IBM System Storage TS1130 Tape Drive

Highlights

- ***Provides information security with support for encryption and key management***
- ***Optimizes information retention with support for existing IBM tape automation***
- ***Supports Write Once Read Many (WORM) cartridges to help satisfy compliance requirements***
- ***Offers high performance and high capacity for storage consolidation***

Overview

Marketplace and customer demands require applications that rely on high capacity, fast access to data or long-term data retention. The IBM System Storage™ TS1130 Tape Drive (TS1130 tape drive) features storage capability to help you establish easy access to data, better security, long-term retention and data governance and regulatory compliance. The TS1130 tape drive offers high-performance flexible data storage with support for data encryption. The TS1130 tape drive can help you protect your investments in tape automation by offering compatibility with existing automation. To further protect your investment, an upgrade model is available for your existing IBM System Storage TS1120 Tape Drives. And to support a heterogeneous server environment, the TS1130 offers multiplatform support.

The TS1130 Tape Drive supports IBM System Storage TS3400 and TS3500 Tape Libraries, IBM TotalStorage® 3494 Tape Libraries, IBM Virtualization Engine TS7700, IBM racks that enable stand-alone installation, and IBM 3952 Tape Frames Model C20 (3952C20 frame) attached to a Sun 9310 library.

- *For fast access to data, limited capacity (128 GB).*
- *To reduce resources to lower total cost, standard capacity (640 GB).*
- *For long-term retention, extended capacity (1 TB).*

To help optimize drive utilization and reduce infrastructure requirements, the TS1130 tape drives can be shared among supported open system hosts on a Storage Area Network (SAN) or between IBM FICON® and ESCON® mainframe hosts when attached to an IBM System Storage TS1120 Tape Controller.

Access information at the speed of business

Leverage performance to handle the requirements of your business needs. The TS1130 tape drive supports a native data transfer rate of up to 160 MBps to deliver information at the speed your business demands. Help reduce backup and recovery times or require fewer resources to support the environment with the TS1130 tape drive transferring data up to:

- *320 MBps in open system environments where data typically compresses at 2:1.*
- *350 MBps in a mainframe environment where data typically compresses at 3:1.*

Address your needs in one tape storage solution

Lower your cost of ownership with the flexible usage of the TS1130 tape drive. Reduce the need to purchase two different tape drives with a tape storage solution that address both the need for high capacity, as well as fast access to data. Support data retention needs with 3592 WORM cartridges. Also, promote data interchange with the ability to read and write data in the same format as the previous IBM System Storage TS1120 and read data in the same format as the TotalStorage® 3592 Model J1A tape drives.

Encryption to protect sensitive data

In addition to storing, accessing and managing your data, security is an important compliance issue. Encryption is a potent technology to help protect data against theft or accidental loss, particularly data that contain personal or sensitive information of a company's customers.

Reduce the need for host-based encryption—and the concurrent drain on performance—or reduce the use of specialized encryption appliances with built-in data encryption capabilities from the TS1130 tape drive. This capability is intended to provide customers with greater ability to protect information if tape cartridges are lost or stolen by supporting the storage of the data in an encrypted form.

- *Generate and manage encryption keys for TS1130 tape drives across the enterprise with the IBM Encryption Key Manager component for the Java™ platform. The Encryption Key Manager provides the interface between the IBM encrypting tape drive products and external keystores.*

To further protect mission-critical data, the TS1130 tape drive provides advanced technology—such as error correction code and factory-written servo tracks on the tape cartridge—to provide precise head positioning. In addition, unique functions such as virtual backhitch and a high-resolution directory help improve small file write performance and improve recall access to data, respectively.

Simplify and better manage with multiplatform support

A heterogeneous server environment can simplify your storage environment. The TS1130 tape drive offers multiplatform support for IBM Power™ Systems, IBM System p™, System i™[1] and System x™, and is supported on System z™ servers by the TS1120 tape controller.

The TS1120 tape controller offers ESCON and FICON attachment of TS1130 tape drives in a TS3400, TS3500 or 3494 tape library, 3952 C20 frame or rack to support drives in a 3494 tape library the tape controller must reside in an IBM 3952 Tape Frame Model F05.

Reduce hardware and infrastructure requirements by sharing tape drives with FICON and ESCON hosts. The TS1120 tape controller also offers the ability to perform non-disruptive addition of tape drives, which helps enhance configuration flexibility and availability. Further information on supported environments can be found in the specifications in this document or at the following URL:

ibm.com/systems/storage/tape/ts1120

Support applications with storage management software

IBM Tivoli® Storage Manager and other compatible software offerings provide storage and tape management software for the TS1130 tape drive. Supported software and applications should be obtained separately from IBM, IBM Business Partners, or independent software vendors (ISVs). For a list of compatible software and additional information, refer to the TS1130 tape drive ISV Matrix at the following Web site:

ibm.com/systems/storage/tape/ts1130

Media capacity cartridge options

The IBM 3592 cartridges used in the TS1130 tape drive are available in short, standard and extended lengths and in rewritable and WORM formats. Cartridges can be ordered in packs of 20 and can be labeled and initialized, initialized only, or unlabeled and uninitialized. An RFID label option is also available. For more information, contact your IBM representative or IBM Business Partner or visit:

ibm.com/systems/storage/media

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TS1130 tape drive at a glance

Characteristics		
Recording technique	Linear Serpentine	
Number of tracks	1152	
Native capacity (uncompressed)	1 TB (using JB/JX media), 640 GB (using JA/JW media) or 128 GB (using JJ/JR media)	
Native sustained data rate (uncompressed)	160 MBps	
Adaptive instantaneous data rates	163, 134, 109, 83, 56, 43 MBps for 3592 JB cartridges initialized in Gen 3 format 150, 127, 104, 78, 52, 40 MBps for 3592 JB cartridges initialized in Gen 2 format 71, 59, 47, 36, 24, 19, 13 MBps for 3592 JA cartridges initialized in Gen 1 format	
Burst data rate	400 MBps	
High-speed search (max)	12.4 mps	
Warranty	One year	
Physical characteristics		
Dimensions	95 mm H x 198 mm W x 467 mm D (3.8 in x 7.8 in x 18.4 in)	
Weight	5.7 kg (12 lbs 7 oz)	
Operating environment		
Temperature with media	16° to 32° C (60° to 90° F)	
Relative humidity	20% to 80% non-condensing (limited by media)	
Wet bulb maximum	26° C (78.8° F)	
Heat output	307 BTU/hr	
Power dissipation (drive and integrated blower)	46 Watts	
Platform Support		
	Platform	**Operating System**
IBM	Power Systems	IBM AIX®, IBM i[1], Linux
	System p	IBM AIX and Linux
	System i	IBM i[1] and IBM OS/400®[1]
	System x	see open system support
	System z	IBM z/OS®, IBM z/VM®, IBM VSE™ and Linux
Open Systems	Hewlett-Packard	HP-UX
	Sun Microsystems	Solaris
	Servers with Intel® or AMD processors	SUSE Linux®
		Red Hat
		Microsoft® Windows®
Encryption support		z/OS, z/VM, z/VSE, IBM i, AIX, HP, Sun, Linux and Windows

TS1120 Tape Controller at a glance

Characteristics	
Number of ESCON interfaces	up to 8
Number of FICON interfaces	up to 4
ESCON maximum channel link speed	17 MBps
FICON maximum channel link speed	400 MBps
ESCON maximum distance (unrepeated, single link to controller)	3 km
FICON long wavelength maximum distance (unrepeated, single link to controller)	100 km
FICON short wavelength maximum distance (unrepeated, single link to controller)	150 m
Warranty	1 year
Physical characteristics	
Dimensions	172 mm H x 442 mm W x 573 mm D (6.8 in H x 17.4 in W x 22.6 in D)
Weight	35 kg (78 lb)
Operating environment	
Temperature (with media)	16° to 32° C (60° to 90° F)
Relative humidity	20% to 80% non-condensing (limited by media)
Wet bulb maximum	23° C (73.4° F)
Heat output	2.05 BTU/hr
Power requirements	600 Watts

For more information

Contact your IBM representative or IBM Business Partner or visit:

ibm.com/systems/storage/tape/

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MB, GB and TB equal 1,000,000, 1,000,000,000 and 1,000,000,000,000 bytes, respectively, where referring to storage capacity. Actual storage capacity will vary based upon many factors and may be less than stated. Some numbers given for storage capacities give capacity in native mode followed by capacity using data compression technology.

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* Assumes 3:1 compression.

[1] WORM support not available.

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