

IBM TotalStorage 3590 Tape Drive



Frame-mounted 3590 Model E11

Overview

The IBM TotalStorage® 3590 Tape Drive family includes four models (the E11, E1A, H11 and H1A) that are designed to provide high levels of performance and reliability and can be integrated stand-alone and automated tape libraries.

Data Integrity and Reliability

The 3590 tape drive is designed for mission-critical data storage. Error Correction Codes (ECC) and servo tracks written on each tape cartridge help promote data integrity. Diagnostics dynamically monitor drive and media performance to detect potential problems and aid in resolution. In addition, the 3590 tape drive is designed to provide redundant data protection capabilities. Because data is systematically disbursed across the media as it is written and redundant parity checking bits are included, there is a lower chance of information loss should a media error occur.

Highlights

- **Supports IBM® @server® and selected open system platforms**
- **Offers native data rate of up to 14MB/sec**
- **Supports IBM and StorageTek automation**
- **Uses standard or extended-length 3590 tape cartridges**
- **Offers Ultra SCSI or Fibre Channel attachment**

High Performance

The 3590 tape drive provides a native data rate of up to 14MB/sec. With Ultra SCSI attachment, the 3590 Models E and H are capable of reaching sustained data rates of up to 34MB/sec with 3:1 compression. With native Fibre Channel attachment, the maximum sustained data rate is 42MB/sec (with 3:1 compression).

Configuration Flexibility

The 3590 tape drive is available in several configurations for Ultra SCSI and Fibre Channel attachment:

- *The 3590 Models E11 and H11 are rack-mounted and incorporate a 10-cartridge Automated Cartridge Facility (ACF) designed for high-capacity, unattended operation. The Models E11 and H11 can be converted to Models E1A or H1A.*
- *The 3590 Models E1A and H1A have no ACF and are designed to be incorporated into the IBM TotalStorage 3494 Tape Library.*
- *The 3590 Model C12 Silo Compatible Frame (with one to four Model E1A or H1A tape drives) provides attachment to the StorageTek 4410 and 9310 ACS.*

Supports Consolidation

High-capacity media along with high-performance drives can mean that less equipment, fewer cartridges, and fewer tape mounts are required to process the same amount of data. This can translate into less floor space being needed for tape drive, tape library and tape cartridge storage.

As data growth accelerates, the resulting potential savings from higher density media and higher performance drives can also help data center managers better control costs and more efficiently manage data. Because the 3590 tape drive can be used as the foundation for a broad array of storage systems, it helps protect existing investments. The 3590 also provides the capability to share tape drives through two Fibre Channel ports.

Investment Protection

Existing Model B11, B1A, E11 and E1A tape drives can be field-upgraded to the Model H, which helps protect existing investments in 3590 technology. Media investments are also protected since the Model E drives can read (both 128 and 256 tracks) and write (256 tracks) to existing cartridges. Model H drives can read (both 128 and 256 tracks) and write (384 tracks) to existing cartridges. Customers can choose the 3590 model that best suits their performance and capacity requirements.

Multiplatform Support

To support a heterogeneous server environment, the 3590 tape drives are supported on IBM @server iSeries™, pSeries®, xSeries® and zSeries® servers.

The 3590 tape drives are supported on IBM AIX®, i5/OS™ and OS/400® operating systems as well as HP-UX, Linux®, Sun Solaris, and Microsoft® Windows® 2000, Windows NT® and Windows Server™ 2003 operating systems. In an IBM @server zSeries and S/390® server environment, the 3590 drives are supported when attached to an IBM TotalStorage 3592 Tape Controller Model J70 on IBM z/OS®, VSE/ESA™ and z/VM® operating systems.

For more information on software support for 3590 drives, visit:

ibm.com/storage/tape/drives/3590/3590opn.pdf

Application Software

IBM Tivoli® Storage Manager, and other leading compatible software offerings, provide storage and tape management software for the 3590 drives. Supporting software and applications must 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 3590 ISV Matrix at ibm.com/storage/tape/conntrix/

IBM TotalStorage 3590 Tape Drive at a glance

	Model E11 (rack)	Model E1A (library)	Model H11 (rack)	Model H1A (library)
Characteristics				
Recording technique	Linear Serpentine	Linear Serpentine	Linear Serpentine	Linear Serpentine
Number of tracks ¹	256	256	384	384
Native cartridge capacity GB (with compression ²)	20 (60)	20 (60)	30 (90)	30 (90)
Extended-length cartridge capacity GB (with compression ²)	40 (120)	40 (120)	60 (180)	60 (180)
Native data rate	14MB/sec	14MB/sec	14MB/sec	14MB/sec
Burst data rate with UltraSCSI ²	40MB/sec	40MB/sec	40MB/sec	40MB/sec
Burst data rate with Fibre Channel ²	100MB/sec	100MB/sec	100MB/sec	100MB/sec
High-speed search	5 meters/sec	5 meters/sec	5 meters/sec	5 meters/sec
Warranty	One year	One year	One year	One year
Configuration Support				
3494 Tape Library				
L12 library frame		up to 2 drives		up to 2 drives
D12 drive frame		up to 6 drives		up to 6 drives
D14 drive frame		up to 4 drives		up to 4 drives
zSeries attached		up to 44 drives		up to 44 drives
Open System attached		up to 32 drives		up to 32 drives
StorageTek 9310				
3590 C12 frame		up to 4 drives		up to 4 drives
7014 T00 Frame				
zSeries attached	up to 4 drives		up to 4 drives	
Open System attached	up to 4 drives		up to 4 drives	
7014 T42 Frame				
zSeries attached	up to 4 drives		up to 4 drives	
Open System attached	up to 4 drives		up to 4 drives	
Physical characteristics				
Height	20.6" (522mm)	10.5" (262mm)	20.6" (522mm)	10.5" (262mm)
Width	9.1" (230mm)	8.8" (221mm)	9.1" (230mm)	8.8" (221mm)
Depth	39.0" (988mm)	29.8" (750mm)	39.0" (988mm)	29.8" (750mm)
Weight	103.0lbs (46.7kg)	66.0lbs (30.0kg)	103.0lbs (46.7kg)	66.0lbs (30.0kg)
Operating environment (all models)				
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	770 BTU/hr			
Power requirements	0.23 kVA			
Platform Support				
Platform	Operating System			
IBM	pSeries iSeries xSeries zSeries	AIX and SUSE Enterprise Server OS/400 and i5/OS see open system support z/OS, z/VM, VSE/ESA and SUSE Enterprise Server		
Open Systems	Hewlett-Packard Sun Microsystems Intel®	HP-UX Solaris Red Hat Linux SUSE Linux Microsoft Windows 2000, Windows NT, Windows Server 2003		

¹ E Models use 16 sets of tracks, H Models use 24 sets of tracks

² Depending on data content, with 3:1 LZ1 compression

High-capacity media

Using Extended High Performance Cartridge Tape, a 3590 tape drive Model H can store up to 60GB of data (180GB with 3:1 compression) on a single cartridge. A 3590 tape drive Model E can store up to 40GB of data (120GB with 3:1 compression) on a single cartridge. Potential benefits include less tape cartridge handling, improvements in automation slot utilization, and a reduction in floor space requirements.

The 3590 metal particle tape media is housed in a cartridge with the same physical size as 3490 cartridges, enabling both to coexist in an IBM TotalStorage 3494 Tape Library. The 3494 tape library with 3590 tape drives provides access to as much as 1.87 TB (with 3:1 compression) of data.

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 3590 tape drive, for the duration of the financing term. For more information, please visit:

ibm.com/financing

For more information

Contact your IBM representative or IBM Business Partner or visit:

ibm.com/storage/tape



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5600 Cottle Road
San Jose, CA 95193

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September 2004
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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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