IBM SmartCloud Virtual Storage Center

Efficient storage and data management for cloud, virtual and software-defined storage environments

Highlights

- Consolidate file, object and block storage with one integrated management console

- Simplify storage and data management with the choice of an advanced, web-based user interface or a VMware vCenter plug-in

- Reduce storage costs with analytics from IBM Research that can automatically optimize tiered storage

- Adopt software-defined storage to help improve service levels and reduce storage costs

- Enable near-instant data protection and recovery

- Choose from a wide range of licensing plans

Around the world, organizations of all sizes are rapidly adopting new technologies—such as cloud, analytics, social media and mobile devices—to gain a competitive edge. But to be effective, these new technologies require an effective storage infrastructure that can adapt to changing performance requirements and massive amounts of unstructured data. As a result, organizations that once had storage environments dominated by traditional block storage are now adding file and object storage at a much faster pace.

A smarter way to manage storage

IBM® Virtual Storage Center enables organizations to make an easy transition to cloud-enabled, software-defined storage environments— because it is both a storage virtualization platform and a storage manage- ment solution. Virtual Storage Center is designed to support the new workloads and updated storage infrastructures required by today's dynamic organizations. The data and storage management software can significantly reduce IT costs by delivering user-friendly storage that is also application-oriented, flexible and automated.

Virtual Storage Center enables organizations to simplify and automate storage provisioning, capacity management, availability monitoring and reporting. It helps standardize processes without requiring organizations to "rip and replace" their existing storage systems.

In addition, Virtual Storage Center provides an end-to-end view of storage, helping IT staff manage huge volumes of data with confidence. It features:

- A single console for managing all types of data on disk, flash, file and object-based storage systems
- Simplified visual administration tools, including an advanced web-based user interface, VMware vCenter plug-in and IBM Cognos® Business Intelligence reporting
- Analytics-driven tiered storage optimization that can automatically move data to the most cost-effective tier
- Software-defined storage that is dynamic, service-oriented and cost effective
- Near-instant data protection and recovery capabilities that help protect data without impacting application performance
- Flexible licensing plans with deployment options to fit the needs of midsized organizations and large enterprises

A single management console

Virtual Storage Center enables IT staff to manage all types of data on disk, flash, file and object-based storage systems—all from a single console. New workloads, such as big-data analytics, can run more effectively on high-performance flash storage and expandable file and object-based storage systems. Yet, while storage is getting more complex, IBM storage management solutions are getting easier to use. Virtual Storage Center supports:
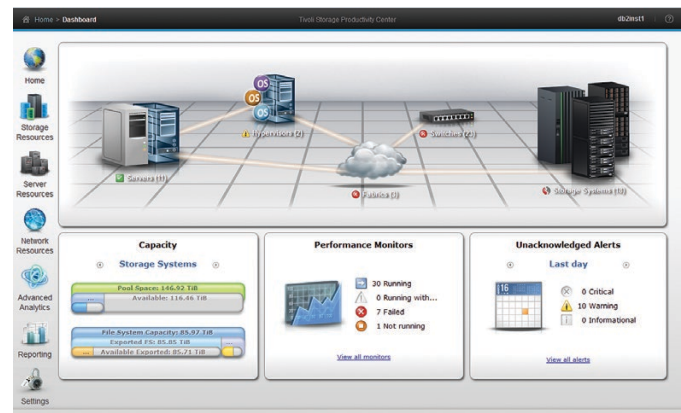
- File and object storage: IBM Elastic Storage™, IBM Storwize® V7000 Unified and NetApp systems
- All-flash systems: Broad platform support and additional integration for IBM FlashSystem™ V840
- Disk systems: More than 250 brands and models of block storage

Simplified visual administration

With advanced visualization tools, Virtual Storage Center can help reduce the skill level and time required to investigate and resolve storage infrastructure problems. Visualization can also help reduce administration errors and improve quality of service.

With Virtual Storage Center, storage administrators can:

- See storage as others see it, with application-oriented and departmental views of capacity, performance and data protection
- Analyze file systems and their underlying storage systems from the same interface
- Use guided administration and intelligent default settings to simplify routine maintenance
- Streamline management with a VMware vCenter plug-in that helps reduce complexity for VMware administrators

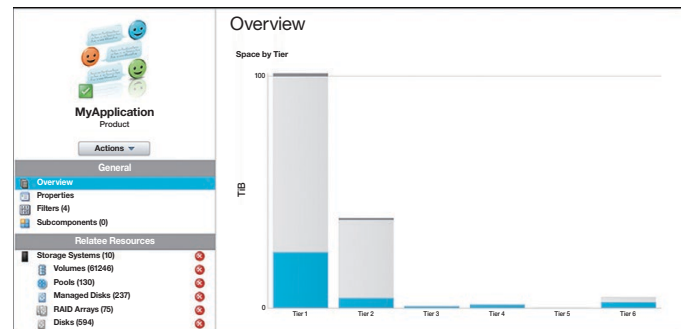An easy-to-use storage management dashboard

"This breakthrough technology optimizes storage by dynamically 'right tiering' for the optimal combination of cost and performance, given the exploding growth of data."

— Lynn A. Potter, vice president, application and infrastructure service management, IBM Office of the CIO

An application-oriented view of storage

Analytics-driven tiered storage optimization

Today's organizations need storage that can adapt automatically to changing workloads—optimizing performance without manual tuning. Virtual Storage Center uses proprietary analytics from IBM Research that can help keep storage optimized over time. Using the storage analytics engine in Virtual Storage Center, organizations can make storage tiering decisions based on actual usage patterns, rather than on predictions. In fact, this technology can help reduce the unit cost of storage by up to 50 percent.[1]

In addition, Virtual Storage Center includes IBM Easy Tier® technology for automated tiering of critical data. Easy Tier helps make the best use of available storage resources by automatically moving the most active data to the fastest storage tier, such as flash storage. This can help boost the performance of critical workloads across virtualized storage environments.

Software-defined storage

Virtual Storage Center enables organizations to turn their existing storage investments into software-defined cloud storage—no "rip and replace" is required. IT staff can adapt to the dynamic storage needs of today's applications by providing storage virtualization, automation and integration. Features include:
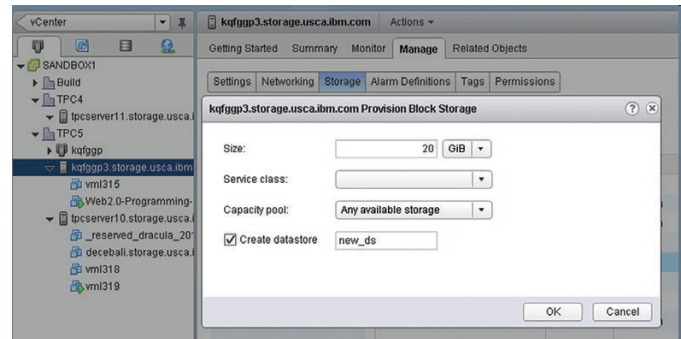
- Storage virtualization: Extend access to multiple storage systems from multiple vendors. Pooling storage devices enables users and applications to access capacity from any storage system—a significant advantage over the limitations inherent in traditional storage.
- OpenStack cloud application provisioning: Leverage OpenStack Cinder volume drivers to enable automated provisioning using any of the storage systems controlled by Virtual Storage Center.

- Self-service portal (optional): Support provisioning automation for self-service storage portals, such as IBM SmartCloud® Storage Access. It enables immediate responses to service requests while eliminating manual administration tasks.
- Pay-per-use invoicing (optional): Integrate with IBM SmartCloud Cost Manager and other chargeback systems to enable flexible usage accounting for storage resources. Virtual Storage Center can become the single source for usage metrics across storage-area networks (SANs), network-attached storage and direct-attached storage.

Near-instant data protection and recovery

To help reduce downtime in high-availability virtual environments, Virtual Storage Center provides advanced snapshot management and remote-mirroring capabilities. IT staff can perform fast, application-aware backups—without taking the application offline—to help mitigate the risk of data loss. Restores can also be performed in just a few minutes instead of hours. These application-aware snapshots are also supported with VMware virtual machines.

Plus, using the Metro Mirror and Global Mirror remote replication functions, organizations can replicate data across town or around the world to enable global data availability. Virtual Storage Center helps administrators balance network bandwidth requirements and recovery point objectives for applications, thus reducing operating costs for disaster-recovery solutions.

Integrated management within VMware

Choice of licensing plans

With Virtual Storage Center, organizations can choose from flexible licensing plans to meet their configuration and capacity needs. These options include:

- IBM Virtual Storage Center: Support virtualized storage in large-enterprise deployments.
- IBM Virtual Storage Center Entry: Add advanced management capabilities to limited-sized IBM SAN Volume Controller environments. Some restrictions apply.
- IBM Virtual Storage Center for IBM Storwize family: Get the right storage management features with per-enclosure pricing for organizations using Storwize family systems. Some restrictions apply.
- IBM Tivoli Storage Productivity Center: Support physical, non-virtualized storage using essential data and storage management components of Virtual Storage Center.

IBM storage infrastructure optimization

IBM has identified five best practices for storage infrastructure optimization, based on thousands of client engagements. IBM Virtual Storage Center addresses each best practice and enables users to make improvements without a "rip and replace" of their existing storage infrastructures:

- Reclamation, rationalization and planning—Storage resource management and comprehensive storage performance management capabilities automate or eliminate several storage planning tasks. IBM Virtual Storage Center can also identify duplicate data, potentially expired data and storage that is allocated but not in use.
- Virtualization and tiering—The solution enables automated storage tiering and virtualization for storage systems throughout the data center.
- Backup, restore and disaster recovery—The solution helps modernize data protection with software to enable remote mirroring, local and remote clusters, and snapshot management.
- Storage process and governance—IBM Virtual Storage Center helps link application requirements to storage capabilities through an integrated service catalog that enables administrators to define service classes based on performance and availability characteristics.
- Archive, retention and compliance—The solution enables migration of less active data to lower-cost storage tiers, delivering many of the cost benefits of archiving without disrupting users or applications. In addition, its integration with IBM Tivoli® Storage Manager helps implement data retention and compliance policies.

IBM Virtual Storage Center at a glance	
Included components	• IBM Tivoli Storage Productivity Center storage resource management and SAN fabric management software, including advanced functions such as a storage analytics engine, storage planners, change management tracking, best-practices gauge, file system scanning and disk optimizer • IBM SAN Volume Controller storage virtualization software core components—includes Easy Tier, Metro/Global Mirror and thin provisioning • IBM Tivoli Storage FlashCopy® Manager snapshot management and recovery software—includes support for IBM and NetApp application-aware snapshots
Hardware requirements	• IBM Virtual Storage Center server and client – Intel server running Microsoft Windows or Linux – IBM Power® server running IBM AIX® • Tivoli Storage FlashCopy Manager base system services and Microsoft Management Console Snap-in – Intel server running Windows • Storage virtualization hardware – SAN Volume Controller – Storwize family storage systems that support external virtualization
Optional components	• IBM SmartCloud Storage Access—portal that enables self-service, on-demand storage provisioning and reporting • IBM SmartCloud Cost Manager—uses storage chargeback data to enable accurate billing for services consumed • IBM Intelligent Storage Services Catalog—services offering that enables document application requirements to be more easily mapped to storage system capabilities • IBM Real-time Compression™—patented technology designed to reduce space requirements for active primary data; enables users to store up to five times* as much data in the same physical disk space and can work without impacting performance

Why IBM?

IBM can help organizations transition their storage to support the latest technologies—such as cloud, analytics, social media and mobile devices—while extending the value of their existing investments. IBM Virtual Storage Center helps organizations quickly migrate to an agile, cloud-based, software-defined storage environment that enables ample data growth with less complexity. What's more, IBM makes administration easy with proprietary analytics from IBM Research that automatically keeps data optimized across storage tiers.

For more information

To learn more about IBM Virtual Storage Center, contact your IBM representative or IBM Business Partner, or visit:
ibm.com/software/products/vsc

Additionally, IBM Global Financing can help you acquire the software capabilities that your business needs in the most cost-effective and strategic way possible. We'll partner with credit-qualified clients to customize a financing solution to suit your business and development goals, enable effective cash management, and improve your total cost of ownership. Fund your critical IT investment and propel your business forward with IBM Global Financing. For more information, visit:
ibm.com/financing

* Compression data is based on IBM measurements. Compression rates vary by data type and content.

[1] According to IBM storage infrastructure optimization assessments, 2011-2012.