



IBM Storwize V7000 Version 6.2 delivers support for VMware VAAI, real-time performance monitoring, and 10 Gigabit iSCSI connectivity

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At a glance

The IBM® Storwize V7000 disk system utilizes IBM System Storage® SAN Volume Controller (SVC) technology to deliver high performance, advanced function, high availability, and modular and scalable storage capacity:

- Supports RAID 0, 1, 5, 6, and 10
- Provides SAN-attached 8 Gbps Fibre Channel (FC) host connectivity, and 1 Gigabit Ethernet (GbE) and 10 GbE iSCSI host connectivity
- Accommodates up to twenty-four 2.5-inch disk drives or twelve 3.5-inch disk drives installed within the IBM Storwize V7000 Control Enclosure, with attachment support for up to nine IBM Storwize V7000 Expansion Enclosures, providing modular and highly scalable storage solutions that range up to 240 TB physical storage capacity, and 480 TB physical storage capacity in a clustered system
- Supports intermixing of SAS drives, Nearline SAS drives, and solid-state drives within the IBM Storwize V7000 Control Enclosures and the IBM Storwize V7000 Expansion Enclosures
- Includes IBM Easy Tier technology for automatically moving heavily used data extents onto high-performance storage devices
- Supports attachment of other storage devices via the FC interface just as the SVC
- Supports a complete set of SVC functions, including FlashCopy®, RemoteCopy, Volume Mirroring, and thin provisioning

Overview

IBM Storwize V7000 V6.2.0 delivers improved tracking with the introduction of real-time performance monitoring. Immediate performance information can be received, including CPU utilization and I/O rates, to monitor environmental changes, troubleshoot, and when pairing up the information with historical detailed data from Tivoli® Storage Productivity Center, can be better positioned to develop the best performance solutions.

VMware virtual environments can be improved with Storwize V7000 by using the vStorage API for Array Integration (VAAI). This new API delegates certain VMware functions to the Storwize V7000 for enhanced performance. In the vSphere 4.1 release, this offload capability to Storwize V7000 supports full copy, block zeroing, and hardware-assisted locking. The introduction of 10 GbE hardware for the Storwize V7000 allows continued focus on cost efficiency with higher network performance by offering 10 Gigabit iSCSI host attachment. The Storwize V7000

also provides up to twice the capacity and twice the throughput to support business growth by providing clustered systems that include up to two Storwize V7000 control enclosures. With external storage virtualization, the Storwize V7000 is scalable to manage up to 32 PB of storage by allowing managed disks to be as large as 256 TB on select storage systems.

Storwize V7000 interoperability now supports managing additional storage products, including HP StorageWorks P9500 Disk Array, Hitachi Data Systems Virtual Storage Platform, Texas Memory Systems RamSan-620, and EMC VNX models.

Key prerequisites

Software requirements

IBM Storwize V7000 Software V6.2 (5639-VM1, 5639-EV1, and 5639-RM1) has the same software prerequisites as IBM Storwize V7000 V6.1. Refer to the [Description](#) section and the announcement letters listed in the [Reference information](#) section for more information.

Hardware requirements

This program requires at least one IBM Storwize V7000 control enclosure (2076-112, 2076-124, 2076-312, or 2076-324) for installation. Current support summaries, including specific software, hardware, and firmware levels supported, are maintained at the IBM Storwize V7000 Support website

<http://www.ibm.com/storage/support/storwize/v7000>

For information on the IBM Storwize V7000 hardware, see the announcements listed in the [Reference information](#) section.

Planned availability date

- June 10, 2011: IBM Storwize V7000 Software V6.2.0 AAS new order shipments begin
- June 30, 2011: Availability of the Plug-In for VMware vCenter

Description

IBM Storwize V7000 V6.2 highlights include support for real-time performance monitoring, VMware VAAI, and 10 Gigabit iSCSI connectivity. The following functions, features, and support options help maximize the benefits of Storwize V7000.

Real-time performance monitoring

IBM Storwize V7000 V6.2.0 provides improved tracking by introducing real-time performance monitoring. Real-time performance monitoring gathers the following system level performance statistics:

- CPU utilization
- Port utilization and I/O rates
- Volume and MDisk I/O rates
- Bandwidth
- Latency

Real-time performance monitoring can immediately track environmental changes and for performance troubleshooting. The sampling rate can be set as low as five seconds. Historical data is kept for about five minutes, therefore Tivoli Storage Productivity Center can capture more detailed performance information and

to analyze trends in order to get a complete picture when developing the best performance solutions.

VMware vStorage API for Array Integration (VAAI)

VMware virtual environments can be improved with Storwize V7000 by using VAAI. This new API delegates certain VMware functions to Storwize V7000 to enhance performance. In the vSphere 4.1 release, this offload capability to Storwize V7000 supports:

- Full copy: Enables the Storwize V7000 to make full copies of data without requiring the ESX server to read and write the data
- Block zeroing: Enables Storwize V7000 to zero out large numbers of blocks, shortening the time needed to provision virtual machines
- Hardware-assisted locking: Improves the scalability of large ESX server farms sharing volumes on the Storwize V7000 by providing an alternate means to protect the metadata for VMFS cluster-file systems

Plug-In for VMware vCenter

The Storwize V7000 Plug-In for VMware vCenter allows VMware administrators to monitor and manage Storwize V7000 volumes from the VMware software. This plug-in enables a common set of Storwize V7000 tasks to be performed from VMware vCenter without needing to switch between user interfaces. This plug-in will initially be certified for use with Storwize V7000 V6.1.

10 Gigabit iSCSI

The new 10 Gigabit Ethernet hardware for the Storwize V7000 have the ability to attach hosts to the Storwize V7000 using 10 Gigabit iSCSI.

Clustered systems

Storwize V7000 now allows clustered systems with up to two Storwize V7000 control enclosures. Each control enclosure in a clustered system has the advantage of processing unique host system I/O workloads while configuration and management of the storage is performed at the system level. This provides up to twice the capacity and twice the throughput to support business growth, and it enables more consolidation, including external virtualized storage, for greater efficiency.

256 TB managed disks and 32 PB managed storage

Storwize V7000 now allows virtualization of managed disks up to 256 TB in capacity for select storage systems, improved from 2 TB. With the use of 8 GB extent sizes, one Storwize V7000 system can now effectively manage up to 32 PB of storage, up from the 8 PB maximum. For a list of the storage systems supporting managed disks up to 256 TB, visit

<http://www.ibm.com/storage/support/2145>

FlashCopy target as Remote Copy source

Using a FlashCopy target volume as the source volume in a remote copy relationship is now available in SVC V6.2. This complements the current capability for remote copy target volumes to be source volumes in a FlashCopy relationship, and allows administrators greater flexibility in setting up disaster recovery configurations.

Revised licensing rules for Remote Mirroring Software (5639-RM1)

Rather than purchasing a license for IBM Storwize V7000 Remote Mirroring Software (5639-RM1) for every licensed enclosure (internal and external) managed by the IBM Storwize V7000 Disk System at both the primary and the secondary systems as first released, some customers will benefit from the following modifications to the 5639-RM1 licensing rules:

- For primary and secondary systems with differing numbers of enclosures using Remote Mirroring, the number of 5639-RM1 licenses needed for each system is the number of enclosures on the smaller of the two systems (see scenarios 1 and 2 below)
- When multiple production systems replicate to a single disaster recovery system, the number of 5639-RM1 licenses at the disaster recover system must equal the sum of the 5639-RM1 licenses at the production systems (see scenario 3 below)

The following are examples of how to license Remote Mirroring Software (5639-RM1) under the modified licensing rules:

Scenario 1: The primary system is a four-enclosure Storwize V7000 with nothing externally virtualized, therefore it has four 5639-VM1 licenses. The secondary system is a two-enclosure Storwize V7000 with nothing externally virtualized, therefore it has two 5639-VM1 licenses. The Storwize V7000 Remote Mirroring licensing would be as follows: two 5639-RM1 licenses for the primary system plus two 5639-RM1 licenses for the secondary system, for a total of four 5639-RM1 licenses required.

Scenario 2: The primary system is a one-enclosure Storwize V7000 managing a DS5020 consisting of three enclosures, therefore it has one 5639-VM1 license plus three 5639-EV1 licenses. The secondary system is a three-enclosure Storwize V7000 with nothing externally virtualized, therefore it has three 5639-VM1 licenses. The Storwize V7000 Remote Mirroring licensing would be as follows: three 5639-RM1 licenses for the primary system plus three 5639-RM1 licenses for the secondary system, for a total of six 5639-RM1 licenses required.

Scenario 3: There are three primary systems replicating to a central disaster recovery system. The three primary systems are as follows:

- A two-enclosure Storwize V7000 with nothing externally virtualized, therefore it has two 5639-VM1 licenses
- A one-enclosure Storwize V7000 managing a DS5020 consisting of three enclosures, therefore it has one 5639-VM1 license plus three 5639-EV1 licenses
- A one-enclosure Storwize V7000 with nothing externally virtualized, therefore it has one 5639-VM1 license.

The central disaster recovery system is a nine-enclosure Storwize V7000 with nothing externally virtualized, therefore it has nine 5639-VM1 licenses. The Storwize V7000 Remote Mirroring licensing would be as follows: a sum of seven 5639-RM1 licenses for the primary systems plus seven 5639-RM1 licenses for the central disaster recovery system, for a total of fourteen 5639-RM1 licenses required.

Added Interoperability

Storwize V7000 now supports many more heterogeneous data center environments with the addition of interoperability support for:

- EMC VNX models
- HP StorageWorks P9500 Disk Array
- Hitachi Data Systems Virtual Storage Platform
- Texas Memory Systems RamSan-620

For all the specific models and host environments supported, visit

<http://www.ibm.com/storage/support/storwize/V7000>

ISV Solutions

In support of the Storwize V7000 V6.2 release, a number of Storwize V7000 solutions have been tested and documented which leverage applications of major Independent Software Vendors (ISVs) including Microsoft®, VMware, Oracle, Symantec, and SAP. Key applications that are featured as part of this announcement include, but are not limited to VMware View 4.5 Reference Architecture, vSphere

Virtualized Solution, vStorage API for Array Integration (VAAI) features/benefits, Microsoft Exchange Solution Reviewed Program (ESRP) with up to 32K and 60K Mailboxes/Users, Oracle Database with Global Mirroring, and Symantec NetBackup.

In addition to the certifications and solutions indicated, IBM performs certifications with ISVs aligned with the various vertical industries including Healthcare, Financial Services, and Telco. Additional certifications and solutions are updated regularly. Please refer to the latest ISV white papers at:

<http://www.ibm.com/systems/storage/solutions/isv/index.html>

Auto renewal registration of software maintenance for Storwize V7000 5639-VM1 (Feature number 9000)

Software maintenance renewals in the AAS ordering system for Storwize V7000 5639-VM1 software are now available via a services contract. Selecting feature number 9000 with the software maintenance registration ordered with 5639-VM1 indicates that the customer wishes to continue their software maintenance on a services contract at the end of the initial software maintenance term. Feature number 9000 is available on the following Storwize V7000 base software maintenance registration product IDs:

- 5639-SM1 - 1 Year Software Maintenance Registration
- 5639-SM6 - 2 Year Software Maintenance Registration
- 5639-SM3 - 3 Year Software Maintenance Registration
- 5639-SM7 - 4 Year Software Maintenance Registration
- 5639-SM8 - 5 Year Software Maintenance Registration

Note: Auto renewal services are not available in all countries or for all initial software maintenance contract terms. Refer to the services announcement found in the [Reference information](#) section for more details.

45-Day migration allowance

With the benefit of external virtualization, the Storwize V7000 allows customers to bring a system into their storage environment and very quickly and easily migrate data from existing storage systems to the Storwize V7000. In order to facilitate this migration, IBM allows customers 45 days from the date of purchase of the Storwize V7000 system to use the external virtualization function for the purpose of migrating data from an existing storage system to the Storwize V7000 system. Any use thereafter, and ongoing use of the external virtualization function of Storwize V7000, requires the purchase of a Storwize V7000 External Virtualization license (5639-EV1) at a quantity equal to the capacity managed under the Storwize V7000 system. Migrations performed at later points in time that are to completely replace other storage systems with the Storwize V7000, thereby requiring temporary virtualization of that external storage system to perform that replacement activity, are granted a 45-day period for use of external virtualization without having to purchase a license to complete such a migration effort. Customers must make their sales representative aware of their intent and when they will be starting this migration so that an end date can be tracked. It is the customer's responsibility to ensure that they are properly licensed for all external storage managed by Storwize V7000 after those 45 days.

Reference information

For information on Storwize V7000 hardware machine type 2076, refer to Hardware Announcement [AG11-0090](#), dated May 09, 2011, and Hardware Announcement [AG10-0229](#), dated October 07, 2010.

For information on System Storage Productivity Center, refer to Hardware Announcement [AG10-0266](#), dated November 23, 2010.

For information on the previous IBM Storwize V7000 Software V6.1.0, refer to Software Announcement [AP10-0332](#), dated October 07, 2010.

For information on the software maintenance auto renewal registration services offering, refer to Services Announcement [AS11-0010](#), dated April 05, 2011.

Availability of national languages

Planned and supported geography translations will be available for web download by June 24, 2011, at

<http://www.ibm.com/storage/support/storwize/v7000>

Program number

Program number	VRM	Program name
5639-VM1	6.2.0	IBM Storwize V7000 Software V6
5639-EV1	6.2.0	IBM Storwize V7000 External Virtualization Software V6
5639-RM1	6.2.0	IBM Storwize V7000 Remote Mirroring Software V6

Product identification number

PID numbers for IBM Storwize V7000 Software V6 are:

Program PID number	Maintenance 1 year PID number	Maintenance 3 year PID number
5639-VM1	5639-SM1 reg/ren 5639-SM2 af1	5639-SM3 reg 5639-SM4 renewal 5639-SM5 af1
Maintenance 2 year PID number	Maintenance 4 year PID number	Maintenance 5 year PID number
5639-SM6 reg	5639-SM7 reg	5639-SM8 reg

PID numbers for IBM Storwize V7000 External Virtualization Software V6:

Program PID number	Maintenance 1 year PID number	Maintenance 3 year PID number
5639-EV1	5639-VVA reg	5639-VVC reg
Maintenance 2 year PID number	Maintenance 4 year PID number	Maintenance 5 year PID number
5639-VVF reg	5639-VVG reg	5639-VVH reg

PID numbers for IBM Storwize V7000 Remote Mirroring Software V6:

Program PID number	Maintenance 1 year PID number	Maintenance 3 year PID number
5639-RM1	5639-MMA reg	5639-MMC reg
Maintenance 2 year PID number	Maintenance 4 year PID number	Maintenance 5 year PID number

Publications

The following publications can be downloaded in PDF format from the websites that follow this list:

Title	Order number
IBM Storwize V7000 CIM Agent Developer's Guide	GC27-2292-01
IBM Storwize V7000 Read First	GC27-2293-00
IBM Storwize V7000 Quick Installation Guide	GC27-2290-01
IBM Storwize V7000 Troubleshooting, Recovery, and Maintenance Guide	GC27-2291-01
IBM System Storage SAN Volume Controller and Storwize V7000 Command-Line Interface User's Guide	GC27-2287-01
IBM System Storage Multipath Subsystem Device Driver User's Guide	GC52-1309
IBM Storwize V7000 Safety Notices	GC27-3924-00

Additional copies of the above listed publications will be available on June 10, 2011.

Use the following options to order or download additional copies:

- To view online information and link to a download site, visit the IBM Storwize V7000 Information Center
<http://publib.boulder.ibm.com/infocenter/storwize/ic/index.jsp>
- To order additional selected hardcopy publications for a fee or download free PDF format publications, visit the IBM Publications Center website
<http://www.ibm.com/shop/publications/order>
- To directly download publications in PDF format, visit the IBM product support website
<http://www.ibm.com/storage/support/storwize/v7000>
- Contact your IBM representative.

The IBM Publications Center

Hardcopies of selected IBM Storwize V7000 publications are available for a fee from the IBM Publications Center, as well as free softcopy publications. The Publications Center is a worldwide central repository for IBM product publications and marketing material with a catalog of 70,000 items. Extensive search facilities are provided. Payment options for orders are via credit card or customer number. A large number of publications are available online in various file formats, and they can all be downloaded free of charge.

Publications may also be obtained on DVD via use of media feature 5809 (on 5639-VM1).

- IBM Storwize V7000 Customer Documentation DVD, SK5T-8813-01

Ordering information

Charge metric

Program name	Part number or PID number	Charge metric
IBM Storwize V7000 Base Software V6	5639-VM1	Per Storage Device
IBM Storwize V7000 External Virtualization Software V6	5639-EV1	Per Storage Device
IBM Storwize V7000 Remote Mirroring Software V6	5639-RM1	Per Storage Device

Product group: IBM Systems and Technology Group, System Storage Division

Product Identifier Description	(PID)
IBM Storwize V7000 Base Software V6 per Storage Device	5639-VM1
IBM Storwize V7000 External Virtualization Software V6 per Storage Device	5639-EV1
IBM Storwize V7000 Remote Mirroring Software V6 per Storage Device	5639-RM1

Software Maintenance

Program name: IBM Storwize V7000
Base
Software Maintenance

One-year Registration and Renewal

PID: 5639-SM1

One-year No Charge Registration:

Description	Program number	Feature number
SWMA Auto Renewal Registration	5639-SM1	9000

Program name: IBM Storwize V7000
Base
Software Maintenance

Three-year Registration

PID: 5639-SM3

Description	Program number	Feature number
SWMA Auto Renewal Registration	5639-SM3	9000

Program name: IBM Storwize V7000
Base
Software Maintenance

Two-year Registration

PID: 5639-SM6

Description	Program number	Feature number
SWMA Auto Renewal Registration	5639-SM6	9000

Program name: IBM Storwize V7000
Base
Software Maintenance

Four-year Registration

PID: 5639-SM7

Description	Program number	Feature number
SWMA Auto Renewal Registration	5639-SM7	9000

Program name: IBM Storwize V7000
Base
Software Maintenance

Five-year Registration

PID: 5639-SM8

Description	Program number	Feature number
SWMA Auto Renewal Registration	5639-SM8	9000

Terms and conditions

The information provided in this announcement letter is for reference and convenience purposes only. The terms and conditions that govern any transaction with IBM are contained in the applicable contract documents such as the IBM International Program License Agreement, IBM International Passport Advantage® Agreement, and the IBM Agreement for Acquisition of Software Maintenance.

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This software license includes Software Subscription and Support (also referred to as Software Maintenance).

Agreement for Acquisition of Software Maintenance

The IBM Agreement for Acquisition of Software Maintenance (Z125-6011) agreement applies for Subscription and Support (also referred to as Software Maintenance) and does not require customer signatures.

License Information form number

LC23-5059 License Information for IBM System Storage SAN Volume Controller 6.2.0 and IBM Storwize V7000 6.2.0

LC23-5098 License information for IBM System Storage SAN Volume Controller and IBM Storwize V7000 Information Center 6.2.0

On or near the planned availability date, the current License Information documents will be available for review on the IBM Software License Agreement website

<http://www.ibm.com/software/sla/sladb.nsf>

Limited warranty applies

Yes

Limited warranty

IBM warrants that when the program is used in the specified operating environment, it will conform to its specifications. The warranty applies only to the unmodified portion of the program. IBM does not warrant uninterrupted or error-free operation of the program or that IBM will correct all program defects. You are responsible for the results obtained from the use of the program.

IBM provides you with access to IBM databases containing information on known program defects, defect corrections, restrictions, and bypasses at no additional charge. For further information, consult the IBM Software Support Handbook found at

<http://www.ibm.com/support/handbook>

IBM will maintain this information for at least one year after the original licensee acquires the program (warranty period).

Money-back guarantee

If for any reason you are dissatisfied with the program and you are the original licensee, you may obtain a refund of the amount you paid for it, if within 30 days of your invoice date you return the program and its PoE to the party from whom you obtained it. If you downloaded the program, you may contact the party from whom you acquired it for instructions on how to obtain the refund.

For clarification, note that for programs acquired under any of IBM's On/Off Capacity on Demand (On/Off CoD) software offerings, this term does not apply since these offerings apply to programs already acquired and in use by you.

Other terms

Volume orders (IVO)

Yes. Contact your IBM representative.

Passport Advantage applies

No

Software Subscription and Support (Software Maintenance) applies

Yes. All distributed software licenses include Software Subscription and Support (also referred to as Software Maintenance) for a period of 12 months from the date of acquisition, providing a streamlined way to acquire IBM software and assure technical support coverage for all licenses. Extending coverage for a total of three years from date of acquisition may be elected.

While your Software Subscription and Support (Software Maintenance) is in effect, IBM provides you assistance for your routine, short duration installation and usage (how-to) questions, and code-related questions. IBM provides assistance via telephone and, if available, electronic access, only to your information systems (IS) technical support personnel during the normal business hours (published prime shift hours) of your IBM support center. (This assistance is not available to your end users.) IBM provides Severity 1 assistance 24 hours a day, every day of the year. For additional details, consult your IBM Software Support Handbook at

<http://www.ibm.com/support/handbook>

Software Subscription and Support (Software Maintenance) does not include assistance for the design and development of applications, your use of programs in other than their specified operating environment, or failures caused by products for which IBM is not responsible under this agreement.

For more information about the Passport Advantage Agreement, visit the Passport Advantage website at

<http://www.ibm.com/software/passportadvantage>

System i Software Maintenance applies

No

Variable charges apply

No

Educational allowance available

15% to qualified educational institution customers.

Prices

For all local charges, contact your IBM representative.

Passport Advantage

For Passport Advantage information and charges, contact your IBM representative or authorized IBM Business Partner for Software ValueNet®. Additional information is also available at

<http://www.ibm.com/software/passportadvantage>

AP distribution

Country/region	Announced
AP IOT	
ASEAN*	Yes
India/South Asia**	Yes
Australia	Yes
People's Republic of China	Yes
Hong Kong S.A.R of the PRC	Yes

Macao S.A.R of the PRC	Yes
Taiwan	Yes
Korea	Yes
New Zealand	Yes
Japan IOT	
Japan	Yes

* Brunei Darussalam, Indonesia, Cambodia, Lao People's Democratic Republic, Malaysia, Philippines, Singapore, Thailand, and Vietnam
 **Bangladesh, Bhutan, India, Sri Lanka, Maldives, Nepal, and Afghanistan

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