner, or visit:
ibm.com/systems/storage/tape/ts3310/

For Crossroads ReadVerify Appliance
support and warranty information, visit:
http://www.crossroads.com/CustomerSupport/HelpDesk.asp

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