

IBM Storwize V7000 Unified with VMware vSphere

*Powerful, unified file and block storage for your cloud
and virtual infrastructures*



Highlights

- Extend the cost savings and efficiencies of server virtualization to storage devices
 - Deploy a tightly integrated virtualization platform for cloud infrastructures
 - Consolidate SAN and NAS workloads on a single storage system and manage with a single interface
 - Leverage built-in storage efficiency technologies including thin provisioning and automated tiering while extending the benefits of virtualization across the infrastructure
 - Reduce implementation risk and time with tested storage virtualization solutions
-

Today's storage administrators have many tools and technologies at their disposal, but creating a smarter storage infrastructure for virtualized and cloud deployments requires more than a big bag of tricks. It requires IT organizations to deploy the right mix of hardware and software solutions to meet the organization's goals for creating storage efficiencies, accommodating data growth and managing heterogeneous workloads, all while controlling infrastructure and administration costs.

On today's smarter planet, where instrumented, interconnected and intelligent devices are generating unprecedented volumes of data, taking a smarter approach to storage is essential. For many organizations that already may be realizing the benefits of server virtualization and are using virtualization as a foundation for cloud computing, virtualizing storage also is a natural part of that smarter approach.

Storage virtualization allows organizations to extend the value of virtualization across the larger infrastructure, supporting a dynamic cloud strategy using tools that the organization may already be leveraging. VMware vSphere, the industry-leading virtualization technology, gives these organizations a robust feature set that enables high performance and scalability, high availability and disaster recovery, and extensive automation in support of cloud implementations.



In order to build a dynamic and flexible storage virtualization environment IT organizations need a solid storage foundation—one that offers the peace of mind of high performance, data protection, nondisruptive migration and near-continuous availability. IBM® Storwize® V7000 Unified storage system provides this foundation, offering a platform that not only enables storage administrators to manage both SAN and NAS workloads from a single interface, but also delivers seamless integration with VMware vSphere for advanced virtualization capabilities.

Introducing IBM Storwize V7000 Unified

Storwize V7000 Unified is a powerful storage system that enables storage virtualization, consolidation and automated tiering for businesses of all sizes. The system combines the right mix of hardware and software components to help IT organizations optimize storage efficiency, improve application availability and ensure high utilization of valuable storage resources, all from a single point of control. And it consolidates block and file data storage into a single system, reducing complexity and costs.

As a virtualized storage system, Storwize V7000 Unified complements VMware environments and allows organizations to virtualize both new and existing external disk storage systems. The system offers robust enterprise-class storage capabilities bringing together a variety of IBM technologies including thin provisioning, automated tiering, internal and external virtualization, clustering, replication, multi-protocol support, and a next-generation graphical user interface. When combined with the capabilities of vSphere, these technologies enable IT organizations to extend the value of their storage investments.

The system also helps IT organizations control costs, not only by enabling new levels of storage efficiency but also by offering built-in capabilities at no additional cost—functions such as thin provisioning, automated tiering, replication, and other options that may incur additional costs when provided by competing platforms.



The IBM Storwize V7000 Unified complements VMware environments and consolidates block and file workloads into a single storage system for simplicity of management and reduced cost.

Leverage the power of integration

Tight integration between the Storwize V7000 Unified system and VMware allows for simple configuration and consolidated management while also increasing performance and improving efficiency. The Storwize V7000 Unified system has tight integration with VMware for block data, interoperating with VMware vCenter, VMotion, VMware Site Recovery Manager, as well as VAAI (VMware APIs for Array Integration). This allows more centralized management for IT administrators utilizing VMware management solutions with the IBM Storwize V7000 Unified storage system. Actions ranging from snapshot creation to virtual machine migration across hosts to disaster recovery can all be managed using VMware solutions, and physically executed by the Storwize V7000 Unified system.

Optimize SSD resources with automated tiering

Storwize V7000 Unified includes built-in capabilities for the automatic migration of frequently accessed data to high-performing solid state drives (SSDs). IBM System Storage® Easy Tier™ technology automatically and dynamically moves data to the appropriate class of drives based on I/O patterns and drive characteristics, with no administrative intervention required. Easy Tier makes it easy and economical to deploy SSDs in your storage environment, and as a result, application performance can improve by as much as 200 percent.¹

Allocate space efficiently with thin provisioning

With Storwize V7000 Unified, you can reduce the amount of idle storage capacity through thin provisioning. This built-in capability optimizes efficiency by allocating disk storage space in a flexible way among multiple users, based on the minimum space required by each user at any given time. This approach helps eliminate over-provisioning, resulting in more efficient use of storage capacity.

Minimize downtime with dynamic data migration

Migrating data is one of the most common causes of planned downtime. Storwize V7000 Unified includes a dynamic data migration function that is designed to move data from existing storage into the new system or between arrays in a Storwize V7000 Unified system, while maintaining access to the data. Dynamic migration can help organizations avoid costly business disruptions and eliminate the added expense of migration tools.

Protect data with replication services

Storwize V7000 Unified includes a rich IBM FlashCopy® function that is designed to create an almost instant copy of active data, which then can be used for backup purposes or for parallel processing activities. Up to 256 copies of each volume

may be created. For even greater flexibility, Storwize V7000 Unified supports Metro Mirror replication (at distances of up to 300 km) and Global Mirror replication (up to 8000 km). Both the FlashCopy and the mirroring functions are designed to support VMware vCenter Site Recovery Manager to help speed disaster recovery operations. Additional offerings are available from the Tivoli storage management portfolio—including IBM Tivoli Storage FlashCopy Manager and IBM Tivoli Storage Manager FastBack—that complement and enhance the built-in data protection capabilities of the Storwize V7000 Unified.

For network attached storage (NAS) data, the Storwize V7000 Unified offers data protection through a space-efficient file system and fileset-level snapshots (up to 256 per file system). Asynchronous replication for use in disaster recovery provides encrypted file replication over extended distances between two sites. The Storwize V7000 Unified leverages a built-in high speed scan capability, the IBM Active Cloud Engine™, to quickly identify the files and directories that have been created, modified or deleted for optimal replication purposes.

Combine block and file storage for efficiency and simplicity

Many organizations have deployed SAN attached storage for applications requiring the highest levels of performance, while separately deploying NAS storage for its ease of use and lower networking costs. Storwize V7000 Unified provides the ability to consolidate islands of data, both block and file, into a single system, eliminating multiple management points and improving storage utilization by sharing capacity across both types of access. A single, easy-to-use interface for both block and file storage reduces management complexity and delivers new levels of efficiency.

At the desktop level, organizations using the VMware View virtual desktop infrastructure can store virtual desktops on block storage and leverage the Storwize V7000 Unified system's Easy Tier function to reduce the number of drives required—while increasing storage performance. User data and profiles, on the other hand, can be allocated to file storage managed by the same Storwize V7000 Unified system, enabling file-related benefits such as virus scanning, snapshots, replication and native backup for this data.

The IBM and VMware partnership

To help you make the most of your IT investments, IBM together with VMware can deliver a complete virtualization platform that can be tailored to meet any organization's needs and environment. In partnership with VMware, IBM commits resources and establishes programs for ongoing testing, validation and interoperability. Together, IBM and VMware offer:

- The broadest platform of proven virtualization solutions, giving organizations flexibility and choice
- Deep integration between products for enhanced usability and advanced features
- Comprehensive service and support to protect your virtualization investments over the long term

As established leaders in the virtualization space, IBM and VMware are uniquely positioned to help organizations achieve their virtualization goals while minimizing business risk. This unique combination of hardware and software solutions enables organizations to dramatically reduce the complexity of IT, significantly lower IT costs and increase IT flexibility for improved business agility.

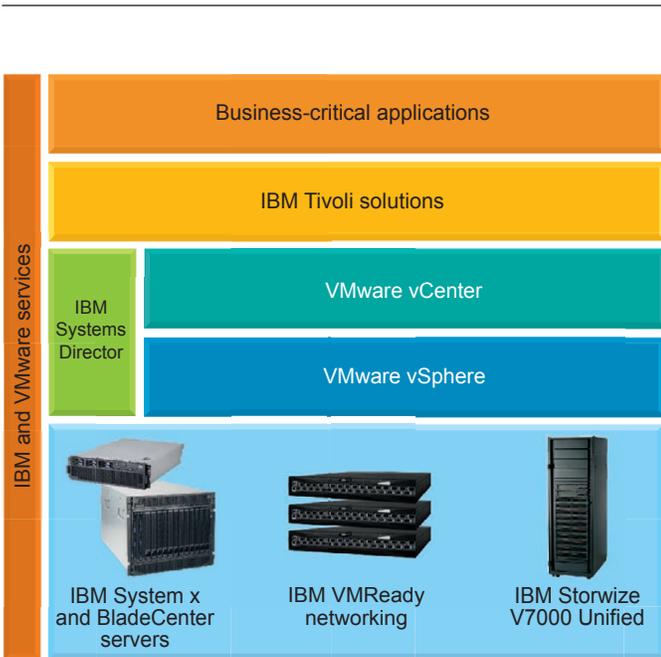
Proven interoperability for new levels of virtualization

VMware and IBM are the two original innovators in virtualization and have a long history of innovation and collaboration. Together the companies offer world-class solutions to help customers solve their IT challenges and achieve their business goals. IT organizations can reduce implementation risk and time by implementing interoperability-tested virtualization solutions from IBM including the Storwize V7000 Unified storage system and from VMware including the vSphere platform.

When it comes to disaster recovery, a virtual infrastructure built on VMware and IBM components such as the Storwize V7000 Unified delivers leading reliability and recovery features. And with its virtualized storage design and tight integration with vSphere 5, Storwize V7000 Unified is an ideal complement for virtualized servers that are at the heart of cloud deployments.

By deploying the Storwize V7000 Unified storage system with vSphere 5, IT organizations can:

- Improve storage performance and efficiency
- Extend the cost savings and efficiency of server virtualization to storage devices
- Leverage enterprise-class storage efficiency technologies such as thin provisioning and automated tiering
- Reduce complexity and simplify administration with a single, easy-to-use interface for consolidated block and file storage virtualization
- Improve uptime through nondisruptive data migration
- Help ensure effective disaster recovery through data replication
- Maximize the return on storage and VMware investments



Solutions from IBM and VMware work seamlessly to provide a layered, virtualized infrastructure that ensures business applications have the resources they need for flexibility, scalability and resilience.

Build a better foundation with IBM

In today's IT environments, growth typically means increased complexity. Virtualizing storage with Storwize V7000 Unified and vSphere 5 can help organizations manage growth while reducing IT complexity, providing capacity and capabilities that support growing business requirements with ease. The solution accommodates the diverse needs of IT organizations, including those with mixed workload environments and a combination of SAN and NAS infrastructures.

The performance and availability of your storage environment can either enhance or hamper your business processes. As a market leader in the storage industry, IBM can help you handle storage challenges by providing innovative technology, open standards, excellent performance, and a broad portfolio of proven storage software, hardware and solutions offerings—all backed by IBM's world-class maintenance and support. With IBM, you get the storage solutions and services you need without the complexity of dealing with multiple hardware and software providers.

For more information

To learn more about Storwize V7000 Unified, please contact your IBM sales representative or IBM Business Partner, or visit: ibm.com/storage/storwizev7000

For a list of high-quality solutions with our partner Independent Software Vendors (ISVs), including access to solution briefs and white papers, visit: ibm.com/systems/storage/solutions/isv

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



© Copyright IBM Corporation 2011

IBM Systems and Technology Group
Route 100
Somers, NY 10589

Produced in the United States of America
December 2011
All Rights Reserved

IBM, the IBM logo, ibm.com, System Storage, Easy Tier, FlashCopy, and Storwize are trademarks or registered trademarks of International Business Machines Corporation in the United States, other countries, or both. If these and other IBM trademarked terms are marked on their first occurrence in this information with a trademark symbol (® or ™), these symbols indicate U.S. registered or common law trademarks owned by IBM at the time this information was published. Such trademarks may also be registered or common law trademarks in other countries. A current list of IBM trademarks is available on the web at “Copyright and trademark information” at ibm.com/legal/copytrade.shtml

Other product, company or service names may be trademarks or service marks of others.

This document could include technical inaccuracies or typographical errors. IBM may make changes, improvements or alterations to the products, programs and services described in this document, including termination of such products, programs and services, at any time and without notice. Any statements regarding IBM's future direction and intent are subject to change or withdrawal without notice, and represent goals and objectives only. The information contained in this document is current as of the initial date of publication only and is subject to change without notice. IBM shall have no responsibility to update such information.

IBM is not responsible for the performance or interoperability of any non-IBM products discussed herein. Performance data for IBM and non-IBM products and services contained in this document was derived under specific operating and environmental conditions. The actual results obtained by any party implementing such products or services will depend on a large number of factors specific to such party's operating environment and may vary significantly. IBM makes no representation that these results can be expected or obtained in any implementation of any such products or services.

¹ Storage Performance Council, SPC Benchmark 1™ Full Disclosure Report: IBM Corporation, IBM System Storage DS8700 Release 6.1 (Easy Tier and SSDs), April 13, 2010. www.storageperformance.org/benchmark_results_files/SPC-1/IBM/A00092_IBM_DS8700_EasyTier-SSDs/a00092_IBM_DS8700_EasyTier-SSDs_SPC1_full-disclosure.pdf



Please Recycle