IBM

IBM Spectrum Virtualize software

Highlights

- Improve storage deployment flexibility with support for x86 servers
- Enjoy consistent management for on-premises and cloud storage
- Complement on-premises storage with hybrid cloud capability
- Help improve data security with software-based encryption
- Enhance storage functions, economics and flexibility

Gain greater flexibility with essential software for cloud deployments

Finding space for rapidly growing data volumes is a critical concern for enterprises today—but it's not the only data concern. Companies in a recent study ranked "improve backup/disaster recovery" and "reduce costs" as their top storage needs. And in the same survey, more than 75 percent said that to achieve these goals, they plan to increase spending on cloud services.[1] *How* the organization stores, manages and protects data, in other words, can be as important as *how much* capacity the organization provides for data.

To meet their functionality and capacity needs, an increasing number of enterprises are turning to software-defined storage. However, the use of software-defined—or "virtualized"—storage is still not as widespread as virtualized servers. That's because many users are not aware of the benefits that software-defined storage can provide, including efficient operations, cost savings and improved security—as well as cloud-based backup and disaster recovery.

IBM Spectrum Virtualize provides an ideal way to manage and protect the huge volumes of data organizations use for big-data analytics and new cognitive workloads. It is a proven offering that has been available for years in IBM SAN Volume Controller (SVC), the IBM Storwize family of storage solutions, IBM FlashSystem 9100 and VersaStack—with more than 176,000 systems running IBM Spectrum Virtualize. These systems are delivering six nines of availability while managing more than 10 exabytes of data.[2]

IBM is making it easier to achieve the benefits of software-defined storage. IBM Spectrum Virtualize is now available as a software-only solution, for use with x86 servers. IBM Spectrum Virtualize software delivers a full range of

sophisticated storage functionality, including:

- Support for more than 440 different storage systems from a wide variety of vendors

- Storage pooling and automated allocation with thin provisioning

- IBM Easy Tier automated tiering

- Sophisticated data reduction, enabling storing up to five times as much data for even the most demanding applications[3]

- Software encryption to improve data security on existing storage

- IBM FlashCopy and remote mirror for local and remote replication

- Support for using cloud storage to complement on-premises storage

- IBM HyperSwap for nondisruptive application and data mobility between data centers

- Support for virtualized server environments including VMware, Microsoft Hyper-V, IBM PowerVM, Kubernetes and Docker

Benefits include three times better performance with only five percent flash storage,[4] up to 63 percent lower personnel and management costs in conjunction with IBM Spectrum Control, and up to 100 percent better storage utilization.[2]

The benefits of IBM Spectrum Virtualize

IBM Spectrum Virtualize software delivers leading benefits that improve storage infrastructures in three key ways:

Improving data value

IBM Spectrum Virtualize software helps reduce the cost of storing data by increasing utilization and accelerating applications to speed business insights. To achieve this, the solution:

- Uses data reduction technologies to increase the amount of data you can store in the same space by up to five times

- Enables rapid deployment of cloud storage for disaster recovery along with the ability to store copies of local data with IBM Spectrum Copy Data Management software

- Moves data to the most appropriate type of storage based on policies you define using IBM Spectrum Control to optimize storage

- Improves storage performance so you can get more done with your data

- Utilizes thin provisioning to conserve physical space

Increasing data security

IBM Spectrum Virtualize helps protect data from theft or inappropriate disclosure while enabling a high-availability strategy that includes protection for data and application mobility and disaster recovery. To achieve this, the solution:

- Uses software-based encryption to improve data security

- Provides fully duplexed copies of data and automatic switchover across data centers to improve data availability

- Eliminates storage downtime with nondisruptive movement of data from one type of storage to another

- Provides full support for disaster recovery in VMware environments through integration with VMware Site Recovery Manger v6.0

Enhancing data simplicity

IBM Spectrum Virtualize provides a data strategy that is independent of your choice of infrastructure, delivering tightly integrated functionality and consistent management across heterogeneous storage. To achieve this, the solution:

- Integrates with virtualization tools such as VMware vCenter to improve agility with automated provisioning of storage and easy deployment of new storage technologies

- Enables supported storage to be deployed with Kubernetes and Docker container environments

- Consolidates storage—regardless of hardware vendor—for simplified management, consistent functionality and greater efficiency

- Supports common capabilities across storage types, providing flexibility in storage acquisition by allowing a mix of vendors in the storage infrastructure

The software layer provided by IBM Spectrum Virtualize to create software-defined storage in your physical infrastructure can provide a significant business advantage by delivering more services faster and more efficiently, enabling real-time business insights and supporting more customer interaction. Capabilities such as rapid, flexible provisioning; simplified configuration changes; nondisruptive movement of data among tiers of storage; and a single user interface

help make your storage infrastructure simpler, more cost-effective and easier to manage.

Gain storage visibility, insight and control

As the resource on which your business depends, data is paramount. Your storage systems take on even greater importance. IBM Storage Insights and IBM Storage Insights Pro provide critical capabilities that enhance your experience throughout that data's lifetime:

- A single dashboard so you can see the status of all your IBM block storage at a glance

- Trend information about capacity and performance so you can make better and more informed decisions

- Storage health information that helps you bring your configuration in line with best practices

- When support is needed, the ability to easily open a ticket, upload log information and view open tickets

- Detailed configuration data available to IBM specialists to help close tickets quickly

Delivered as a service from IBM Cloud at no charge, Storage Insights is quick and easy to set up and requires no ongoing software maintenance. Storage Insights Pro is an upgrade that provides more detailed information and additional capabilities.

Proven benefits, new deployment

The benefits of IBM Spectrum Virtualize software are proven in thousands of installations, but the ability to use the software on x86-based servers provides new opportunities for hybrid cloud deployments and hosted private clouds.

IBM Spectrum Virtualize software is a core enabling technology for cloud infrastructures, delivering the efficiency and flexibility clouds require. This IBM solution enables enterprises, service providers or solutions integrators to deploy servers and decide what role the servers will play by installing different software. Using server virtualization software, servers become compute engines, but with IBM Spectrum Virtualize software, those servers transform storage. As needs change, the balance of server types can change simply by changing the software running on them. In such deployments, cloud infrastructures become more flexible, and acquisition and deployment are streamlined.

Similarly, businesses using storage-as-a-service providers or colocation data centers can deploy IBM Spectrum Virtualize on x86 servers in order to experience the same benefits at the service provider location that they experience in their own data center. IBM Spectrum Virtualize enables storage administration to occur at a service provider's site in the same way that it occurs in an

on-premises data center, regardless of the type of storage being used by the provider. Replication from on-premises storage built with IBM Spectrum Virtualize to cloud storage becomes easier and more flexible.

Improving, securing and simplifying data management

Traditional practices that provide data replication simply by copying storage at one facility to largely identical storage at another facility are increasingly not an option today—as this essentially doubles the cost of storage. The era is over in which organizations focused on infrastructure more than information, often disregarding cost and shortchanging the business functions that the infrastructure was supposed to support. Instead, organizations today are searching for better ways to store, manage, protect and use their data, including private clouds or hybrid clouds that combine on-premises and cloud storage for higher flexibility at lower cost. IBM Spectrum Virtualize provides a new solution to meet this challenge including hybrid cloud configurations using both continuous mirroring and snapshots.

[1]"Voice of the Enterprise: Storage," *451 Research*, 2016.
https://451research.com/customer-insight-voice-of-the-enterprise-overview

[2] Based on IBM internal measurements – April 2019.

[3] IBM lab measurements – April 2012.

[4] IBM lab measurements using IBM Easy Tier technology – August 2010.

IBM Spectrum Virtualize at a glance

	IBM Spectrum Virtualize as part of SAN Volume Controller, Storwize and FlashSystem families, or VersaStack systems	IBM Spectrum Virtualize software only
Optional functions	Purchased separately	All-inclusive
Licensing approach	Tiered cost per TB (SVC) or per enclosure (Storwize and FlashSystem families)• Perpetual and monthly licensing options	Simple, flat cost per capacity • Perpetual and monthly licensing options
Platforms	Installed on storage system platform	Installed on third-party x86 platforms
Hardware	Runs as an integrated system	Runs on supported x86 servers
License portability	• Transportable among SVC engines• Tied to Storwize or FlashSystem systems	Transportable among different supported x86 servers
Reliability, availability and serviceability (RAS)	• Integrated RAS capabilities• IBM Storage Insights	• Flexible RAS: server hardware diagnostics; software RAS• IBM Storage Insights
Service	IBM support for hardware and software	• IBM support for software• Hardware serviced by hardware vendor
Third-party hardware supported	N/A	• Lenovo System x3650 M5• Supermicro SuperServer 2028U-TRTP+
Supported storage systems	More than 440 IBM and non-IBM	More than 440 IBM and non-IBM

For the most current interoperability information, please visit IBM System Storage Interoperation Center

Why IBM?

IBM Spectrum Virtualize is a member of the IBM Spectrum Storage family of solutions, which also includes IBM Spectrum Control for analytics-driven data management; IBM Spectrum Protect for optimized protection and reduced backup costs; IBM Spectrum Archive for fast data retention; IBM Spectrum Accelerate for rapidly deployed cloud-based storage; IBM Spectrum Scale for high-performance, highly scalable storage for unstructured data; and IBM Spectrum Copy Data Management for simplified copy management.

IBM Research is a leader in the development of storage technologies in both software and hardware, including storage management and optimization capabilities. To help you get the most from your data, IBM offers industry-leading capabilities for analytics, content management and databases. With more than 40 global data centers powering thousands of customers, IBM is a leading provider of cloud-based storage and computing services.

For more information

To learn more about IBM Spectrum Virtualize software and the IBM Spectrum Storage family of storage software products, please contact your IBM representative or IBM Business Partner, or visit: ibm.com/us-en/marketplace/virtualization-software

Additionally, IBM Global Financing provides numerous payment options to help you acquire the technology you need to grow your business. We provide full lifecycle management of IT products and services, from acquisition to disposition. For more information, visit: ibm.com/financing

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