High-capacity tape media designed for reliability

IBM 3592 Tape Cartridge

3592 rewritable cartridge

3592 WORM cartridge

Highlights

- ***Designed for the first generation IBM TotalStorage® Enterprise Tape Drive 3592 or the second generation IBM System Storage™ TS1120 Tape Drive***
- ***Available in rewritable and write once, read many (WORM) cartridge models***
- ***The JJ and JR cartridges provide fast access to application information***
- ***The JA/JW and JB/JX cartridges support high capacity requirements***
- ***Memory chip tracks cartridge and tape drive usage***

Overview

IBM 3592 Tape Cartridges are designed to work with the first-generation IBM TotalStorage Enterprise Tape Drive 3592 Model J1A (3592 J1A tape drive) and the second-generation IBM System Storage TS1120 Tape Drive (TS1120 Tape Drive).

Cartridges are available in three lengths and in either re-writeable or Write Once, Read Many (WORM) formats. The short length 3592 JJ/JR cartridges provide rapid access to data and the standard length 3592 JA/JW cartridges provide high capacity. The 3592 Extended Data JB and Extended WORM JX 700GB high capacity cartridges support TS1120 tape drives only.

Rewritable cartridges

The first-generation 3592 J1A tape drive can initialize short length JJ cartridges to 60GB and initialize

(or re-initialize) standard JA length cartridges to either 60GB (to support fast time to data) or 300GB (to support high capacity).

The second-generation TS1120 tape drive can initialize short length JJ cartridges to 60 or 100GB and initialize (or re-initialize) standard length JA cartridges to 60, 100, 300 or 500GB to support fast access to data or to help address data growth and facilitate interchange. 3592 Extended Data JB cartridges can be initialized to 140GB for fast access to data, can be segmented to 609GB or used at full 700GB capacity.

At typical compression ratios, the 3592 JB cartridge can provide usable capacity of up to 1.4TB in an open system environment and up to 2.1TB in an IBM System z™ environment when used with a TS1120 Tape Drive. The JA, JB and JJ cartridge models are suitable for storing data that has a finite life span and are re-writeable.

WORM cartridges

The TS1120 and 3592 J1A tape drives are designed to work with Write Once, Read Many (WORM) JR and JW cartridges to store data in a non-erasable, non-rewriteable format. The 3592 Extended WORM JX cartridge is designed to work with the TS1120 tape drive only. WORM cartridges are intended to help support the long term retention of reference data and meet the requirements of regulatory bodies worldwide. The short length JR, the standard length JW and the extended length JX cartridges have advanced security features that are designed to prevent the alteration or deletion of stored data while allowing data to be appended to existing cartridges or files.

Supported environments

Special grip points and a form factor that is similar to the IBM TotalStorage 3590 cartridge models allow the 3592 cartridges to co-exist in either an IBM TotalStorage Enterprise Tape Library 3494 or a StorageTek 9310 Powderhorn Tape Library. The 3592 cartridges can also co-exist in an IBM System Storage TS3500 Tape Library with IBM TotalStorage Ultrium™ LTO™ tape cartridges. This may reduce the physical tape resources and number of cartridges needed to support the environment and help reduce the cost of ownership.

Advanced media

The IBM 3592 tape cartridge contains an advanced fourth-generation metal particle formulation in a dual layer coating on a half-inch-wide tape. The IBM tape uses an advanced magnetic coating and process designed to provide a high output and signal quality to support the current TS1120 and 3592 J1A tape drives. The tape features an ultra-smooth and uniform magnetic layer less than 0.2 microns thick and a specially refined coating formulation designed to help improve media reliability and performance as well as minimize wear of the tape heads and components. A precision timing-based servo with enhanced features helps enable high track densities, high data rates and data access performance as well as high reliability and stop-start performance. In addition, modifications to the cartridge design and construction are designed to help improve pin retention, hub and clutch engagement, spool alignment and tape stacking within the cartridge. These enhancements are designed to help improve reliability and durability of not only the media but of the tape drive as well.

IBM 3592 cartridges at a glance

	Cartridge capacities when used with 3592 J1A Tape Drives		Tape Cartridge capacities when used with TS1120 Tape Drives		
Cartridge type	**JJ/JR**	**JA/JW**	**JJ/JR**	**JA/JW**	**JB/JX**
Native capacity	60GB	300GB	60GB 100GB	300GB 500GB	700GB
Open System capacity (2:1 compression)	120GB	600GB	120GB 200GB	600GB 1.0TB	1.4TB
System z capacity (3:1 compression)	180GB	900GB	180GB 300GB	900GB 1.5TB	2.1TB
Characteristics					
Long-length durability	300 full file passes				
Short-length durability	40,000 cycles at ambient				
Load/unload	20,000 load, unload, and initialization cycles				
Estimated archive life	Up to 30 years				
Warranty	10 years				
Physical characteristics					
Dimensions	24.5 mm H x 109 mm W x 125 mm D (0.97 in x 4.3 in x 4.9 in)				
Weight	239 g (8.4 oz)				
Tape length	2001 Ft nominal (610m) JB/JX 2706 Ft nominal (825m)				
Operating environment					
Temperature	16° to 32° C (60° to 90° F)				
Relative humidity	20% to 80%				
Wet bulb maximum	23° C (73.4° F)				
Safety characteristics					
Toxicity	Non-hazardous to human health in anticipated use				
Flammability	Self-extinguishing per UL94				

Cartridge memory

A cartridge memory chip that stores access history and media performance information is built into every cartridge. Records are written to the memory chip every time the cartridge is unloaded from a TS1120 or 3592 J1A tape drive. These records can be used by the IBM Statistical Analysis and Reporting System (SARS) programs to analyze and report on tape drive and cartridge usage and help diagnose and isolate tape errors. SARS can also be used to proactively determine if the tape media or tape drives are degrading over time.

Ordering options

All 3592 cartridge models are available in 20-packs that contain either unlabeled un-initialized cartridges, labeled initialized cartridges, or labeled cartridges. Labels are required for operation in an IBM tape library and are also used to identify cartridges visually for shelf storage or sending offsite to support business continuance. Cleaning cartridges are available in 5-packs with or without media ID labels.

For more information

For more information, contact your IBM representative or IBM Business Partner or visit **ibm.com**/storage/media. You may also contact 1-888-IBM-MEDIA.

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Produced in the United States of America
October 2006

GB equals one billion bytes; when referring to hard drive capacity, accessible capacity may be less.

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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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[1] See table on page 3.