

IBM Spectrum Storage: Unleashing more value from all of your data

Achieve new levels of agility, control and efficiency with the IBM Spectrum Storage family



Introduction

In today's fast-paced, data-driven world, organizations must respond to competitive pressures faster than ever. And yet they must still keep their costs under control. With the rise of analytics, mobile and social technologies, the modern organization has massive volumes of data that can deliver strategic value. A key challenge comes down to how to store all of this data in a scalable, efficient way so businesses can get to the insightful nuggets that provide an edge in the marketplace.

Many organizations are ready to deploy the next generation of storage solutions so that they can improve agility, performance, reliability and cost efficiency. In response, IT organizations are looking to emulate the agility of, and integrate with, cloud services. While cloud storage can help reduce costs, adding yet another type of storage could also add complexity to management.

Software-defined storage is a concept that's gaining traction across a wide range of industries, since it enables organizations to obtain the most value possible from business data, no matter where that data is stored. Now, organizations can get away from simply adding another "box" to their storage environment—a costly and inflexible practice. The right storage software can help them unlock the value of their data.

In this brochure, we'll take an in-depth look at how software-defined storage can help organizations overcome the challenges in their traditional storage environments. Next, we'll introduce the IBM® Spectrum Storage™ family, a new storage software portfolio designed to change the economics of storage with a layer of intelligent software. IBM Spectrum Storage delivers proven technology for software-defined storage that can dynamically and flexibly store data at optimal cost, helping maximize performance and ensure data protection.

The headaches of traditional storage

For many years now, organizations have struggled with explosive data growth—and new mobile applications, big-data analytics and cloud initiatives have pushed traditional storage approaches to a breaking point. Traditionally, organizations have responded to storage demands by:

- Simply adding storage capacity, driving up costs for both storage and management
- Simplifying management but creating isolated silos of capacity that block data sharing among applications
- Manually managing their heterogeneous systems, increasing administrative overhead
- Duplicating data across storage pools or geographic locations, driving up costs and the need for storage even more
- Expanding to the cloud on an ad-hoc basis, creating more isolated data to manage

This traditional storage model creaks at the seams when it's asked to be responsive, flexible and adaptive to current storage demands—and the costs just continue to climb. A recent study showed that even as budgets allocated to storage continue to grow, cost reduction is an extremely commonly cited business initiative.¹ Meanwhile, organizations need to deploy storage more quickly and flexibly than ever before. Ideally, they would deploy a storage infrastructure for one application or test suite and then quickly reuse it for a different purpose.

Software-defined storage to the rescue

In simple terms, *software-defined storage* refers to separating the software that provides the intelligence for storage from the traditional hardware platform, which enables greater deployment flexibility for organizations. Much like virtualized server environments, the common theme is on the value that software brings to the storage arena.¹

Key benefits of software-defined storage

- **Increased flexibility**—Organizations can use a mix of heterogeneous hardware to meet changing demands.
 - **Automated management**—Policy-driven control helps put data in the right place at the right time with the right cost, automatically.
 - **Cost efficiency**—Using standards-based hardware, organizations can lower both acquisition costs and total cost of ownership.
 - **Virtually limitless scalability**—The storage infrastructure can be scaled out and still managed as a single enterprise-class system with high performance and reliability.
 - **Enhanced agility**—Storage infrastructures can be updated rapidly to keep pace with business demands.
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In one sense, storage has been “software-defined” for decades. The difference is that in the past, the software ran only in dedicated storage systems rather than on servers. Today, however, storage software might run in a storage system, be provided to run on servers like other applications, or be delivered as a cloud service.

IBM can help organizations transform to this modern version of software-defined storage within their existing infrastructure. With this new model, IT teams can manage massive amounts of data where they want it, how they want it, and in a fast and easy manner, all from a single dashboard. The software helps organizations move data to the right location, at the right time—from flash storage for fast access, to tape and cloud storage for lower cost.

Introducing IBM Spectrum Storage

Continuing a long history of innovation (with more than 700 patents), the IBM Spectrum Storage family is designed to simplify storage management, scale to keep up with data growth, and optimize data economics. It represents a new, more agile way of storing data, and helps organizations prepare themselves for new storage demands and workloads. Unlike some solutions

for software-defined storage, the IBM Spectrum Storage family is based on proven technologies—integrated with a common interface—to help organizations simplify their storage infrastructures, cut costs and start gaining more business value from their data.

The IBM Spectrum Storage family includes IBM Spectrum Control™ and IBM Spectrum Protect™ for simplified management, IBM Spectrum Archive™ and IBM Spectrum Virtualize™ for increased efficiency, and IBM Spectrum Accelerate™ and IBM Spectrum Scale™ for the agility to meet changing needs.

IBM Spectrum Control

IBM Spectrum Control provides efficient infrastructure management for virtualized, cloud and software-defined storage. It is designed to help organizations easily transition to new workloads and updated storage infrastructures—delivering analytics that can help reduce storage costs by up to 50 percent.²

With capabilities for automated storage tiering, IBM Spectrum Control optimizes the placement of data on the type of storage that is most cost-effective for the data’s use. And a single console enables unified management across all types of data on disk, flash, file and object storage systems. In addition to supporting departmental and application views of storage, IBM Spectrum Control helps improve efficiency by automatically identifying unused storage for reclamation. Its usage metrics and pre-designed reports give storage teams the power to manage performance across an end-to-end storage environment.

IBM Spectrum Protect

IBM Spectrum Protect is a data protection platform that gives enterprises a single point of control and administration for backup and recovery. It enables reliable, scalable and cost-effective backups, and fast recovery for virtual, physical and cloud environments in organizations of all sizes. In fact, IBM Spectrum Protect can reduce backup infrastructure costs by up to 38 percent.³

With data deduplication and incremental “forever” backups, IBM Spectrum Protect delivers built-in efficiency that enables organizations to spend less on data protection and more on innovation. It simplifies backups by consolidating administration tasks. Plus, VMware integration means that storage teams can extend multi-site replication and disaster-recovery capabilities to their cloud applications.

IBM Spectrum Archive

IBM Spectrum Archive provides an easy-to-use interface that enables organizations to easily move infrequently accessed data from disk to tape without the need for proprietary tape applications. By optimizing storage tiers for cost and performance, IBM Spectrum Archive can reduce the total cost of ownership for archive data by up to 90 percent.⁴

IBM Spectrum Storage family: Revolutionizing your data economics

	IBM Spectrum Control	Analytics-driven data management to reduce costs by up to 50 percent
	IBM Spectrum Protect	Optimized data protection to reduce backup costs by up to 38 percent
	IBM Spectrum Archive	Fast data retention that reduces total cost of ownership for active archive data by up to 90 percent
	IBM Spectrum Virtualize	Virtualization of mixed environments stores up to 5 times more data
	IBM Spectrum Accelerate	Enterprise storage for cloud deployed in minutes instead of months
	IBM Spectrum Scale	High-performance, highly scalable storage for unstructured data

IBM Spectrum Archive enables users and applications to access data anywhere, any place, anytime, in any format. With scalable, low-cost storage, IBM Spectrum Archive can help organizations keep pace with the increasing storage demands driven by modern workloads.

IBM Spectrum Virtualize

With the power of virtualization and IBM Real-time Compression™, IBM Spectrum Virtualize can help organizations unlock the business value of stored data and drive better results. By virtualizing traditional storage environments, storage teams can store up to five times more data for analytics in the same amount of physical disk space.⁵

IBM Spectrum Virtualize software is at the heart of IBM SAN Volume Controller and the IBM Storwize® family, which have been improving infrastructure flexibility and data economics for more than 10 years. IBM Spectrum Virtualize enables storage teams to easily move data between different pools of storage without disrupting applications or users—delivering ultra-high availability for the modern world.

IBM Spectrum Accelerate

A new enterprise-class storage offering for cloud environments, IBM Spectrum Accelerate delivers self-tuning storage in a software offering that's quick to deploy and easy to manage. In fact, IBM Spectrum Accelerate allows organizations to deploy an enterprise storage platform in as little as 30 minutes using existing x86 servers, while traditional storage offerings could take weeks or months to acquire and deploy.

In the era of cloud computing, IBM Spectrum Accelerate is designed to help organizations succeed with increased block-data agility for rapid deployment of data to public, private and hybrid-cloud environments. As data growth leads to greater storage demand, IBM Spectrum Accelerate can also mirror data to the cloud to keep up with that demand.

IBM Spectrum Scale

IBM Spectrum Scale is a proven, high-performance data, file and object management solution that can manage up to one billion petabytes of unstructured data. It redefines the economics of data storage using policy-driven automation: as time passes and organizational needs change, data can be moved back and forth between flash, disk and tape storage tiers without manual intervention.

IBM Spectrum Scale enables low-latency access to data from anywhere in a single name space. In a business environment where globally distributed projects are becoming the norm, this ability helps support collaboration by keeping workers connected to the data and resources they need, allowing for accelerated schedules and improved productivity. IBM Spectrum Scale also offers access to the OpenStack Swift object store, allowing the solution to easily manage objects such as images and videos.

The starting point for IBM Spectrum Storage

Software-defined storage is not a new concept for IBM—the offerings within the IBM Spectrum Storage family are based upon years of IBM storage innovation. And many organizations may already have elements of software-defined storage already in place.

IBM Spectrum Storage solutions can be deployed over time—and in any order—to meet unique needs. The solutions are designed to deliver revolutionary results in an evolutionary manner. No “rip and replace” is required. Organizations can leverage their existing investments and deploy solutions in the delivery model that serves them best, whether that's software, a cloud service or an optimized storage system.

For more information

To learn more about the IBM Spectrum Storage family, please contact your IBM representative or IBM Business Partner, or visit: ibm.com/spectrumstorage

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Actual available storage capacity may be reported for both uncompressed and compressed data and will vary and may be less than stated.

¹Mark Peters and Monya Keane, "Key Reasons to Use Software-defined Storage—and How to Get Started," *Enterprise Strategy Group*, February 2015. http://www-01.ibm.com/common/ssi/cgi-bin/ssialias?subtype=WH&infotype=SA&appname=STGE_TS_SW_USEN&htmlfid=TSW03296USEN&attachment=TSW03296USEN.PDF

²Based on IBM experience using storage analytics.

³Average of individual customer [Analysis Engine Reports from Butterfly Software](#), May 2013; savings include cumulative 36-month hardware, hardware maintenance and electrical power savings, excluding one-time Tivoli Storage Manager migration cost.

⁴Three-year total cost of ownership comparison of IBM TS3500 Tape Library/IBM Spectrum Archive solution to IBM DS5100 disk storage solution using IBM Spectrum Control for data management.

⁵IBM lab measurements, April 2012.



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