IBM

IBM Storwize V7000F

High-performance, highly functional, cost-effective all-flash storage

Today's organizations need to meet ever-changing demands for storage while also improving data economics. IT staff must deliver more services faster and more efficiently, enable real-time insight and support more customer interaction. Better than ever before, all-flash storage solutions from IBM Storwize can meet your requirements for fast, reliable and consistent access to data with extraordinary affordability.

IBM Storwize V7000F offers great performance, functionality and scalability. Enterprises looking to implement an all-flash solution with a rich set of storage services at very competitive initial deployment costs typically find Storwize V7000F an ideal solution.

Highlights

- Deploys all-flash performance with market-leading functionality
- Helps lower storage costs with data reduction pools
- Builds hybrid cloud storage solutions to increase business agility
- Maximizes storage utilization across more than 440 systems
- Simplifies storage management with an innovative user interface
- Provides an end-to-end view of storage health, performance and capacity
- Leverages the power of IBM Spectrum Virtualize

High performance and functionality

Storwize V7000F is an all-flash, highly scalable, virtualized, enterprise-class storage system designed to consolidate workloads into a single system for ease of management, reduced costs, superior performance and high availability. The 10-core CPU plus a data compression accelerator card accelerate storage throughput and performance. Storwize V7000F also leverages the advantages of enhanced flash drives and features an innovative new user interface, synchronous/asynchronous replication, more than 600 Storwize application programming interfaces (APIs), thin provisioning and snapshots, and a flash-optimized data reduction suite. These features make Storwize V7000F an ideal choice for organizations that need cost-effective high performance, highly functional all-flash storage with market-leading virtualization capabilities.

IBM Storwize V7000F supports the NVMe-oF protocol via the fibre channel adapters. This support accelerates the connectivity between devices and Storwize V7000, allowing to speed flash storage access for superior performance.

Powerful storage functionality

IBM Spectrum Virtualize serves as the block data plane backbone for the IBM Spectrum Storage family of software-defined storage solutions. Its innovative capabilities can combine isolated storage capacity and systems in mixed storage environments into a consolidated, virtual resource and then extend enterprise data services to all virtualized capacity, whether the underlying systems support the functionality natively or not.

Storage virtualization can reduce capital investment by extending the life of existing assets, simplify storage management, maximize storage utilization and lower operating costs. Thanks to its IBM Spectrum Virtualize foundation, Storwize V7000F offers a rich set of storage features such as data reduction pools, cloud connectivity, dynamic tiering and data copy services.

IBM Spectrum Virtualize three-site replication capability runs data copies at both metro and global distances to offer a variety of recovery point and time options.

Multiple cost advantages

Storwize V7000F leverages the performance and cost advantages of a category of flash drives that provide much higher storage density than previous solutions. To further reduce storage capacity requirements and costs, Storwize V7000F utilizes data reduction pools technology. When applied to new or existing storage, they can significantly increase usable capacity while maintaining consistent application performance. This can help eliminate or drastically reduce costs for storage acquisition, rack space, power, and cooling, and can extend the useful life of existing storage assets. Capabilities include:

- Block deduplication that works across all of the storage in a data reduction pool to minimize the number of identical blocks

- Compression technology that provides consistent performance across application workload patterns

- SCSI UNMAP support that deallocates physical storage when operating systems delete logical storage constructs such as files in a file system

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Enterprise-grade security and availability

Storwize V7000F also provides enterprise-grade system availability and data security, "five nines" availability, data-at-rest encryption and distributed RAID technology that can reduce drive rebuild times up to 10 times over current RAID solutions.[1] IBM HyperSwap technology enables a single Storwize V7000F system to support servers in multiple data centers. When combined with server data mobility functions such as VMware vMotion or IBM PowerVM Live Partition Mobility, IBM HyperSwap enables nondisruptive storage and virtual machine mobility between data centers up to 300 km (186 miles) apart.

Easy management

Storwize V7000F is designed to be easy to use from the very start. The innovative user interface enables administrators to perform configuration, management and service tasks in a consistent manner over multiple storage systems—even from different vendors—vastly simplifying management and helping reduce the risk of errors. IBM Spectrum Control, a member of the industry-leading IBM Spectrum Storage family of solutions, can provide organizations with an end-to-end view of storage health, long-term performance analytics and capacity statistics for Storwize V7000F and the surrounding storage infrastructure.

Gain storage visibility, insight, and control

IBM Storage Insights and Storage Insights Pro provide critical system analysis and optimization capabilities that enhance your Storwize experience, such as:

- 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. IBM Storage Insights Pro is an upgrade that provides more detailed information and additional capabilities.

Cloud capabilities

IBM Spectrum Virtualize for Public Cloud functionality enables replication of heterogeneous storage between on-premises data centers and the IBM Cloud. It provides the ability to use the IBM Cloud for setting up a disaster-recovery target or for workload migration between on-premises and IBM Cloud.

With its virtualized storage design and tight affinity with PowerVM, OpenStack, Microsoft Hyper-V, VMware vSphere v6 and VMware vSphere Virtual Volumes, Kubernetes, and Docker containers, Storwize V7000F makes an ideal complement for virtualized servers at the heart of cloud deployments.

World-class support

Storwize family solutions now offer three new customer support and product upgrade programs:

- The IBM Data Reduction Guarantee helps reduce planning risks and lower storage costs with baseline levels of data compression effectiveness in IBM Spectrum Virtualize-based offerings.

- The IBM Controller Upgrade Program enables customers of designated all-flash IBM storage systems to reduce costs while maintaining leading-edge controller technology for essentially the cost of ongoing system maintenance.

- The IBM High-Availability Guarantee helps enterprises avoid the costs and risks related to business downtime by ensuring the availability of business-critical data and storage systems.

[1] IBM lab measurements – April 2012.

IBM Storwize V7000F at a glance

Host interface	• 1 Gbps iSCSI and optional 16 Gbps Fibre Channel with NVMe-oF support • 25Gbit/s Ethernet, 32 Gbps Fibre Channel (FC-NVMe) • 25 Gbps iSCSI, or 10 Gbps iSCSI/Fibre Channel over Ethernet (FCoE)
User interface	Graphical user interface (GUI)
Supported drives	2.5-inch flash drives • 400 GB, 800 GB, 1.6 TB, 1.92 TB, 3.2 TB, 3.84 TB, 7.68 TB and 15.36 TB • 30.72 TB SSDs
RAID levels RAID	0, 1, 5, 6, 10, Distributed
Maximum drives supported	760 per system; 3,040 per clustered system
Fans and power supplies	Fully redundant, hot-swappable
Rack support	Standard 19-inch
Management software	IBM Spectrum Virtualize software
Cache per control enclosure/clustered system	128 or 256 GB/up to 1,024 GB clustered
Advanced features included with each system	• Virtualization of internal storage, • Thin provisioning, deduplication • Data migration
Additional available advanced features	• Remote mirroring • Compression • External virtualization • Encryption • IBM Easy Tier
Replication services	• IBM FlashCopy • IBM Spectrum Protect Snapshot ○ Metro Mirror (synchronous) and Global Mirror (asynchronous)
Supported systems	For a list of currently supported servers, operating systems, host bus adapters, clustering applications and SAN switches and directors, refer to the IBM System Storage Interoperation Center: https://www.ibm.com/systems/support/storage/ssic/interoperability.wss
Independent software vendor (ISV) solutions	For a list of high-quality solutions with our partner ISVs, including access to solution briefs and white papers, refer to the ISV Solutions Resource Library: https://www.ibm.com/partnerworld/wps/pub/systems/whyibm/programs

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Why IBM?

The Storwize family of products from IBM is known for providing cost-efficient, highly functional, high-performance storage for any type of workload. Storwize solutions, customized for small, midsized and large organizations, are specifically designed to deliver performance in streamlined packages that are easy to buy, deploy and manage.

For more information

To learn more about Storwize V7000F, contact your IBM representative or IBM Business Partner, or visit: **ibm.com**/us-en/marketplace/storwize-v7000f

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