

## IBM System Storage TS1120 Tape Drive



### Overview

The IBM System Storage™ TS1120 Tape Drive (TS1120 tape drive) offers a solution to address applications that need high capacity, fast access to data or long-term data retention. It is supported in IBM tape libraries, IBM frames that support stand-alone installation, and in an IBM 3592 Tape Frame Model C20 (3592 C20 frame) attached to a Sun StorageTek 9310 library.

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### Highlights

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- **Supports IBM Systems and selected open system platforms**
- **Supported on existing IBM and Sun StorageTek automation**
- **Offers native data transfer rate of up to 104 MBps**
- **Supports 3592 fast access, standard capacity and extended capacity cartridges**
- **Supports data encryption and key management**

The tape drive uses IBM 3592 Cartridges, which are available in limited capacity (100GB) for fast access to data, and standard capacity (500 GB) or extended capacity (700 GB) that help to reduce resources to lower total cost. All three cartridges are available in re-writable or Write Once Read Many (WORM) format.

TS1120 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 (TS1120 tape controller). Sharing drives optimizes drive utilization and helps reduce infrastructure requirements.

### **High performance**

The TS1120 tape drive supports a native data transfer rate of up to 104 MBps. In open system environments where data typically compresses at 2:1, the TS1120 tape drive can transfer data up to 200 MBps. In a mainframe environment where data typically compresses at 3:1, a single tape drive can transfer data up to 260 MBps. This can help reduce backup and recovery times or require fewer resources to support the environment.

### **Flexible usage**

As the TS1120 tape drive addresses applications that need high capacity as well as applications that require fast access to data, it can eliminate the necessity to purchase two different tape drives. Additionally, the TS1120 tape drive can use 3592 WORM cartridges that are designed to help support data retention needs and are also able to read and write 3592 re-writable

cartridges in the same format as the previous IBM TotalStorage® 3592 Model J1A tape drive to facilitate interchange.

### **Investment protection**

The TS1120 tape drive helps protect existing investments in tape automation by offering compatibility with existing automation. The TS1120 tape drive is supported in IBM System Storage TS3400 and TS3500 Tape Libraries (TS3400 tape library, TS3500 tape library) or the IBM TotalStorage 3494 Tape Library and can attach to IBM Virtualization Engine TS7700 or IBM Virtual Tape Server models. The TS1120 tape drive is also supported in the IBM 3592 C20 frame for attachment to the Sun StorageTek 9310 silo where it can co-exist with supported IBM and Sun StorageTek tape drives.

### **Encryption Support**

Increasing attention is being paid to the need to protect company data against theft or accidental loss, particularly data that contain personal or sensitive information of a company's customers. The TS1120 now includes data encryption capabilities within the drive itself, helping to avoid the need for host-based

encryption of data—and the concurrent drain on host performance—or the use of specialized encryption appliances. 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.

The IBM Encryption Key Manager component for the Java™ platform can help generate and manage encryption keys for TS1120 tape drives across the enterprise. This feature uses standard key repositories on supported platforms and supports three different encryption management methods: application managed, system managed, or library managed. The TS1120 tape drive supports transparent encryption, minimizing application changes in the system and library managed implementations. The TS1120 tape drive encryption capability is designed to avoid the need for application changes in the system and library managed implementations. The encryption capability is supported when the TS1120 tape drive is integrated into or attached to the TS3400 tape library, the TS3500 tape library, the TS1120 tape controller, the 3494 tape library, the IBM 3592 C20 frame or is used in stand-alone environments.

### **Multiplatform support**

To support a heterogeneous server environment, the TS1120 tape drive is supported on IBM System p™, System i™<sup>1</sup> and System x™ and supported on System z™ servers by the TS1120 tape controller.

The TS1120 tape controller is designed to offer ESCON and FICON attachment of either TS1120 or 3592 J1A tape drives in a 3494 or TS3500 tape library, 3592 C20 frame or standalone rack or frame. To support drives in a 3494 tape library and 3592 C20 frames, the TS1120 tape controller must reside in an IBM 3952 Tape Frame Model F05.

Tape drives can be shared by FICON and ESCON hosts, which may help reduce hardware and infrastructure requirements. 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/storage/tape/ts1120**

### **Application support**

IBM Tivoli® Storage Manager and other compatible software offerings provide storage and tape management software that supports the TS1120 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 TS1120 tape drive ISV Matrix at the following Web site:

**ibm.com/storage/tape/ts1120**

### **Advanced technology**

The TS1120 tape drive is designed to help protect mission-critical data and incorporates error correction code and factory written servo tracks on the tape cartridge for precise head positioning. In addition, unique functions such as

virtual backhitch and a high resolution directory are designed to improve access to data and reduce wear and tear on the media respectively.

### **3592 media**

The TS1120 tape drive requires the use of the IBM 3592 cartridge. Cartridges are available in short, standard and extended lengths and in re-writable and WORM formats. Cartridges can be ordered in packs of 20 and can be labeled and initialized, initialized only, or unlabeled and uninitialized. For more information, contact your IBM representative or IBM Business Partner or visit:

**ibm.com/storage/media**

### **Competitive financing options**

IBM Global Financing offers some of the industry's most competitive rates for a wide range of IBM products and services, including the TS1120 tape drive, for the duration of the financing term. For more information, please visit:

**ibm.com/financing**

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## TS1120 tape drive at a glance

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### Characteristics

Recording technique	Linear Serpentine
Number of tracks	896
Native capacity	700 GB (using JB/JX media), 300 <sup>3</sup> /500 GB (using JA/JW media) or 60 <sup>3</sup> /100 GB (using JJ/JR media)
Native data rate	104 MBps
Adaptive data rates	104, 85, 70, 55, 41 and 35 MBps for 3592 cartridges initialized in Gen 2 format 54, 41, 36, 31 and 27 MBps for 3592 cartridges initialized in Gen 1 format
Burst data rate	400 MBps
High-speed search	10 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 requirements	0.1 kVA

### Platform Support

	Platform	Operating System	
IBM	System p	IBM AIX® and SUSE Enterprise Server	
	System i	IBM i5/OS® <sup>1</sup> and IBM OS/400® <sup>1</sup>	
	System x	see open system support	
	System z	IBM z/OS®, IBM z/VM®, IBM VSE/ESA™ and SUSE Enterprise Server	
Open Systems	Hewlett-Packard	HP-UX	
	Sun Microsystems	Solaris	
	Servers with Intel® or AMD processors		SUSE Linux®
			Red Hat
			Microsoft® Windows® 2000, Windows NT®, Windows Server® 2003
Encryption support		z/OS, z/VM, i5/OS, AIX, HP, Sun, Linux and Windows	

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## TS1120 Tape Controller at a glance

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### 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

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## 3952 F05 frame at a glance

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Number of controllers	Up to three TS1120 controllers
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### Physical characteristics

Dimensions	1804 mm H x 644 mm W x 1102mm D 71.0 in H x 25.4 in W x 43.2 in D
Weight	279.5 kg (616 lbs)

### Operating environment

Temperature	50° F to 90° F (10° C to 32° C)
Relative humidity	20% to 80%
Wet bulb maximum	23° C (73.4° F)
Heat output	1190 Watts <sup>2</sup>
Power requirement	2046 BTU/hr <sup>2</sup>

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## 3592 C20 frame at a glance

Number of drives Up to twenty TS1120 or 3592 Model J1A drives

### Physical characteristics

Dimensions 1803 mm H x 724 mm W x 775 mm D  
71.0 in H x 28.5 in W x 30.5 in D

Weight 407 kg (896 lbs)

### Operating environment

Temperature 60° F to 90° F (16° C to 32° C) media limited

Relative humidity 20% to 80% limited by media

Wet bulb maximum 23° C (73.4° F)

Heat output 5.1 kBTU/hr<sup>2</sup>

Power requirement 1.5 kVA<sup>2</sup>

### For more information

Contact your IBM representative or  
IBM Business Partner or visit:

[ibm.com/storage/tape](http://ibm.com/storage/tape)

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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evaluate and verify the operation of any  
non-IBM product, program or service.

<sup>1</sup> Assumes 3:1 compression

<sup>1</sup> WORM support not available.

<sup>2</sup> Assumes 110V power

<sup>3</sup> Assumes Gen 1 format



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