



IBM Spectrum Archive family Data Sheet

Highlights

- Enable cost-effective tape storage for hybrid cloud infrastructures
 - Seamless storage capacity addition for future growth & new use cases
 - Active archive for long-term storage with file system access to content
 - Portability of large amounts of data by bulk transfer to tape cartridges
 - Lower storage tier cost in an IBM Spectrum Scale environment
 - Help reduce TCO by replacing Tier 2 and Tier 3 with IBM tape libraries
 - Boost archive capacity without impacting data availability in the pool
 - Improve data availability and total capacity with support for two libraries
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Enabling an intuitive access to your tape storage for single archives up to those managing explosive data growth

Digitized information has been stored on long ribbons of tape since the dawn of computing. Over the decades as new storage technologies have appeared, such as hard disk drives and more recently flash solid-state storage, many industry analysts have predicted that tape storage would go extinct. But it hasn't. And thanks to software-defined storage (SDS) solutions like IBM Spectrum Archive, tape storage remains a cornerstone of storage architectures for many organizations and is a critical tool for emerging business solutions where cloud and analytics workloads are common.

IBM Spectrum Archive is a member of the IBM Spectrum Storage software portfolio designed to address data storage inefficiencies by changing the economics of storage with a layer of intelligent software. This software creates an efficient "data footprint" that dynamically stores every bit of data at an optimal cost, helping to maximize performance and ensuring greater security. The IBM Spectrum Archive family, which features the IBM Linear Tape File System (LTFS) technology, provides direct, intuitive and graphical access to data stored on Linear Tape-Open (LTO) tape cartridges, including the LTO 9 latest release, and IBM 3592 tape enterprise cartridges used in IBM tape drives and libraries. It eliminates the need for additional tape-management and data-access software.

IBM Spectrum Archive is a significant step in moving tape storage away from its reputation as complex and difficult to use. Unlike disk storage, tape has previously required device specific software to read, write and manage data stored on its cartridges in libraries. But IBM Spectrum Archive sets a new

standard for ease of use and portability for open-systems tape storage. Users can run any application designed for disk files against tape data without concern for the fact that the data is physically stored on tape. One of the strongest ways to protect data is to make a copy and store that copy physically isolated from unsecured networks or servers where cyber attacks could start. With that separation, malware can't find or alter the data. This approach is often called an *air gap* because no electronic connection exists between servers and data copies. Removing a tape from a tape drive is one example of an air gap. Sometimes we speak of virtual air gaps where data copies are separated from servers not by a physical gap but by secure software.

IBM Spectrum Archive gives organizations an easy way to use cost-effective tape drives and libraries within a tiered storage infrastructure. By using tape libraries instead of flash or disk storage for data that is stored for long-term retention, organizations can improve efficiency and reduce costs.

IBM Spectrum Archive simplifies data movement between flash/disk and tape, helping to lower costs and provide air gap capabilities without the need for proprietary tape applications.

IBM Spectrum Archive helps organizations perform the following:

- Create operational storage tiers with tape rather than storing static, unchanging files on costly disk storage.
- Archive digital assets for the long term so assets can be referenced and monetized for years to come.
- Create copies of data from operational storage, improving the efficiency and cost effectiveness of a tiered storage infrastructure.
- Utilize the inherent air gap potential of tape cartridges to increase organizational cyber resilience.

For managing your digital files with the LTFS format, IBM Spectrum Archive offers three software solutions: Single Drive Edition, Library Edition (both Single Drive and Library Edition are available for free download), and the most complete version — IBM Spectrum Archive Enterprise Edition (EE).

Using the IBM Linear Tape File System (LTFS) technology, IBM Spectrum Archive EE provides direct, intuitive and graphical access to data stored in Linear Tape-Open (LTO) Ultrium tape cartridges and IBM 3592 tape cartridges. It eliminates the need for additional tape-management and data-access software.

With IBM Spectrum Archive EE, accessing data stored on an IBM tape cartridge—instead of on disk—is transparent. IBM Spectrum Scale keeps a pointer to the data on tape and, if requested, retrieves the data without user or operator intervention. By leveraging the capabilities of IBM Spectrum Scale, IBM Spectrum Archive EE enables high performance and reliable access across the storage infrastructure. In turn, IBM Spectrum Archive EE enables IBM Spectrum Scale installations to add extensive capacity with lower media, floor space and power costs. And with policy-based migration, archive capacity can be expanded without impacting data availability.

IBM Spectrum Archive EE enables organizations to improve the cost-effectiveness of their cloud and analytics infrastructures by enabling:

- Operational storage tiers with tape, rather than storing cold data on costly disk storage.
- Storage of digital assets for the long term, so assets can be referenced and monetized for years to come.
- Creation of copies of data on operational storage, improving the efficiency and cost effectiveness of a tiered storage infrastructure.

Single Drive Edition, Access and manage all data in standalone tape environments as simply as if it were on disk

IBM Spectrum Archive Single Drive Edition (IBM Spectrum Archive SDE) allows access to all data on a tape cartridge in a stand-alone drive attached directly to a server or through bridge box as easily as if it were on disk. IBM Spectrum Archive SDE uses the file system's format and operating system (OS) resources to graphically display the contents of a tape cartridge in the OS's graphical user interface (GUI) format, typically a folder-tree structure. The metadata of each cartridge, once mounted, is cached in server memory. Metadata operations such as directory browsing and filename search do not require tape movement.

Similar to using a USB drive or memory stick, IBM Spectrum Archive SDE enables users to share data across platforms by simply dragging and dropping files. Access to data is faster and easier—users just load a tape into the drive and mount it into the file system, and then files become visible as if they were on a disk. Because access is not through backup software, cartridges formatted with IBM Spectrum Archive can be exchanged more easily between users working in different operating systems, using different software and in different locations. Users' operational agility and efficiency is increased because using IBM Spectrum Archive does not require extensive knowledge of tape.

Library Edition Enables cost-effective storage for managing explosive data growth

IBM Spectrum Archive Library Edition (IBM Spectrum Archive LE) can support data either on single tape cartridges or multiple cartridges in a tape library, automatically loading the cartridges per file access. It also graphically displays tape library contents in the operating system (OS) graphical user interface (GUI) format, typically a folder and tree structure. The metadata of each cartridge, once mounted, is cached in server memory. Metadata operations, such as browse directory and filename search, do not require tape movement.

Enterprise Edition Enabling the most-effective storage for managing explosive data growth

IBM Spectrum Archive Enterprise Edition (IBM Spectrum Archive EE) gives organizations an easy way to use cost-effective IBM tape drives and libraries within a tiered storage infrastructure. By using tape libraries instead of disks for Tier 2 and Tier 3 data storage—data that is stored for long-term retention—organizations can improve efficiency and reduce costs related to storing growing amounts of data. IBM Spectrum Archive EE seamlessly integrates with the scalability, manageability and performance of IBM Spectrum Scale, an IBM enterprise file management platform that enables organizations to move beyond simply adding storage—to optimizing data management.

With IBM Spectrum Archive EE, accessing data stored on an IBM tape cartridge—instead of on disk—is transparent. IBM Spectrum Scale keeps a pointer to the data on tape and, if requested, retrieves the data without user or operator intervention. By leveraging the capabilities of IBM Spectrum Scale, IBM Spectrum Archive EE enables high performance and reliable access across the storage infrastructure. In turn, IBM Spectrum Archive EE enables IBM Spectrum Scale installations to add extensive capacity with lower media, floor space and power costs. And with policy-based migration, archive capacity can be expanded without impacting data availability.

IBM Spectrum Archive EE enables organizations to improve the cost-effectiveness of their cloud and analytics infrastructures by enabling:

- Operational storage tiers with tape, rather than storing cold data on costly disk storage.
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- Creation of copies of data on operational storage, improving the efficiency and cost effectiveness of a tiered storage infrastructure.
- To solve file storage capacity and economic problems, choose IBM Spectrum Archive EE in conjunction with Spectrum Scale's policy engine for automating movement and transparent retrieval. This solution is beneficial both in cost and automation.

Select the Spectrum Archive Edition to grow your support at your pace. IBM Spectrum Archive provides cost-effective and reliable data storage, and the protection of air gap with simplified tape access plus the rapid deployment of Software Defined Storage.

IBM Spectrum Archive Enterprise Edition at a glance

Hardware requirements	Single Drive Edition	Library Edition	Enterprise Edition
Supported tape systems*		IBM TS4500 Tape Library	
		IBM TS4300 Tape Library	
		IBM TS3500 Tape Library	
		IBM TS3310 Tape Library	
		IBM TS3200, IBM TS3100 IBM TS2900 Tape Autoloader Selected Non-IBM tape libraries	Up to two libraries supported per IBM Spectrum Archive cluster
Supported tape drives*	IBM LTO Ultrium tape drives (Generation 5 or later)		
	IBM 3592 Enterprise tape drives (IBM TS1140 or later)		
Supported tape media*	Tape cartridge, which is compatible with the supported tape drive and features tape partitioning		
Software prerequisites			IBM Spectrum Scale
Supported operating systems*	RedHat enterprise Linux (x86-64 or ppc641e)		
	Microsoft Windows Apple macOS		
Optional Software		IBM Spectrum Protect	
			IBM Spectrum Discover
			OpenStack SwiftHL
			Grafana
			MinIO
Warranty	Free download Linux and macOS software from IBM Fix Central without warranty or support	Multi-year warranty agreement	
	Object-code only for Windows versions	Object-code-only license under International Program License Agreement (IPLA)	
			No-cost trial virtual machine (VM) image is available from IBM website

* For details of supported hardware and operating systems, see the Planning section of product documentation at IBM Knowledge Center [website](#).

For information on the connectivity of tape drive, see the information at IBM Systems Storage Interoperation Center (SSIC) [website](#).