

IBM System Storage SAN Volume Controller



Helping organizations speed their journey to on demand computing

The real-time exchange of ideas, insights, and experiences is critical to your goal of becoming an on demand business. Building upon transactional processing, today's new technologies are enabling collaborative processing—going from point-to-point to multidirectional interactions in a more open, shared and dynamic way. But in order to take advantage of collaborative processing, businesses need to improve their underlying infrastructure.

Highlights

- **Designed to combine storage capacity from multiple vendors into a single reservoir of capacity that can be managed from a central point**
- **Designed to support improved application availability by insulating host applications from changes to the physical storage infrastructure**
- **Designed to help increase storage utilization by providing host applications with more flexible access to capacity**
- **Designed to enable a tiered storage environment in which the cost of storage can be better matched to the value of data**
- **Designed to help improve productivity of storage administrators by enabling management of combined storage volumes from a single interface**
- **Designed to support advanced copy services from higher- to lower-cost devices and across subsystems from multiple vendors**

The IBM Systems agenda for on demand businesses—accelerating collaborative processing

The IBM Systems Agenda for On Demand Business includes a strategy for delivering systems that accelerates the move toward collaborative processing while continuing to provide world-class levels of transaction processing. Virtualization is at the core of that strategy, which is based on three imperatives: *virtualize everything*, *commit to openness*, and *collaborate to innovate*.

Virtualization is a hot topic and a new frontier in technology, with major technology companies and smaller and start-up ones rushing to stake their claims. IBM is in the lead. A longtime champion of virtualization, IBM has been delivering industry-leading resource virtualization products for more than 30 years. The benefits are far reaching, ranging from increased server utilization and business flexibility, to lower total costs of computing and improved reliability. Depending on the starting point and the type and extent of the virtualization implemented, clients can achieve some or many of these benefits quickly.

The IBM System Storage™ SAN Volume Controller (SVC) enables a single point of control for disparate, heterogeneous storage resources to support business application availability and utility. It's about identifying all resources in your IT infrastructure and making sure they're utilized to the maximum advantage of your business—and doing it quickly, efficiently, in real time, and with minimal administrative cost.

A simpler storage infrastructure

SAN Volume Controller is designed to pool storage volumes from IBM and non-IBM devices into a single reservoir of capacity for centralized management, enabling you to set business process goals based on all the IT resources at your disposal rather than vice versa where the IT resources dictate what your business can accomplish.

SAN Volume Controller combines hardware and software into a comprehensive, modular appliance. Using IBM eServer™ System x™ server technology in highly reliable clustered pairs, SAN Volume Controller is designed to avoid single points of failure. SAN Volume Controller software is a highly available cluster optimized for performance and ease of use.

Increase utilization

SAN Volume Controller is designed to help increase the amount of storage capacity that is available to host applications. By pooling the capacity from multiple disk arrays within the storage area network (SAN), it helps enable host applications to access capacity beyond their island of SAN storage.

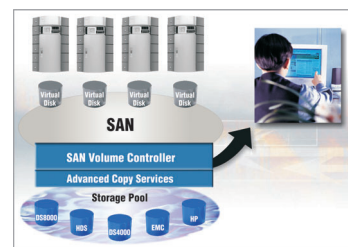


Figure 1. SVC helps combine capacity from different storage systems, helps provide common copy functions and enable data movement without server disruption, and is designed to support management of diverse storage from a single point.

SAN Volume Controller is highly scalable. An I/O group is formed by combining a pair of high-performance, redundant Intel® processor-based servers. Each server includes a 4 Gbps-capable host bus adapter (HBA), designed to allow the SAN Volume Controller to connect and operate at up to 4 Gbps SAN fabric speed. Each I/O group contains 8GB of mirrored cache memory. Highly available I/O groups are the basic configuration of a cluster, as shown in Figure 1. Adding another I/O group can help increase cluster performance and bandwidth.

At its base level, SAN Volume Controller contains a single I/O group. SAN Volume Controller can scale out to support four I/O groups, and it can scale up to support 1024 host servers. For every cluster, SAN Volume Controller supports up to 4096 virtual disks.

Improve productivity

SAN Volume Controller is designed to help improve administrator productivity by enabling management at the cluster level, and it is designed to provide a single point-of-control over all the storage it manages.

SAN Volume Controller provides a comprehensive, easy-to-use graphical interface for central management. This simple interface incorporates the Storage Management Initiative Specification (SMIS) application programming interface (API) and further demonstrates the IBM commitment to open standards. With this single interface, administrators can perform configuration, management and service tasks over storage volumes from disparate storage controllers. SAN Volume

Controller is designed to allow administrators to map disk storage volumes to virtual pooled volumes to help organizations use their existing storage more efficiently.

Link infrastructure performance to business goals

By pooling storage into a single reservoir, SAN Volume Controller is designed to help insulate host applications from physical changes to the storage pool. This helps enable applications to continue to run without disruption, in turn, helping your business increase its availability to its customers.

SAN Volume Controller helps simplify the storage infrastructure by including a dynamic data-migration function. This function is designed to migrate storage from one device to another, without taking it offline. This helps administrators to reallocate and scale storage capacity without disrupting applications, helping to increase the availability of their applications to their customers.

SAN Volume Controller enables businesses to build an infrastructure from existing assets that is simpler to manage, easier to provision and can be changed without impacting application availability. Businesses can use their assets more efficiently and actually measure the improvements. They can allocate and provision storage to applications from a single view and know the affect on their overall capacity situation instantaneously. And they can quantify improvements to their application availability to enable better quality of service goals. These benefits help businesses manage their costs and capabilities more closely, linking the performance of their infrastructure to their individual business goals.

Tiered storage

In most IT environments, inactive data makes up the bulk of stored data. SAN Volume Controller is designed to help administrators control storage growth more effectively by moving low-activity or inactive data into a hierarchy of lower-cost storage. And administrators can free disk space on higher-value

storage for more-important, active data. SAN Volume Controller is designed to enable you to match the cost of your storage to the value of your data.

Copy services

With many conventional SAN disk arrays, copy operations are limited to in-box or like-box-to-like-box circumstances. But SAN Volume Controller is designed to enable administrators to apply a single set of advanced copy services, such as the IBM System Storage FlashCopy® service across multiple storage subsystems from different vendors. This ability can help simplify the storage environment and reduce the total cost of storage.

With this latest software release, SAN Volume Controller now supports remote mirroring of data volumes at both “metropolitan” and “global” distances. This capability provides organizations more flexibility and choice to create solutions that meet their unique requirements for disaster recovery capabilities.

Technology for an on demand environment

Businesses are facing growing, critical-application data supported by complex heterogeneous storage environments, while their staffs are overburdened. SAN Volume Controller is one of many offerings in our System Storage portfolio that are essential for an on demand storage environment. These offerings

can help you simplify your IT infrastructure, manage information throughout its life cycle and maintain business continuity.

IBM services

IBM offers services to help speed implementation and improve return on investment (ROI). IBM storage specialists are available to conduct storage solution and infrastructure reviews to prepare and speed installation. And IBM Global Services can examine your infrastructure to help determine sizing and performance needs. In addition, you can choose from a range of service and subscription offerings designed to help keep your infrastructure up-to-date and running smoothly.

IBM System Storage SAN Volume Controller supported environments at a glance

Storage systems support

- Specific models of the IBM TotalStorage® Enterprise Storage Server® (ESS), the IBM System Storage DS series storage systems (Fibre-Channel and SATA disks) and the IBM System Storage N series storage systems
- EMC Symmetrix DMX and 8000 series models
- EMC CLARiiON, CX200, CX300, CX400, CX500, CX600, CX700 and FC4700
- Hitachi Data System 9200, 9530V, 9570V, 9580V, 9910, 9960, 9970V and 9980V, TagmaStore USP and NSC55
- Sun StorEdge 9910, 9960, 9970 and 9980 systems
- Hewlett Packard EVA3000, EVA5000, EVA4000, EVA6000, EVA8000, EMA12000, EMA16000, MA8000, XP48, XP128, XP512, XP1024
- Network Appliance FAS3020 and FAS3050

Host multipathing software

- IBM System Storage Multipath Subsystem Device Driver (SDD)
- Symantec/Veritas Volume Manager 3.5 MP3, 4.0
- PVLinks for HP-UX
- Native Netware multipathing driver for Netware
- Native VMWare multipathing driver for VMWare ESX 2.5
- Native multipathing driver for OpenVMS 7.3
- RDAC multipathing software for certain DS4000 environments

Operating system support

- Microsoft® Windows® 2000 with SP3, MSCS
- Windows 2003 Standard Edition, 2003 Enterprise Edition w SP1, 2003 Enterprise x64 Edition
- Multipathing I/O (MPIO), Volume Shadow Copy Services (VSS), and Geographically Dispersed Sites (GDS) for Windows 2003 hosts
- Novell NetWare V6.5 SP4, with clustering
- Sun Solaris 8, 9 & 10 operating environment (64-bit only) with Sun Cluster 3.1, Veritas Cluster Server 3.5, Veritas VxVM and Veritas DMP 4.0
- VMware ESX 2.1 (single-path mode) and ESX 2.5 (multi-path mode) in selected environments
- IBM AIX® V5.1, 5.2 (including IBM eServer BladeCenter® J520 server), 5.3, IBM HACMP™ and HACMP/XD
- HP-UX V11.i & V11.i V2 with clustering using HP ServiceGuard 11.16 & HP-UX 11.0
- HP Tru64 Ver 5.1A & 5.1B
- HP OpenVMS 7.3
- Red Hat Enterprise Linux®, Advanced Server 2.1, 3.0
- Red Hat Enterprise Linux, Advanced Server 4.0 on x86, AMD Opteron, Intel® Xeon®-based systems, and IBM System p™
- SUSE Linux Enterprise Server 8 with select IBM System p, System x, System z™, eServer xSeries®, pSeries®, zSeries® and BladeCenter servers
- SUSE Linux Enterprise Server 9 with select IBM System x, System z, eServer xSeries, zSeries and BladeCenter servers, with SAN Boot

Support for SAN switches—selected models from the following suppliers

- Brocade
 - McDATA
 - Cisco
 - CNT
-

IBM System Storage SAN Volume Controller supported environments at a glance

Additional support capabilities

- IBM eServer BladeCenter—additional interoperability for hosts running Windows 2000 or Red Hat Linux AS 3.0, or both, and using the Integrated Brocade Switch to connect to a Brocade-switched fabric

Service

- Customer engineer (CE) installation
- Hardware warranty, one year parts and labor
- Software warranty, one year
- Software upgrades and fix packs available through Web download, nondisruptively

IBM Global Services storage services

- Consult and design
 - Backup and continuity planning
 - Performance utilization and capacity planning
- Integrate and deploy
 - Installation, cabling and site preparation
 - Migration and consolidation
 - Education and training
- Operate and manage
 - System support and maintenance

For the complete and latest support information, visit

ibm.com/storage/support/2145

For more information

Contact your IBM representative or
IBM Business Partner or visit

[ibm.com/storage/software/
virtualization](http://ibm.com/storage/software/virtualization)



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