Transform your business with cloud-ready storage

Realize wide-ranging cloud benefits using IBM Storwize family systems

Highlights

- Leverage cloud-ready storage to take full advantage of cloud benefits
- Achieve the high levels of efficiency, scalability, openness and accessibility, virtualization, and integration that the cloud requires
- Treat cloud computing as a growth engine for business by addressing the business imperatives of speed, user empowerment and economic performance
- Choose from a complete family of storage systems suited for virtualized environments ranging from entry- to enterprise-level

Originally valued primarily for its potential to help streamline IT costs, the cloud is now increasingly perceived as a growth engine for business—as an effective means of addressing requirements for speed, user empowerment and economic performance, three imperatives for business improvement on today's smarter planet. These needs are driving adoption of the cloud by organizations that strive to swiftly recognize and respond to opportunity. In fact, research shows that 72 percent of CEOs today see the need to improve response time to market.[1] Cloud can also empower business users to be more self-sufficient, as indicated by a recent joint IBM survey of business leaders that showed 36 percent are already managing cloud services without the involvement or support of IT.[2] Cloud adoption can also enhance organizations' economic performance. In a survey of executives, 31 percent cited the cloud's ability to reduce fixed IT costs and help them shift to a "pay-as-you-go" structure as a top benefit.[3]

Organizations that hope to take full advantage of cloud benefits to address these imperatives need a robust and flexible technology infrastructure they can rely on, including a cloud-ready storage component that can address the need to access, manage, back up and archive the vast amounts of data that cloud workloads generate. They need look no further than the broad IBM portfolio of cloud-ready storage, including the IBM® Storwize® family of storage systems.

IBM Storwize family: Cloud-ready in every way

Storwize systems deliver all the capabilities that cloud deployments demand. They're efficient and scalable, as well as open and accessible. And they're specifically designed for virtualization and integration, making them ideal complements to virtualized servers in cloud environments.

Efficient

An efficient, flexible storage infrastructure is essential to fully realize the cloud's promise of speed, user empowerment and improved economic performance. The Storwize family for cloud leverages advanced technologies to increase storage efficiency and flexibility:

- **Built-in virtualization** increases efficiency and reduces costs through consolidation and virtualization of storage resources, rather than by constantly adding resources and complexity to meet growing capacity demands.
- **Thin provisioning** provides the flexibility to allocate storage space only when data is written, rather than pre-allocating space, so that applications consume only the storage they need. Coupled with built-in virtualization, thin provisioning can increase disk utilization by 30 percent.[4]
- **IBM Easy Tier®** technology moves data dynamically so that only the most frequently used data is matched to high-performance flash storage. It has been demonstrated to provide up to three times the performance with only five percent flash storage usage.[5]

Increasing storage efficiency

Cloud service provider Databalance B.V. implemented an IBM Storwize V7000 disk system as part of a strategic initiative to empower its customers with a self-service provisioning portal. Deployed as part of a virtualized environment built around IBM PureSystems®, Storwize V7000 helps efficiently manage huge volumes of customer data. It uses built-in Easy Tier technology to automatically move frequently accessed information away from SAS drives to higher-performing flash drives for constant optimization of performance while managing cost.

Scalable

Organizations operating in the cloud must be able to quickly and flexibly scale their storage to accommodate changing workload demands. With Storwize family systems, they can easily scale up to add storage capacity and scale out to improve storage performance using technologies that include:

- **IBM Real-time Compression™,** which is fully integrated into Storwize systems, enabling them to store up to five times more active data in the same physical disk space[6]
- **Capacity scaling through clustered systems,** which makes it possible to scale up to 1.9 PB of data capacity without disruption to users or applications, and to support up to 960 disk drives

Feature	Benefits
Built-in virtualization	• Increases efficiency and reduces costs through consolidation and virtualization of storage resources
Capacity scaling	• Enables scaling up to 1.9 PB of data capacity without disruption to users or applications
Self-service access	• IBM SmartCloud Storage Access enables users to self-provision storage capacity on demand without administrator involvement

Delivering greater scalability

Data center hosting company Vissensa offers a unique alternative for clients launching new products: a high-performance computing platform that can be deployed on an Infrastructure-as-a-Service or Software-as-a-Service basis. A key component of the platform is the IBM Storwize V7000 Unified storage system, which Vissensa selected for its ability to help the company respond quickly to customer demands for greater scalability. The company has started with one Storwize V7000 system and intends to add more capacity—including higher-performing flash drives—as needed.

Open and accessible

The Storwize family for cloud supports private, public and hybrid cloud deployments, including those based on OpenStack. Support for OpenStack is part of the strong IBM commitment to an open-cloud, standards-based architecture. In fact, for OpenStack, IBM is the only vendor to support storage-based data migration, which helps enable higher performance without sacrificing network bandwidth or compute cycles. The family boasts other features for openness and accessibility, as well:

- **IBM storage for OpenStack** enables unique Storwize family features such as Real-time Compression and Easy Tier to be leveraged in any standard OpenStack environment.
- **OpenStack Cinder (Block Storage) Driver** helps automate storage provisioning and volume management for organizations that combine Storwize family systems with the OpenStack platform.

Self-service access is one of the key tenets of cloud computing. Through the use of **IBM SmartCloud® Storage Access**, users can self-provision storage capacity on demand without administrator involvement, which can lower provisioning times to just seconds.

Managing storage to speed data recovery

When consumer packaging manufacturer Huhtamaki Group went looking for a way to achieve computing economies of scale across far-flung geographic locations, the company found a perfect solution with IBM: fully virtualized server and storage capabilities consolidated into a centralized private cloud. In this IBM Power® server-based infrastructure, Huhtamaki uses SAN Volume Controller to manage a virtualized storage pool that includes IBM Storwize V3700 disk arrays distributed between primary and backup sites. With data replicated in real time between the sites, the company can restore data with no loss in the event of failure—and do it in a matter of minutes, rather than days.

Virtualized

Virtualized Storwize family systems are designed to smoothly fit into organizations' virtualized server environments, providing high performance and availability, advanced functions and highly scalable capacity. **IBM Active Cloud Engine™**, for example, enables highly-efficient policy-based management of files to help reduce costs and improve performance through use of tiered storage and local data caching.

Virtualizing for maximum performance and flexibility

Gearing up for the growth of its CyberCloud service, IT hosting and connectivity company Cyber Network turned to IBM for a flexible, high-performance infrastructure to support more scalability than its existing infrastructure could handle. Its IBM Flex System®-based infrastructure incorporates Storwize V7000 virtualized storage systems to provide extremely high levels of performance and flexibility.

Integrated

Because they are designed to integrate with purpose-built cloud systems, Storwize systems can be deployed quickly and cost-effectively to speed time to value and promote ongoing efficiency. The Storwize family is capable of various integrations, including:

- **Storwize systems with PureSystems** deployments in general, and with IBM PureFlex® and IBM PureApplication® systems in particular, to enable "out-of-the-box" compute cloud solutions
- **Storwize systems with IBM Systems Director Storage Control and IBM Flex System Manager™** to enable simplified management of IBM servers and storage from a single screen, by a single administrator
- **IBM Storage Management Console for VMware vCenter** software plug-in, to enable VMware administrators to centrally manage storage resources from a familiar interface that integrates into VMware vCenter and connects to supported Storwize systems

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Achieving fully integrated cloud-ready storage

In a move away from traditional reselling and toward cloud services, consulting company AXIANS sought a cloud-ready, flexible computing platform to support its shift in business strategy. Attracted by the simplicity of a complete system from a single vendor, AXIANS chose a PureFlex system, which integrates Storwize V7000 storage into an IBM Flex System x240-based infrastructure. The company's storage now totals about 12 TB in capacity and includes Easy Tier technology to move frequently accessed data to ultra-high-performance flash drives.

A complete family of systems covers the broad spectrum of storage requirements

With the Storwize family for cloud, IBM delivers cloud-ready storage infrastructure to meet a range of needs, from entry- to enterprise-level environments. A common architecture ensures that Easy Tier, IP replication with Bridgeworks SANSlide technology, and other innovative features are available across the entire family, and that new technologies can be immediately deployed to all products. The family includes:

IBM SAN Volume Controller: Storage virtualization system

IBM SAN Volume Controller is an industry-leading storage virtualization system that enhances existing storage to help improve productivity and availability—and, at the same time, help reduce costs.

IBM Flex System V7000 Storage Node: Integrated storage system

This powerful storage system is designed to enable rapid storage deployment and management simplicity through integration with compute, storage, networking, virtualization and management functions for PureSystems infrastructures.

Storwize V7000 and Storwize V7000 Unified: Midrange block and unified storage systems

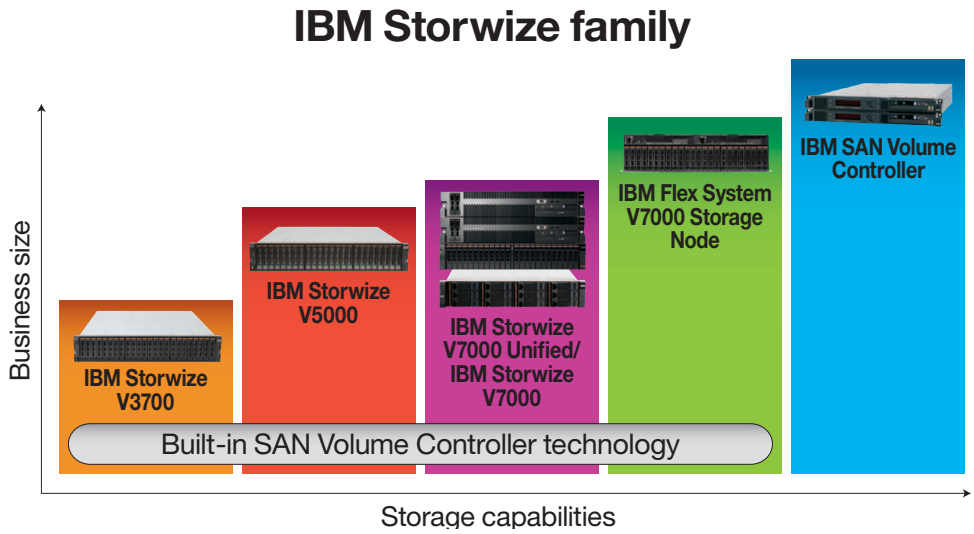
These highly scalable midrange, virtualized storage systems are designed to consolidate workloads into a single system for simplicity of management, reduced costs, superior performance and high availability.

IBM Storwize V5000: Midrange, highly flexible storage system

Storwize V5000 is a highly flexible, easy-to-use, virtualized system that enables midsized organizations to overcome their storage challenges with advanced functionality.

Storwize V3700: Entry storage system

Easy-to-use, efficient and affordable, Storwize V3700 is designed to address the growing data requirements and infrastructure consolidation needs of small and midsized businesses with sophisticated capabilities unusual for a system of this class.



Why IBM?

With a rich history of innovative leadership in both data storage and cloud, IBM storage solutions can help you build and run your private, public or hybrid cloud. The Storwize family is cloud-ready through a more efficient, automated and intelligent approach to storage that supports agile and secure cloud storage implementations. IBM cloud computing solutions provide the cloud technologies and professional services needed to build the cloud infrastructure that is right for your organization; one that enables users to innovate faster, empowers users with self-service, and helps your organization achieve the economic strength it needs to compete—and lead.

For more information

To learn more about the IBM Storwize family for cloud, contact your IBM representative or IBM Business Partner, or visit: **ibm.com**/storwize

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

[4] Forrester Consulting, "Total Economic Impact Study of IBM Storwize V7000," April 2012. http://www-01.ibm.com/common/ssi/cgi-bin/ssialias?subtype=WH&infotype=SA&appname=STGE_TS_DS_USEN&htmlfid=TSW03133USEN&attachment=TSW03133USEN.PDF

[5] IBM lab measurements – August 2010.

[6] Compression data based on IBM measurements; compression rates vary by data type and content. Real-time Compression not available in Storwize V3700 and Storwize V5000.

IBM Corporation
Systems and Technology Group
Route 100
Somers, NY 10589

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[1] "Leading Through Connections: Insights from the IBM Global CEO Study," *IBM PureSystems*, May 2012. http://www-935.ibm.com/services/us/en/c-suite/ceostudy2012/

[2] James Comfort, Craig Hayman and Susanne Hupfer, "Under cloud cover: How leaders are accelerating competitive differentiation," *IBM Center for Applied Insights and Oxford Economics*, October 2013. **ibm.com**/common/ssi/cgi-bin/ssialias?infotype=SA&subtype=WH&htmlfid=CIW03086USEN

[3] IBM Institute for Business Value, "The power of cloud: Driving business model innovation," *IBM Global Business Services*, February 2012. **ibm.com**/common/ssi/cgi-bin/ssialias?subtype=XB&infotype=PM&appname=GBSE_GB_TI_USEN&htmlfid=GBE03470USEN&attachment=GBE03470USEN.PDF

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