



# IBM Storwize Family Software V7.2.0 delivers replication over IP networks and improved performance for Real-time Compression

## Table of contents

<a href="#">1 Overview</a>	<a href="#">11 Publications</a>
<a href="#">2 Key prerequisites</a>	<a href="#">12 Technical information</a>
<a href="#">3 Planned availability date</a>	<a href="#">17 Ordering information</a>
<a href="#">3 Description</a>	<a href="#">28 Terms and conditions</a>
<a href="#">6 Product positioning</a>	<a href="#">32 Prices</a>
<a href="#">7 Program number</a>	<a href="#">33 Announcement countries</a>

## At a glance

Are your storage requirements growing too fast? Are the costs of managing this growth taking more and more of your IT budget? IBM® Storwize® Family Software V7.2 can help solve these problems and get you on the road towards a more flexible, responsive, and efficient storage environment. IBM Storwize Family Software capabilities are offered across a variety of platforms including SAN Volume Controller, Storwize V7000 (Unified), Flex System V7000, Storwize V5000, and Storwize V3700 and V3500. The Storwize Family of products are designed to deliver the benefits of storage virtualization and advanced storage capabilities, including FlashCopy® , replication, Real-time Compression™ and Easy Tier® , in environments from large enterprises to small businesses and midmarket companies.

## Overview

IBM Storwize Family Software V7.2 provides software-defined storage capabilities across a variety of platforms including SAN Volume Controller, Storwize V7000 (Unified), Flex System V7000, Storwize V5000, and Storwize V3700 and V3500. These offerings help customers reduce the complexities and cost of managing their storage through:

- Centralizing management of storage volumes, enabling administrators to manage storage volumes from a single point
- Improving utilization of storage capacity with virtual volumes, enabling businesses to tap into previously unused disk capacity
- Avoiding downtime for backups, maintenance, and upgrades
- Performing data migration without disruption to applications
- Enabling all storage devices to be organized into storage pools from which virtual volumes, whether standard, compressed, or thin-provisioned, are created with the desired characteristics
- Delivering automation of storage management with the Virtual Storage Center, Tivoli® Storage Productivity Center (as applicable by platform), and Tivoli Storage FlashCopy Manager (as applicable by platform)
- Increasing the performance efficiency of storage pools that use SSDs with Easy Tier
- Restoring data access quickly with near and remote copy capabilities across Fibre Channel, Fibre Channel over Ethernet (FCoE), and IP networks

IBM Storwize Family Software V7.2 introduces replication over IP networks that is easy to configure in existing IP infrastructures. This is a lower-cost alternative to the Fibre Channel-based and FCoE-based replication, eliminating the need for FCIP routers and dark fibre. By placing the IP replication function in the Storwize Family Software, server CPU and management overhead is freed up, and a single point of replication control is available for all server types. This release also includes SAS migration capability for the Storwize V5000, Storwize V3700, and Storwize V3500.

Enhanced stretched cluster for SAN Volume Controller optimizes inter-site networking and enables planned site failover. Remote mirroring and VMware environments will benefit from support for VMware 5.5 and being a provider for the vSphere API for Storage Awareness (VASA).

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## Key prerequisites

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### **Software requirements**

IBM SAN Volume Controller V7.2 (5641-VC7 and 5641-CP7) has the same software prerequisites as IBM SAN Volume Controller V7.1.

IBM Storwize V7000 V7.2 (5639-VM7, 5639-EV7, 5639-RM7, and 5639-CP7) has the same software prerequisites as IBM Storwize V7000 V7.1.

IBM Flex System™ V7000 V7.2 (5639-NZ7, 5639-EX7, 5639-RE7, and 5639-CM7) has the same software prerequisites as IBM Flex System V7000 V7.1.

IBM Storwize V5000 V7.2 (5639-ST7) has the same software prerequisites as IBM Storwize V5000 V7.1.

Refer to the [Description](#) section and the announcements listed in the [Reference information](#) section for more information.

### **Hardware requirements**

IBM Storwize Family Software for SAN Volume Controller requires at least one pair of IBM System Storage® SAN Volume Controller 2145-CG8, 2145-CF8, 2145-8A4, 2145-8G4, 2145-8F4, or 2145-8F2 storage engines with dual uninterruptible power supplies for installation.

IBM Storwize Family Software for Storwize V7000 requires at least one IBM Storwize V7000 Control Enclosure (2076-112, 2076-124, 2076-312, or 2076-324) for installation.

IBM Storwize Family Software for Flex System V7000 requires at least one IBM Flex System V7000 (4939-A49, 4939-H49, or 4939-X49) Control Enclosure for installation.

IBM Storwize Family Software for Storwize V5000 requires at least one IBM Storwize V5000 control enclosure (2077-12C, 2077-24C, 2078-12C, or 2078-24C) for installation.

Current support summaries, including specific software, hardware, and firmware levels supported, are maintained at the support websites.

- For SAN Volume Controller  
<http://www.ibm.com/storage/support/2145>
- For Storwize V7000  
<http://www.ibm.com/storage/support/storwize/v7000>
- For IBM Flex System V7000  
[http://www.ibm.com/support/entry/portal/downloads/hardware/puresystems/pureflex\\_system/storage\\_node/flex\\_system\\_v7000](http://www.ibm.com/support/entry/portal/downloads/hardware/puresystems/pureflex_system/storage_node/flex_system_v7000)
- For Storwize V5000

- <http://www.ibm.com/storage/support/storwize/v5000>
- For Storwize V3700  
<http://www.ibm.com/storage/support/storwize/v3700>
- For Storwize V3500  
<http://www.ibm.com/storage/support/storwize/v3500>

For information on Storwize Family of products hardware, refer to the announcements listed in the [Reference information](#) section.

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## Planned availability date

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November 29, 2013

Refer to the [Availability of national languages](#) section for national language availability.

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## Description

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IBM Storwize Family Software version 7.2 includes:

- **Remote Mirroring over IP communication links:** The Remote Mirroring function (also referred to as Metro/Global Mirror) is now supported using Ethernet communication links. Storwize Family Software IP replication uses innovative Bridgeworks SANSlide technology to optimize network bandwidth and utilization. This new function enables the use of lower speed and lower cost networking infrastructure for data replication. Bridgeworks' SANSlide technology integrated into IBM Storwize Family Software uses artificial intelligence to help optimize network bandwidth utilization and adapt to changing workload and network conditions. This technology can improve remote mirroring network bandwidth utilization up to three times, which may enable clients to deploy a less costly network infrastructure or speed remote replication cycles to enhance disaster recovery effectiveness.
- **Enhanced Stretched Cluster for SAN Volume Controller:** Prior to this release, stretched cluster configurations did not provide manual failover capability, and data being sent across a long distance link had the potential to be sent twice. The addition of 'site awareness' in Storwize Family Software V7.2 routes I/O traffic between SVC nodes and storage controllers to optimize the data flow, and it polices I/O traffic during a failure condition to allow for a manual cluster invocation to ensure consistency. The use of stretched cluster continues to follow all the same hardware installation guidelines as previously announced and found in the product documentation. Use of enhanced stretched cluster is optional, and existing stretched cluster configurations will continue to be supported.
- **Performance improvements for asynchronous remote mirroring:** Enhancements to the asynchronous remote mirroring function enables improved throughput of remotely replicated data.
- **vSphere API for Storage Awareness (VASA):** Storwize Family Software V7.2 enables users to get more capability out of their VMware environments by being a provider for the vSphere API for Storage Awareness.
- **Data Migration using SAS connectivity on Storwize V3500, V3700, and V5000:** Data migration support is standard on all Storwize V3500, V3700, and V5000 systems and this function can now be performed using SAS connectivity to help you easily and nondisruptively migrate data from IBM System Storage DS3200 and DS3500 systems onto Storwize V3500, V3700, and V5000.

### Revised licensing rules for Storwize V7000 Real-time Compression Software (5639-CP7)

Rather than purchasing a license for Storwize Family Software for Storwize V7000 Real-time Compression (5639-CP7) for every licensed enclosure (internal and

external) managed by the IBM Storwize V7000 Disk system as required when first released, some customers will benefit from the following modifications to the 5639-CP7 licensing rules:

- For any Storwize V7000 system made up of one Storwize V7000 Control enclosure plus more than two other enclosures (whether Storwize V7000 Expansion enclosures or third party external storage enclosures), the maximum number of 5639-CP7 licenses required is three (see scenario 1 below)
- For any Storwize V7000 system made up of multiple Storwize V7000 Control enclosures (in a clustered configuration, for example), the maximum number of 5639-CP7 licenses required is three per Control enclosure (see scenarios 2 and 3 below)

Under this Storwize Family Software V7.2 revision, to authorize use of Real-time Compression capabilities of the IBM Storwize V7000, you must purchase a license for Storwize Family Software for Storwize V7000 Real-time Compression (5639-CP7) for each licensed enclosure managed by the IBM Storwize V7000 Disk System, including each internal enclosure licensed with Storwize Family Software for Storwize V7000 base software (5639-VM7) and each external enclosure licensed with Storwize Family Software for Storwize V7000 External Virtualization (5639-EV7), up to a maximum number of three enclosure licenses for each Storwize V7000 Control enclosure.

This change applies to new software transactions and new software maintenance renewals and reinstatements only. If customers have already purchased a greater quantity of software licenses for Storwize V7000 Real-time Compression (5639-CP7) than required under this change, they should contact their sales representative to adjust the licensing to ensure they renew with the appropriate software maintenance license quantity as part of their next transaction. Some customers will have an automatic renewal of software maintenance applied to their account. It is the customer's responsibility to take advantage of this change in licensing requirements and to remove the automatic renewal (if desired) and to review the renewal statement to ensure any needed change in license quantity is made. This change does not entitle customers to any refunds for software licensing.

The following are examples of how to license Real-time Compression (5639-CP7) under the modified licensing rules:

**Scenario 1:** You have a four-enclosure Storwize V7000 system made up of one control enclosure and three expansion enclosures with nothing externally virtualized, therefore it has four 5639-VM7 licenses. The Storwize Family Software for Storwize V7000 Real-time Compression licensing would be a total of three 5639-CP7 licenses required.

**Scenario 2:** You have a five-enclosure Storwize V7000 system made up of two control enclosures and three expansion enclosures with nothing externally virtualized, therefore it has five 5639-VM7 licenses. The existence of two control enclosures moves the maximum license quantity up to six, therefore the Storwize Family Software for Storwize V7000 Real-time Compression licensing would be a total of five 5639-CP7 licenses required.

**Scenario 3:** You have a five-enclosure Storwize V7000 system made up of two control enclosures and three expansion enclosures, managing a DS5020 consisting of three enclosures, therefore it has five 5639-VM7 licenses and three 5639-EV7 licenses. The existence of two control enclosures moves the maximum license quantity up to six, therefore the Storwize Family Software for Storwize V7000 Real-time Compression licensing would be a total of six 5639-CP7 licenses required, even though the total number of enclosures in the configuration is eight.

### **Revised licensing rules for Flex System V7000 Real-time Compression Software (5639-CM7)**

Rather than purchasing a license for Storwize Family Software for Flex System V7000 Real-time Compression (5639-CM7) for every licensed enclosure (internal and external) managed by the IBM Storwize V7000 Disk system as required when first released, some customers will benefit from the following modifications to the 5639-CM7 licensing rules:

- For any Flex System V7000 system made up of one Flex System V7000 Control enclosure plus more than two other enclosures (whether Flex System V7000 Expansion enclosures, Storwize V7000 Expansion enclosures, or third party external storage enclosures), the maximum number of 5639-CM7 licenses required is three (see scenario 1 below)
- For any Flex System V7000 system made up of multiple Flex System V7000 Control enclosures (in a clustered configuration, for example), the maximum number of 5639-CM7 licenses required is three per Control enclosure (see scenarios 2 and 3 below)

Under this Storwize Family Software V7.2 revision, to authorize use of Real-time Compression capabilities of the IBM Flex System V7000, you must purchase a license for Storwize Family Software for Flex System V7000 Real-time Compression (5639-CM7) for each licensed enclosure managed by the IBM Flex System V7000 Disk System, including each internal enclosure licensed with Storwize Family Software for Flex System V7000 base software (5639-NZ7) and each external enclosure licensed with Storwize Family Software for Flex System V7000 External Virtualization (5639-EX7) up to a maximum number of three enclosure licenses for each Flex System V7000 Control enclosure.

This change applies to new software transactions and new software maintenance renewals and reinstatements only. If customers have already purchased a greater quantity of software licenses for Flex System V7000 Real-time Compression (5639-CM7) than required under this change, they should contact their sales representative to adjust the licensing to ensure they renew with the appropriate software maintenance license quantity as part of their next transaction. Some customers will have an automatic renewal of software maintenance applied to their account. It is the customer's responsibility to take advantage of this change in licensing requirements and to remove the automatic renewal (if desired) and to review the renewal statement to ensure any needed change in license quantity is made. This change does not entitle customers to any refunds for software licensing.

The following are examples of how to license Real-time Compression (5639-CM7) under the modified licensing rules:

**Scenario 1:** You have a four-enclosure Flex System V7000 system made up of one control enclosure and three expansion enclosures with nothing externally virtualized, therefore it has four 5639-NZ7 licenses. The Storwize Family Software for Flex System V7000 Real-time Compression licensing would be a total of three 5639-CM7 licenses required.

**Scenario 2:** You have a five-enclosure Flex System V7000 system made up of two control enclosures and three expansion enclosures with nothing externally virtualized, therefore it has five 5639-NZ7 licenses. The existence of two control enclosures moves the maximum license quantity up to six, therefore the Storwize Family Software for Flex System V7000 Real-time Compression licensing would be a total of five 5639-CM7 licenses required.

**Scenario 3:** You have a five-enclosure Flex System V7000 system made up of two control enclosures and three expansion enclosures, managing a DS5020 consisting of three enclosures, therefore it has five 5639-NZ7 licenses and three 5639-EX7 licenses. The existence of two control enclosures moves the maximum license quantity up to six, therefore the Storwize Family Software for Flex System V7000 Real-time Compression licensing would be a total of six 5639-CM7 licenses required, even though the total number of enclosures in the configuration is eight.

### Added interoperability

Storwize Family Software now supports many more heterogeneous data center environments with the addition of interoperability support for VMware vSphere 5.5.

For all the specific models and host environments supported, visit the IBM System Storage Interoperation Center (SSIC) at

<http://www.ibm.com/systems/support/storage/ssic>

Or you may also visit:

- For SAN Volume Controller  
<http://www.ibm.com/storage/support/2145>
- For Storwize V7000  
<http://www.ibm.com/storage/support/storwize/v7000>
- For IBM Flex System V7000  
[http://www.ibm.com/support/entry/portal/downloads/hardware/puresystems/pureflex\\_system/storage\\_node/flex\\_system\\_v7000](http://www.ibm.com/support/entry/portal/downloads/hardware/puresystems/pureflex_system/storage_node/flex_system_v7000)
- For Storwize V5000  
<http://www.ibm.com/storage/support/storwize/v5000>
- For Storwize V3700  
<http://www.ibm.com/storage/support/storwize/v3700>
- For Storwize V3500  
<http://www.ibm.com/storage/support/storwize/v3500>

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### **Accessibility by people with disabilities**

A US Section 508 Voluntary Product Accessibility Template (VPAT) containing details on accessibility compliance can be requested at

[http://www.ibm.com/able/product\\_accessibility/index.html](http://www.ibm.com/able/product_accessibility/index.html)

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### **Product positioning**

Customers today face a challenging business environment. There is a need to store more information to make their business more competitive and for IT to be responsive and support initiatives, all while controlling IT costs and to limit the amount of staff required to support IT.

The IBM Storwize Family of storage virtualization systems provides management of storage from entry and midrange up to enterprise disk systems. It enables hosts to attach through SAN, FCoE, or iSCSI to existing Ethernet networks. The Storwize Family of products are designed to be easy to use, enabling existing staff to start working with it rapidly. The Storwize Family of products use virtualization, thin provisioning, and compression technologies to improve storage utilization and to meet changing needs quickly and easily. In this way, the Storwize Family of products are the ideal complement to server virtualization strategies.

The Storwize Family of products also enable nearly nondisruptive migration of data from existing storage systems to new ones, simplifying implementation and minimizing disruption. It is an offering for customers with existing SAN or FCoE networks who seek to reduce the complexities and costs of managing their storage.

The Storwize Family of products are a cross-industry offering for customers who are mainly focused on cost savings while dealing with complexity and increasing storage requirements. These customers also focus on scaling capability with reasonable costs, including disaster recovery functions (Remote Mirroring, FlashCopy , Stretched clusters) and performance features (SSD and Easy Tier ).

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### **Reference information**

For information on the IBM System Storage SAN Volume Controller and IBM Storwize V7000, refer to Hardware Announcement [ZG13-0285](#), dated October 08, 2013 .

For information on the IBM Flex System V7000, refer to Hardware Announcement [ZG13-0292](#), dated October 08, 2013 , and Hardware Announcement [ZG13-0289](#), dated October 08, 2013 .

For information on the IBM Storwize V5000, refer to Hardware Announcement [ZG13-0273](#), dated October 08, 2013 .

For information on the IBM Storwize V3700 and IBM Storwize V3500, refer to Hardware Announcement [ZG13-0288](#), dated October 08, 2013 .

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## Availability of national languages

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Planned and supported geography translations will be available for web download by December 27, 2013, at the following websites.

- For SAN Volume Controller  
<http://www.ibm.com/storage/support/2145>
- For Storwize V7000  
<http://www.ibm.com/storage/support/storwize/v7000>
- For IBM Flex System V7000  
[http://www.ibm.com/support/entry/portal/downloads/hardware/puresystems/pureflex\\_system/storage\\_node/flex\\_system\\_v7000](http://www.ibm.com/support/entry/portal/downloads/hardware/puresystems/pureflex_system/storage_node/flex_system_v7000)
- For Storwize V5000  
<http://www.ibm.com/storage/support/storwize/v5000>
- For Storwize V3700  
<http://www.ibm.com/storage/support/storwize/v3700>
- For Storwize V3500  
<http://www.ibm.com/storage/support/storwize/v3500>

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## Program number

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Program number	VRM	Program name
5641-VC7	7.2.0	IBM Storwize Family Software for SAN volume Controller v7
5641-CP7	7.2.0	IBM Storwize Family Software for SAN volume Controller Real-time Compression software v7
5639-VM7	7.2.0	IBM Storwize Family Software for Storwize v7000
5639-EV7	7.2.0	IBM Storwize Family Software for Storwize v7000 External Virtualization software
5639-RM7	7.2.0	IBM Storwize Family Software for Storwize v7000 Remote Mirroring software
5639-CP7	7.2.0	IBM Storwize Family Software for Storwize v7000 Real-time Compression software
5639-NZ7	7.2.0	IBM Storwize Family Software for Flex System v7000
5639-RE7	7.2.0	IBM Flex System v7000 Remote Mirroring Software
5639-EX7	7.2.0	IBM Flex System v7000 External Virtualization Software
5639-CM7	7.2.0	IBM Flex System v7000 Real-time Compression Software
5639-ST7	7.2.0	IBM Storwize Family Software for Storwize v5000

## Product identification number

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### IBM Storwize Family Software for SAN Volume Controller V7

Program PID number	Maintenance 1-year PID number	Maintenance 3-year PID number
5641-VC7	5641-VCA reg	5641-VCC reg
Maintenance 2-year PID number	Maintenance 4-year PID number	Maintenance 5-year PID number
5641-VCB reg	5641-VCD reg	5641-VCE reg

### IBM Storwize Family Software for SAN Volume Controller Real-time Compression software V7

Program PID number	Maintenance 1-year PID number	Maintenance 3-year PID number
5641-CP7	5641-CS1 reg	5641-CS3 reg
Maintenance 2-year PID number	Maintenance 4-year PID number	Maintenance 5-year PID number
5641-CS2 reg	5641-CS4 reg	5641-CS5 reg

### IBM Storwize Family Software for Storwize V7000 V7

Program PID number	Maintenance 1 year PID number	Maintenance 3 year PID number
5639-VM7	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

### IBM Storwize Family Software for Storwize V7000 External Virtualization software V7

Program PID number	Maintenance 1 year PID number	Maintenance 3 year PID number
5639-EV7	5639-EVA reg/ren 5639-EVB af1	5639-EVD reg 5639-EVE renewal 5639-EVF af1
Maintenance 2 year PID number	Maintenance 4 year PID number	Maintenance 5 year PID number
5639-EVC reg	5639-EVG reg	5639-EVH reg

### IBM Storwize Family Software for Storwize V7000 Remote Mirroring software V7

Program PID number	Maintenance 1 year PID number	Maintenance 3 year PID number
5639-RM7	5639-RMA reg/ren 5639-RMB af1	5639-RMD reg 5639-RME ren 5639-RMF af1
Maintenance 2 year PID number	Maintenance 4 year PID number	Maintenance 5 year PID number
5639-RMC reg	5639-RMG reg	5639-RMH reg

### IBM Storwize Family Software for Storwize V7000 Real-time Compression software V7

Program PID number	Maintenance 1 year PID number	Maintenance 3 year PID number
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5639-CP7	5639-CS1 reg/ren 5639-CS2 af1	5639-CS3 reg 5639-CS4 renewal 5639-CS5 af1
Maintenance 2 year PID number	Maintenance 4 year PID number	Maintenance 5 year PID number
5639-CS6 reg	5639-CS7 reg	5639-CS8 reg

### **IBM Storwize Family Software for Flex System V7000**

Program PID number	Maintenance 1 year PID number	Maintenance 3 year PID number
5639-NZ7	5639-ZZA reg/ren 5639-ZZB af1	5639-ZZC reg 5639-ZZD renewal 5639-ZZE af1
Maintenance 2 year PID number	Maintenance 4 year PID number	Maintenance 5 year PID number
5639-ZZF reg	5639-ZZG reg	5639-ZZH reg

### **IBM Flex System V7000 Remote Mirroring Software**

Program PID number	Maintenance 1 year PID number	Maintenance 3 year PID number
5639-RE7	5639-REA reg/ren 5639-REB af1	5639-REC reg 5639-RED renewal 5639-REE af1
Maintenance 2 year PID number	Maintenance 4 year PID number	Maintenance 5 year PID number
5639-REF reg	5639-REG reg	5639-REH reg

### **IBM Flex System V7000 External Virtualization Software**

Program PID number	Maintenance 1 year PID number	Maintenance 3 year PID number
5639-EX7	5639-EXA reg/ren 5639-EXB af1	5639-EXC reg 5639-EXD renewal 5639-EXE af1
Maintenance 2 year PID number	Maintenance 4 year PID number	Maintenance 5 year PID number
5639-EXF reg	5639-EXG reg	5639-EXH reg

### **IBM Flex System V7000 Real-time Compression Software**

Program PID number	Maintenance 1 year PID number	Maintenance 3 year PID number
5639-CM7	5639-CMA reg/ren 5639-CMB af1	5639-CMC reg 5639-CMD renewal 5639-CME af1
Maintenance 2 year PID number	Maintenance 4 year PID number	Maintenance 5 year PID number
5639-CMF reg	5639-CMG reg	5639-CMH reg

### **IBM Storwize Family Software for Storwize V5000**

Program PID number	Maintenance 1 year PID number	Maintenance 3 year PID number
5639-ST7	5639-S13 reg/ren 5639-S14 af1	5639-S15 reg 5639-S16 renewal 5639-S17 af1
Maintenance 2 year PID number	Maintenance 4 year PID number	Maintenance 5 year PID number

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## Education support

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Web lecture courses are available to IBM and Business Partners.

Storage Technical Online Education courses on the IBM Storwize Family Software products are available to IBM and Business Partners on the IBM Systems College (formerly STG SMART Zone) site

- IBM  
<http://lt.be.ibm.com/smartzone/storagetech>
- Business Partners  
<http://www.ibm.com/services/weblectures/dlv/smartzone/storagetech>

Classroom courses are available to IBM , Business Partners, and customers.

Hands-on courses are available worldwide to all audiences for SVC:

course number	Course title
SNV0	SAN volume controller (SVC) Planning and implementation
SNV1	SAN volume Controller (SVC) Planning and implementation workshop

For more information and course schedules, go to IBM training website

[http://www.ibm.com/services/learning/ites.wss/zz/en?pageType=tp\\_search](http://www.ibm.com/services/learning/ites.wss/zz/en?pageType=tp_search)

Search on the course number - 'SNV0' for lectures only, or 'SNV1' for lectures and labs.

SNV0 for IBM

<https://w3.ibm.com/learning/lms/Saba/Web/Main/goto/learningActivity?deepLinkRedirect=false&courseNum=SNV0G>

SNV0 for Business Partners (worldwide)

[http://www.ibm.com/services/learning/ites.wss/tp/en?pageType=tp\\_search\\_results&rowStart=0&rowsToReturn=20&searchString=snv0](http://www.ibm.com/services/learning/ites.wss/tp/en?pageType=tp_search_results&rowStart=0&rowsToReturn=20&searchString=snv0)

SNV1 for IBM

<https://w3.ibm.com/learning/lms/Saba/Web/Main/goto/learningActivity?deepLinkRedirect=false&courseNum=SNV1G>

SNV1 for Business Partners (worldwide)

[http://www.ibm.com/services/learning/ites.wss/tp/en?pageType=tp\\_search\\_results&rowStart=0&rowsToReturn=20&searchString=snv1](http://www.ibm.com/services/learning/ites.wss/tp/en?pageType=tp_search_results&rowStart=0&rowsToReturn=20&searchString=snv1)

More information is available at

<http://www.ibm.com/services/learning/>

or

<http://www.ibm.com/training>

IBM Global Services, IT Education Services, supports many IBM offerings

Contact your IBM representative for course information.

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## Offering Information

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Product information is available via the Offering Information website

<http://www.ibm.com/common/ssi>

Also, visit the Passport Advantage® website

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

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## Publications

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No publications are shipped with these programs.

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

Title	Order number
IBM Storwize Family Software for SAN Volume Controller Read First Flyer	GA32-0843
IBM System Storage SAN Volume Controller Model 2145-CG8 Hardware Installation Guide	GC27-3923
IBM System Storage SAN Volume Controller Hardware Maintenance Guide	GC27-2283
IBM System Storage SAN Volume Controller Troubleshooting Guide	GC27-2284
IBM System Storage SAN Volume Controller Software Installation and Configuration Guide	GC27-2286
IBM System Storage SAN Volume Controller and Storwize V7000 Command-Line Interface User's Guide	GC27-2287
IBM System Storage SAN Volume Controller CIM Agent Developer's Guide	SG27-2288
IBM System Storage SAN Volume Controller Safety Notices	GA32-0844
IBM System Storage Multipath Subsystem Device Driver User's Guide	GC52-1309
IBM Storwize V7000 CIM Agent Developer's Guide	GC27-2292-02
IBM Storwize V7000 Read First	GC27-2293-01
IBM Storwize V7000 Quick Installation Guide	GC27-2290-02
IBM Storwize V7000 Troubleshooting, Recovery, and Maintenance Guide	GC27-2291-02
IBM Storwize V7000 Safety Notices	GC27-3924-00
IBM Storwize V5000 Quick Installation Guide	GI13-2861-00

IBM Storwize V5000 Installation Poster	SC27-5923-00
IBM Storwize V5000 Read First Flyer	GI13-2860-00
IBM Systems Safety Notices	G229-9054-06

To view online information and link to a download site, visit the Information Center.

- For SAN Volume Controller  
<http://publib.boulder.ibm.com/infocenter/svc/ic/index.jsp>
- For IBM Storwize V7000 Information Center  
<http://publib.boulder.ibm.com/infocenter/storwize/ic/index.jsp>
- For all other Storwize Family products, visit  
<http://www.ibm.com/support/publications/us/library/>
- To order additional selected hardcopy publications for a fee or to 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.

- For SAN Volume Controller  
<http://www.ibm.com/storage/support/2145>
- For Storwize V7000  
<http://www.ibm.com/storage/support/storwize/v7000>
- For IBM Flex System V7000  
[http://www.ibm.com/support/entry/portal/downloads/hardware/puresystems/pureflex\\_system/storage\\_node/flex\\_system\\_v7000](http://www.ibm.com/support/entry/portal/downloads/hardware/puresystems/pureflex_system/storage_node/flex_system_v7000)
- For Storwize V5000  
<http://www.ibm.com/storage/support/storwize/v5000>
- For Storwize V3700  
<http://www.ibm.com/storage/support/storwize/v3700>
- For Storwize V3500  
<http://www.ibm.com/storage/support/storwize/v3500>
- Contact your IBM representative.

### **The IBM Publications Center**

Hardcopies of selected 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.

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## **Technical information**

### **Specified operating environment**

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#### **Hardware requirements**

IBM Storwize Family Software for SAN Volume Controller requires at least one pair of IBM System Storage SAN Volume Controller 2145-CG8, 2145-CF8, 2145-8A4, 2145-8G4, 2145-8F4, or 2145-8F2 storage engines with dual uninterruptible power supplies, and a System Storage Productivity Center for installation.

As with SVC V5 and later versions, Storwize Family Software for SAN Volume Controller V7 software cannot be loaded or run on SVC hardware engine model 2145-4F2.

IBM Storwize Family Software for Storwize V7000 requires at least one IBM Storwize V7000 Control Enclosure (2076-112, 2076-124, 2076-312, or 2076-324) for installation.

IBM Storwize Family Software for Flex System V7000 requires at least one IBM Flex System V7000 Control Enclosure (4939-A49) for installation.

IBM Storwize Family Software for Storwize V5000 requires at least one IBM Storwize V5000 control enclosure (2077-12C, 2077-24C, 2078-12C, or 2078-24C) for installation.

Current support summaries, including specific software, hardware, and firmware levels supported, are maintained at the support website.

- For SAN Volume Controller  
<http://www.ibm.com/storage/support/2145>
- For Storwize V7000  
<http://www.ibm.com/storage/support/storwize/v7000>
- For IBM Flex System V7000  
[http://www.ibm.com/support/entry/portal/downloads/hardware/puresystems/pureflex\\_system/storage\\_node/flex\\_system\\_v7000](http://www.ibm.com/support/entry/portal/downloads/hardware/puresystems/pureflex_system/storage_node/flex_system_v7000)
- For Storwize V5000  
<http://www.ibm.com/storage/support/storwize/v5000>
- For Storwize V3700  
<http://www.ibm.com/storage/support/storwize/v3700>
- <http://www.ibm.com/storage/support/storwize/v3500>

For information on the Storwize Family of products hardware, refer to the announcements listed in the [Reference information](#) section.

### **Software requirements**

Installation of Storwize Family Software V7.2 software can be done directly from systems running Storwize Family Software V7.1.

For current hardware and software interoperability dependencies, and other product environment and configuration information, refer to the support website.

- For SAN Volume Controller  
<http://www.ibm.com/storage/support/2145>
- For Storwize V7000  
<http://www.ibm.com/storage/support/storwize/v7000>
- For IBM Flex System V7000  
[http://www.ibm.com/support/entry/portal/downloads/hardware/puresystems/pureflex\\_system/storage\\_node/flex\\_system\\_v7000](http://www.ibm.com/support/entry/portal/downloads/hardware/puresystems/pureflex_system/storage_node/flex_system_v7000)
- For Storwize V5000  
<http://www.ibm.com/storage/support/storwize/v5000>
- For Storwize V3700  
<http://www.ibm.com/storage/support/storwize/v3700>
- For Storwize V3500  
<http://www.ibm.com/storage/support/storwize/v3500>

IBM includes one year of software maintenance with each program license acquired. The initial period of software maintenance can be extended by the purchase of a

renewal option when ordered through Passport Advantage or Passport Advantage Express® .

**Note:** Only Storwize Family Software for SAN Volume Controller can be ordered through Passport Advantage .

When ordering using the program number with feature codes, software maintenance can be extended by selecting the applicable two, three, four, or five year software maintenance registration program number and features.

There are no software licenses required nor available for the IBM Storwize V3500 and IBM Storwize V3700.

For the Storwize Family Software for SAN Volume Controller software only, all Software Maintenance renewals will be managed and invoiced through Passport Advantage .

Refer to the [Description](#) section for new storage system and host environment support added by this announcement. For all current storage systems and host environments supported, refer to the support website.

- For SAN Volume Controller  
<http://www.ibm.com/storage/support/2145>
- For Storwize V7000  
<http://www.ibm.com/storage/support/storwize/v7000>
- For IBM Flex System V7000  
[http://www.ibm.com/support/entry/portal/downloads/hardware/puresystems/pureflex\\_system/storage\\_node/flex\\_system\\_v7000](http://www.ibm.com/support/entry/portal/downloads/hardware/puresystems/pureflex_system/storage_node/flex_system_v7000)
- For Storwize V5000  
<http://www.ibm.com/storage/support/storwize/v5000>
- For Storwize V3700  
<http://www.ibm.com/storage/support/storwize/v3700>
- For Storwize V3500  
<http://www.ibm.com/storage/support/storwize/v3500>

The program's specifications and specified operating environment information may be found in documentation accompanying the program, if available, such as a README file, or other information published by IBM , such as an announcement letter. Documentation and other program content may be supplied only in the English language.

### **Compatibility**

For further information regarding currently supported environments and operating guidelines, visit the support website.

- For SAN Volume Controller  
<http://www.ibm.com/storage/support/2145>
- For Storwize V7000  
<http://www.ibm.com/storage/support/storwize/v7000>
- For IBM Flex System V7000  
[http://www.ibm.com/support/entry/portal/downloads/hardware/puresystems/pureflex\\_system/storage\\_node/flex\\_system\\_v7000](http://www.ibm.com/support/entry/portal/downloads/hardware/puresystems/pureflex_system/storage_node/flex_system_v7000)
- For Storwize V5000  
<http://www.ibm.com/storage/support/storwize/v5000>
- For Storwize V3700  
<http://www.ibm.com/storage/support/storwize/v3700>
- For Storwize V3500  
<http://www.ibm.com/storage/support/storwize/v3500>

## **Limitations**

This program only operates on specified storage hardware as detailed in the [Hardware requirements](#) section.

For hardware-associated limitations, refer to the announcements listed in the [Reference information](#) section.

For additional information, refer to Usage restriction section in the [Terms and conditions](#) section of this announcement, and to the License Information document that is available on the IBM Software License Agreement website

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

Additional information on configuration limitations and configuration guidelines is further documented in the README file accompanying the Edition Storwize Family Software or in furnished publications for this product available at the support website.

- For SAN Volume Controller  
<http://www.ibm.com/storage/support/2145>
- For Storwize V7000  
<http://www.ibm.com/storage/support/storwize/v7000>
- For IBM Flex System V7000  
[http://www.ibm.com/support/entry/portal/downloads/hardware/puresystems/pureflex\\_system/storage\\_node/flex\\_system\\_v7000](http://www.ibm.com/support/entry/portal/downloads/hardware/puresystems/pureflex_system/storage_node/flex_system_v7000)
- For Storwize V5000  
<http://www.ibm.com/storage/support/storwize/v5000>
- For Storwize V3700  
<http://www.ibm.com/storage/support/storwize/v3700>
- For Storwize V3500  
<http://www.ibm.com/storage/support/storwize/v3500>

## **Planning information**

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### **Customer responsibilities**

Planning for and provision of the power and environmental support of the required IBM Storwize Family of products, including its storage engines, is a customer responsibility.

Refer to the announcements listed in the [Reference information](#) section.

Planning considerations for IBM Storwize Family Software are listed in the respective product's information center, which is available at

<http://www.ibm.com/support/publications/us/library/>

Customers with a 5641-VC7 and 5641-CP7 license are responsible to combine the total terabytes managed for each function from individual SAN Volume Controller License Manager (cluster) reports to ensure they are within the enterprise license entitlement (within that country) for each function.

Customers with enclosure licenses for optional functions, such as Easy Tier and FlashCopy, are responsible to combine the total number of enclosures managed for each function to ensure they are within the enterprise license entitlement (within that country) for each function.

### **Installability**

Refer to the [Software requirements](#) section.

## **Packaging**

### **New order packaging**

License information documents for Storwize Family Software programs ship with the hardware on which these programs are preloaded.

The IBM Agreement for Acquisition of Support and Addendum for Support, Z125-6011, is shipped with each new Storwize Family Software order.

### **SAN Volume Controller**

IBM Storwize Family Software for SAN Volume Controller V7 (5641-VC7, 5641-CP7) is preinstalled on, and shipped with, the required IBM 2145 SAN Volume Controller Storage Engines.

After receipt of an order for Storwize Family Software for SAN Volume Controller 5641-VC7, the Business Partner or end customer will be required to register and accept Passport Advantage or Passport Express terms and conditions. Upon registration, the customer will be authorized for the electronic download of software code updates. The product includes the license and one year of support, with up to four additional years available for purchase with the product.

In addition to the IBM Agreement for Acquisition of Software Maintenance, the following are shipped with each new IBM System Storage SAN Volume Controller order:

- License Information for IBM System Storage SAN Volume Controller V7.2, GI13-2841
- IBM System Storage SAN Volume Controller Read First file, GA32-0843
- License Information for IBM System Storage SAN Volume Controller Storage Replication Adapter for VMware SRM, GA76-0431

### **Storwize V7000**

IBM Storwize Family Software for Storwize V7000 V7, (5639-VM7, 5639-EV7, 5639-RM7, and 5639-CP7) is preinstalled on, and shipped with, the required IBM 2076 Storwize V7000 Disk Systems.

In addition to the IBM Agreement for Acquisition of Software Maintenance, the License Information for IBM System Storage SAN Volume Controller and IBM Storwize V7000 Version 7, GI13-2841, is shipped with each new IBM Storwize V7000 Controller order.

### **Flex System V7000**

IBM Storwize Family Software for Flex System V7000 V7.2 (5639-NZ7, 5639-RE7, 5639-EX7, and 5639-CM7) is preinstalled on, and shipped with, the required IBM 4939-A49 Flex System V7000 Disk Systems.

In addition to the IBM Agreement for Acquisition of Software Maintenance, the License Information for IBM Flex System V7000 V7.2, GI13-2809, is shipped with each new IBM Flex System V7000 Controller order.

### **Storwize V5000**

IBM Storwize Family Software for Storwize V5000 (5639-ST7) is preinstalled on, and shipped with, the required IBM 2077 or 2078 IBM Storwize V5000 Disk Systems.

The paid invoice acts as Proof of Entitlement (PoE) for all orders of IBM Storwize Family Software V7. All associated media listed in the [Publications](#) section are also shipped with the new hardware order. One media set per IBM Storwize Family system will be shipped. Refer to the hardware announcements listed in the [Reference information](#) section for correlated hardware order features.



## Subsequent media orders

For additional available publications, refer to the [Publications](#) section.

For assistance in placing orders with or without media features, contact your IBM representative.

Publications are in English. This program, when downloaded from a website, contains the applicable IBM license agreement and License Information, if appropriate, and will be presented for acceptance at the time of installation of the program. For future reference, the license and License Information will be stored in a directory such as LICENSE.TXT.

## Security, auditability, and control

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Storwize Family Software can use an existing LDAP for authentication (for example, interfacing with Microsoft™ Active Directory).

Use of supplementary antivirus software is recommended, but not required. The customer is responsible for evaluation, selection, and implementation of security features, administrative procedures, and appropriate controls in application systems and communication facilities.

## Global Technology Services®

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Contact your IBM representative for the list of selected services available in your country, either as standard or customized offerings for the efficient installation, implementation, or integration of this product.

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## Ordering information

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This IBM WorkStation Software product is being announced as a dual-pipe offering, and is available for ordering by program and feature number or by part number.

When ordering by part numbers, this product can be obtained through IBM Passport Advantage . Contact your IBM representative or IBM Business Partner Reseller and Distributors for WorkStation Software.

For more information, contact your IBM sales specialist, IBM Business Partner, or visit

<http://www-306.ibm.com/software/support/pa.html>

## Order handling

The IBM Storwize Family Software for SAN Volume Controller products identified in this announcement (5641-VC7 and 5641-CP7) will be ordered through existing channels using existing configurator and ordering tools. However, the fulfillment processes have been modified to improve customer records management associated with Software Subscription and Support, often referred to as Software Maintenance. Software Subscription and Support will be entitled through Passport Advantage or Passport Advantage Express .

The products 5641-VC7 and 5641-CP7, when selected during the configuration process with each hardware system, will be enabled for the system unit for which the product was ordered. Optionally, software and license only configurations can be created for 5641-VC7 and 5641-CP7 based on existing supported hardware system units in the customer business environment. Offerings in this announcement are available exclusively through electronic download.

## Passport Advantage customer: Media pack entitlement details

A Passport Advantage media pack will not be generated. Read first information, will be available with downloaded code updates from Passport Advantage .

Media pack information can be found on the Passport Advantage website

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

Passport Advantage (PPA) allows greater flexibility to help customers manage their software licenses and Subscription and Support renewals. Customers can now have a common anniversary date for Subscription and Support renewals for all IBM software, under a PPA agreement, including IBM Storage software. The anniversary date, established at the order ship date for the initial product acquisition, will remain unchanged while their Passport Advantage or Passport Advantage Express agreement remains in effect.

To order a basic license, specify the program number and the one-time charge feature number in the quantity desired.

The program is available via electronic download only.

Program name: IBM Storwize Family Software for SAN Volume Controller v7  
PID: 5641-VC7

Use-based OTC with One-year Software Maintenance

Description	Program number	Feature number
SVC VZN+1YRSWM/TB 751-1250 SVC Base Virtualization Per 250 Terabyte 751-1250 with 1 Year SW Maintenance	5641-VC7	B0N9F2
SVC VZN+1YRSWM/TB 1251-2000 SVC Base Virtualization Per 250 Terabyte 1251-2000 with 1 Year SW Maintenance		B0PAF2
SVC FLC+1YRSWM/TB 751-1250 FlashCopy for SVC Per 250 Terabyte 751-1250 with 1 Year SW Maintenance		B0PGF2
SVC FLC+1YRSWM/TB 1251-2000 FlashCopy for SVC Per 250 Terabyte 1251-2000 with 1 Year SW Maintenance		B0PHF2
SVC RMC+1YRSWM/TB 751-1250 Metro/Global Mirror for SVC Per 250 Terabyte 751-1250 with 1 Year SW Maintenance		B0PPF2
SVC RMC+1YRSWM/TB 1251-2000 Metro/Global Mirror for SVC Per 250 Terabyte 1251-2000 with 1 Year SW Maintenance		B0PRF2

Program name: IBM Storwize Family Software for Storwize v7000  
External virtualization software v7  
PID: 5639-EV7

Use-based OTC with One-year Software Maintenance

Description	Program number	Feature number
IBM Storwize V7000 EV+1YRSWM/enc1 IBM Storwize V7000 Ext. Virt. SW Per 250 Storage Device with 1 Year SW Maintenance	5639-EV7	BAS2F2

Program name: IBM Storwize Family Software for Storwize V7000  
Remote Mirroring software V7  
PID: 5639-RM7

Use-based OTC with One-year Software Maintenance

Description	Program number	Feature number
IBM Storwize V7000 RM+1YRSWM/enc1 IBM Storwize V7000 Remote Mirror Per 250 Storage Device with 1 Year SW Maintenance	5639-RM7	BATBF2

### Software Maintenance

One of the corresponding program numbers below associated with the base license program number above must be ordered in conjunction with the base license program number at the time of order placement. The quantity designated for the base license feature must be equal to the quantity designated for the registration feature.

Program name: IBM Storwize Family Software for SAN Volume Controller v7  
Software Maintenance - One-year Registration  
PID: 5641-VCA

Description	Program number	Feature number
SVC 1Yr VZN Reg/TB 751-1250 SVC Base Virtualization One-year NC Registration per 250 Terabyte 751-1250	5641-VCA	L0P1F4
SVC 1Yr VZN Reg/TB 1251-2000 SVC Base Virtualization One-year NC Registration per 250 Terabyte 1251-2000		L0P2F4
SVC 1Yr FLC Reg/TB 751-1250 SVC FlashCopy One-year NC Registration per 250 Terabyte 751-125		L0RFF4
SVC 1Yr FLC Reg/TB 1251-2000 SVC FlashCopy One-year NC Registration per 250 Terabyte 1251-2000		L0RGF4
SVC 1Yr RMC Reg/TB 751-1250 SVC Metro/Global Mirror One-year NC Registration per 250 Terabyte 751-1250		L0RNF4
SVC 1Yr RMC Reg/TB 1251-2000 SVC Metro/Global Mirror		L0RPF4

One-year NC Registration  
per 250 Terabyte 1251-2000

Program name: IBM Storwize Family Software for SAN Volume Controller V7  
Software Maintenance - Three-year Registration  
PID: 5641-VCC

Description	Program number	Feature number
SVC 3Yr VZN Reg/TB 751-1250 SVC Base Virtualization Three-year Registration One-time charge per 250 Terabyte 751-1250	5641-VCC	L0SHF7
SVC 3Yr VZN Reg/TB 1251-2000 SVC Base Virtualization Three-year Registration One-time charge per 250 Terabyte 1251-2000		L0SJF7
SVC 3Yr FLC Reg/TB 751-1250 SVC FlashCopy Three-year Registration One-time charge per 250 Terabyte 751-1250		L0SRF7
SVC 3Yr FLC Reg/TB 1251-2000 SVC FlashCopy Three-year Registration One-time charge per 250 Terabyte 1251-2000		L0SSF7
SVC 3Yr RMC Reg/TB 751-1250 SVC Metro/Global Mirror Three-year Registration One-time charge per 250 Terabyte 751-1250		L0SYF7
SVC 3Yr RMC Reg/TB 1251-2000 SVC Metro/Global Mirror Three-year Registration One-time charge per 250 Terabyte 1251-2000		L0SZF7

Program name: IBM Storwize Family Software for SAN Volume Controller V7  
Software Maintenance - Two-year Registration  
PID: 5641-VCB

Description	Program number	Feature number
SVC 2Yr VZN Reg/TB 751-1250 SVC Base Virtualization Two-year Registration One-time charge per 250 Terabyte 751-1250	5641-VCB	X0RW41
SVC 2Yr VZN Reg/TB 1251-2000 SVC Base Virtualization Two-year Registration One-time charge per 250 Terabyte 1251-2000		X0RX41
SVC 2Yr FLC Reg/TB 751-1250 SVC FlashCopy Two-year Registration One-time charge per 250 Terabyte 751-1250		X0R341

SVC 2Yr FLC Reg/TB 1251-2000 X0R441  
 SVC FlashCopy  
 Two-year Registration  
 One-time charge  
 per 250 Terabyte 1251-2000

SVC 2Yr RMC Reg/TB 751-1250 X0SA41  
 SVC Metro/Global Mirror  
 Two-year Registration  
 One-time charge  
 per 250 Terabyte 751-1250

SVC 2Yr RMC Reg/TB 1251-2000 X0SB41  
 SVC Metro/Global Mirror  
 Two-year Registration  
 One-time charge  
 per 250 Terabyte 1251-2000

Program name: IBM Storwize Family Software for SAN Volume Controller v7  
 Software Maintenance - Four-year Registration  
 PID: 5641-VCD

Description	Program number	Feature number
SVC 4Yr VZN Reg/TB 751-1250 SVC Base Virtualization Four-year Registration One-time charge per 250 Terabyte 751-1250	5641-VCD	X0S542
SVC 4Yr VZN Reg/TB 1251-2000 SVC Base Virtualization Four-year Registration One-time charge per 250 Terabyte 1251-2000		X0S642
SVC 4Yr FLC Reg/TB 751-1250 SVC FlashCopy Four-year Registration One-time charge per 250 Terabyte 751-1250		X0TC42
SVC 4Yr FLC Reg/TB 1251-2000 SVC FlashCopy Four-year Registration One-time charge per 250 Terabyte 1251-2000		X0TD42
SVC 4Yr RMC Reg/TB 751-1250 SVC Metro/Global Mirror Four-year Registration One-time charge per 250 Terabyte 751-1250		X0TK42
SVC 4Yr RMC Reg/TB 1251-2000 SVC Metro/Global Mirror Four-year Registration One-time charge per 250 Terabyte 1251-2000		X0TL42

Program name: IBM Storwize Family Software for SAN Volume Controller v7  
 Software Maintenance - Five-year Registration  
 PID: 5641-VCE

Description	Program number	Feature number
SVC 5Yr VZN Reg/TB 751-1250	5641-VCE	X0TT43

SVC Base Virtualization  
Five-year Registration  
One-time charge  
per 250 Terabyte 751-1250

SVC 5Yr VZN Reg/TB 1251-2000 X0TU43  
SVC Base Virtualization  
Five-year Registration  
One-time charge  
per 250 Terabyte 1251-2000

SVC 5Yr FLC Reg/TB 751-1250 X0T043  
SVC FlashCopy  
Five-year Registration  
One-time charge  
per 250 Terabyte 751-1250

SVC 5Yr FLC Reg/TB 1251-2000 X0T143  
SVC FlashCopy  
Five-year Registration  
One-time charge  
per 250 Terabyte 1251-2000

SVC 5Yr RMC Reg/TB 751-1250 X0T743  
SVC Metro/Global Mirror  
Five-year Registration  
One-time charge  
per 250 Terabyte 751-1250

SVC 5Yr RMC Reg/TB 1251-2000 X0T843  
SVC Metro/Global Mirror  
Five-year Registration  
One-time charge  
per 250 Terabyte 1251-2000

Program name: IBM Storwize Family Software for Storwize V7000  
External Virtualization  
Software Maintenance  
PID: 5639-EVA

One-year No Charge Registration

Description	Program number	Feature number
IBM Storwize V7000 EV+1YRSWM/enc1 IBM Storwize V7000 Ext. Virt. SW One-year NC Registration per 250 Storage Device	5639-EVA	LAS3F4

One-year Renewal:

IBM Storwize V7000 EV+1YRSWM RNL/enc1 IBM Storwize V7000 Ext. Virt. SW One-year Renewal One-time charge per 250 Storage Device		LAS3F5
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Program name: IBM Storwize Family Software for Storwize V7000  
External Virtualization  
Software maintenance - One-year After License  
PID: 5639-EVB

Description	Program number	Feature number
IBM Storwize V7000 EV+1YRSWM AFL/enc1 IBM Storwize V7000 Ext. Virt. SW One-year After License One-time charge	5639-EVB	LAS4F6

per 250 Storage Device

Program name: IBM Storwize Family Software for Storwize V7000  
External Virtualization  
Software Maintenance - Three-year Registration  
PID: 5639-EVD

Description	Program number	Feature number
IBM Storwize V7000 3Yr EV Reg/enc1 IBM Storwize V7000 Ext. Virt. SW Three-year Registration One-time charge per 250 Storage Device	5639-EVD	LAS6F7

Program name: IBM Storwize Family Software for Storwize V7000  
External Virtualization  
Software Maintenance - Three-year Renewal  
PID: 5639-EVE

Description	Program number	Feature number
IBM Storwize V7000 3Yr EV RNL/enc1 IBM Storwize V7000 Ext. Virt. SW Three-year Renewal One-time charge per 250 Storage Device	5639-EVE	LAS7F8

Program name: IBM Storwize Family Software for Storwize V7000  
External Virtualization  
Software Maintenance - Three-year After License  
PID: 5639-EVF

Description	Program number	Feature number
IBM Storwize V7000 3Yr EV AFL/enc1 IBM Storwize V7000 Ext. Virt. SW Three-year After License One-time charge per 250 Storage Device	5639-EVF	LAS8F9

Program name: IBM Storwize Family Software for Storwize V7000  
External Virtualization  
Software maintenance - Two-year Registration  
PID: 5639-EVC

Description	Program number	Feature number
IBM Storwize V7000 2Yr EV Reg/enc1 IBM Storwize V7000 Ext. Virt. SW Two-year Registration One-time charge per 250 Storage Device	5639-EVC	XAS541

Program name: IBM Storwize Family Software for Storwize V7000  
External Virtualization  
Software maintenance - Four-year Registration  
PID: 5639-EVG

Program Feature

Description	number	number
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IBM Storwize V7000 4Yr EV Reg/enc1 IBM Storwize V7000 Ext. Virt. SW Four-year Registration One-time charge per 250 Storage Device	5639-EVG	XAS942
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Program name: IBM Storwize Family Software for Storwize V7000  
External Virtualization  
Software maintenance - Five-year Registration  
PID: 5639-EVH

Description	Program number	Feature number
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IBM Storwize V7000 5Yr EV Reg/enc1 IBM Storwize V7000 Ext. Virt. SW Five-year Registration One-time charge per 250 Storage Device	5639-EVH	XATA43
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Program name: IBM Storwize Family Software for Storwize V7000  
Remote Mirroring  
Software maintenance  
PID: 5639-RMA

One-year No Charge Registration

Description	Program number	Feature number
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IBM Storwize V7000 RM+1YRSWM/enc1 IBM Storwize V7000 Remote Mirror SW One-year NC Registration per 250 Storage Device	5639-RMA	LATCF4
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One-year Renewal:

IBM Storwize V7000 RM+1YRSWM RNL/enc1 IBM Storwize V7000 Remote Mirror SW One-year Renewal per 250 Storage Device		LATCF5
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Program name: IBM Storwize Family Software for Storwize V7000  
Remote Mirroring  
Software maintenance - One-year After License  
PID: 5639-RMB

Description	Program number	Feature number
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IBM Storwize V7000 RM+1YRSWM AFL/enc1 IBM Storwize V7000 Remote Mirror SW One-year After License per 250 Storage Device	5639-RMB	LATDF6
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Program name: IBM Storwize Family Software for Storwize V7000  
Remote Mirroring



PID: Software maintenance - Three-year Registration  
5639-RMD

Description	Program number	Feature number
IBM Storwize V7000 3Yr RM Reg/enc1 IBM Storwize V7000 Remote Mirror Three-year Registration One-time charge per 250 Storage Device	5639-RMD	LATFF7

Program name: IBM Storwize Family Software for Storwize V7000  
Remote Mirroring  
Software maintenance - Three-year Renewal  
PID: 5639-RME

Description	Program number	Feature number
IBM Storwize V7000 3Yr RM RNL/enc1 IBM Storwize V7000 Remote Mirror Three-year Renewal One-time charge per 250 Storage Device	5639-RME	LATGF8

Program name: IBM Storwize Family Software for Storwize V7000  
Remote Mirroring  
Software maintenance - Three-year After License  
PID: 5639-RMF

Description	Program number	Feature number
IBM Storwize V7000 3Yr RM AFL/enc1 IBM Storwize V7000 Remote Mirror Three-year After License One-time charge per 250 Storage Device	5639-RMF	LATHF9

Program name: IBM Storwize Family Software for Storwize V7000  
Remote Mirroring  
Software maintenance - Two-year Registration  
PID: 5639-RMC

Description	Program number	Feature number
IBM Storwize V7000 2Yr RM Reg/enc1 IBM Storwize V7000 Remote Mirror Two-year Registration One-time charge per 250 Storage Device	5639-RMC	XATE41

Program name: IBM Storwize Family Software for Storwize V7000  
Remote Mirroring  
Software maintenance - Four-year Registration  
PID: 5639-RMG

Description	Program number	Feature number
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IBM Storwize V7000                    5639-RMG    XATJ42  
 4Yr RM Reg/encl  
 IBM Storwize V7000  
 Remote Mirror  
 Four-year Registration  
 One-time charge  
 per 250 Storage Device

Program name: IBM Storwize Family Software for Storwize V7000  
 Remote Mirroring  
 Software maintenance - Five-year Registration  
 PID:                    5639-RMH

Description	Program number	Feature number
IBM Storwize V7000 5Yr RM Reg/encl IBM Storwize V7000 Remote Mirror Five-year Registration One-time charge per 250 Storage Device	5639-RMH	XATK43

**Charge metric**

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Program name	Part number or PID number	Charge metric
IBM Storwize Family Software for SAN Volume Controller V7	5641-VC7	Per terabyte increments
IBM Storwize Family Software for SAN Volume Controller V7 (for Passport Advantage)	5725-M19	Per terabyte increments
IBM Storwize Family Software for SAN Volume Controller Real-time Compression Software V7	5641-CP7	Per terabyte increments
IBM Storwize Family Software for SAN Volume Controller Real-time Compression Software V7 (for Passport Advantage)	5725-H04	Per terabyte increments
IBM Storwize Family Software for Storwize V7000 V7	5639-VM7	Per Storage Device
IBM Storwize Family Software for Storwize V7000 External Virtualization software V7	5639-EV7	Per Storage Device
IBM Storwize Family Software for Storwize V7000 Remote Mirroring software V7	5639-RM7	Per Storage Device

IBM Storwize Family Software for Storwize V7000 Real-time Compression software V7	5639-CP7	Per Storage Device
IBM Storwize Family Software for Flex System V7000	5639-NZ7	Per Storage Device
IBM Flex System V7000 Remote Mirroring Software	5639-RE7	Per Storage Device
IBM Flex System V7000 External Virtualization Software	5639-EX7	Per Storage Device
IBM Flex System V7000 Real-time Compression Software	5639-CM7	Per Storage Device
IBM Storwize Family Software for Storwize V5000	5639-ST7	Per Storage Device

### **New orders for Storwize Family Software**

For new Storwize Family Software V7 program number orders, first order the appropriate hardware for the initial system or cluster, then order the Storwize Family Software license.

**Note:** Real-time Compression , External Virtualization, Remote Mirroring software product identifiers are optional, and are ordered along with or where there is already a complete Storwize Family system, like the SAN Volume Controller 2145 or the Storwize V7000 2076 hardware, in place with the appropriate required Storwize Family software license for that system.

### **License metric definition**

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For SVC:

#### **Terabyte (T/TB)**

1 TB of managed storage = 2 to the power of 40 bytes = 1,099,511,627,776 bytes, trillion bytes.

For Storwize V7000, Flex System V7000, and Storwize V5000:

#### **Storage Device**

Storage Device is a unit of measure by which the Program can be licensed. A Storage Device is an independently powered, channel-attached device that stores or controls the storage of data on magnetic disks or solid state drives, such as disk controllers and their respective expansion units, each constituting separate Storage Devices. Licensee must obtain entitlements for every Storage Device which runs, uses services provided by, or otherwise accesses the Program and for every Storage Device on which the Program is installed. Instead of the entitlements required for the Program directly, Licensee must obtain entitlements for this Program sufficient to cover the Storage Devices managed by the Program.

A storage device is equivalent to an enclosure, the term used most often when describing the Storwize Family Software product licensing and usage.

## New orders for media

For Storwize V7000 (5639-VM7), customers have the option to choose either electronic software delivery (ESD) or physical media. ESD option is the default distribution. Customers are allowed to change the order from ESD to physical media with an additional charge through a software license PID.

## Customers requesting ESD

Downloading from the electronic software delivery website requires an active Software Maintenance Agreement for each product to be downloaded and registration with the ESS website. Visit

<http://www.ibm.com/servers/eserver/ess>

Website registration requires:

- A valid customer number
- A software order number associated with the customer number

If you do not have and cannot obtain the customer number or software order number pair by any other means, you can process a 5639-VM1 upgrade order specifying electronic software delivery.

The following is the list of participating PID product for which upgrades and refreshes are available via ESD download:

Program name: IBM Storwize v7000 Software v7

Program number	Description	Feature number
5639-VM7	Media Feature Charge	3437
	Electronic SW Delivery	3450

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## Terms and conditions

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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.

### ***Licensing***

IBM International Program License Agreement including the License Information document and Proof of Entitlement (PoE) govern your use of the program. PoEs are required for all authorized use. Part number products only, offered outside of Passport Advantage, where applicable, are license only and do not include Software Maintenance.

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) applies for Subscription and Support (also referred to as Software Maintenance) and does not require customer signatures.

These programs are licensed under the IBM Program License Agreement (IPLA) and the associated Agreement for Acquisition of Software Maintenance, which provide for support with ongoing access to releases and versions of the program. IBM includes one year of Software Subscription and Support (also referred to as

Software Maintenance) with the initial license acquisition of each program acquired. The initial period of Software Subscription and Support (also referred to as Software Maintenance) can be extended by the purchase of a renewal option, if available.

The customer is responsible for ensuring they renew their SWMA coverage for all licensed features and capacities before expiration. Restarting SWMA after expiration will incur a higher charge for that renewal.

These programs have a one-time license charge for use of the program and an annual renewable charge for the enhanced support that includes telephone assistance (voice support for defects during normal business hours), as well as access to updates, releases, and versions of the program as long as support is in effect.

### ***License Information form number***

GI13-2841 License Information for:

- 5641-VC7 - IBM Storwize Family SAN Volume Controller Software V7.2
- 5641-CP7 - IBM Storwize Family SAN Volume Controller Compression Software V7.2
- 5639-VM7 - IBM Storwize Family V7000 Software V7.2
- 5639-EV7 - IBM Storwize Family V7000 External Virtualization Software V7.2
- 5639-RM7 - IBM Storwize Family V7000 Remote Mirroring Software V7.2
- 5639-CP7 - IBM Storwize Family V7000 Compression Software V7.2

GI13-2809 License information for:

- 5639-NZ7 - IBM Storwize Family Software for Flex System V7000 V7.2
- 5639-EX7 - IBM Flex System V7000 External Virtualization Software V7.2
- 5639-RM7 - IBM Flex System V7000 Remote Mirroring Software V7.2
- 5639-CM7 - IBM Flex System V7000 Real-time Compression Software V7.2

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 (1) for programs acquired under the IBM International Passport Advantage offering, this term applies only to your first acquisition of the program and (2) 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**

Yes, and through the Passport Advantage website at

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

#### **Usage restriction**

Yes

SVC standard software (5641-VC7):

This program (5641-VC7) is licensed on a per-terabyte (with cumulative tiers) site-wide capacity basis. (Refer to the [Ordering information](#) section for information on charges for this program.) Users may only install this program on IBM System Storage SAN Volume Controller 2145-CF8, 2145-8G4, 2145-8A4, 2145-8F4, and 2145-8F2 Storage Engines, or subsequent IBM replacements of these.

Customers are licensed to use this program only to manage storage capacity within a single site, and only for the amount of storage capacity within that site for which they have received proper authorization from IBM . Customers must obtain a separate license for any additional sites within which they want to use SAN Volume Controller Software V7 (5641-VC7) and obtain separate capacity authorizations for each such site. The 5641-VC7 site license subsumes and supersedes all individual 5639-VC1, 5639-VC2, 5639-VCT, 5639-VC3, 5639-VC4, 5639-VC5, and 5639-VC6 licenses previously in effect at that site.

A customer's right to use the IBM FlashCopy for SAN Volume Controller and Metro/Global Mirror for SAN Volume Controller features of this program is also limited to the amount of authorizations obtained from IBM . The authorizations for FlashCopy and for Metro/Global Mirror cannot exceed the total capacity authorization for the amount of managed storage on all clusters within the site. Use of FlashCopy features requires license authorizations for only the FlashCopy sources, not the targets.

Use of Metro/Global Mirror features requires license authorizations for both the Metro/Global Mirror source and target capacities in use. Use of the Metro/Global Mirror feature between clusters located in different sites requires separate authorization for each site.

This program is only supported for use with host servers, storage sub-systems, and SAN configurations identified by IBM as being supported for attachment to the IBM System Storage SAN Volume Controller. This program is provided together with code provided under separate license agreements, including, but not limited to, open source license agreements.

## Storwize V7000

The following Program Unique Terms apply. This program is licensed for use with the IBM Storwize V7000 system with which the program was delivered, and only to manage the capacity specified in the proof of entitlement document for that license. A separate license is required for each IBM Storwize V7000 storage enclosure. The following paragraph titled "Disabling device" applies to the use of the IBM Storwize V7000 Software components. The term "Program" in these paragraphs shall mean the IBM Storwize V7000 Software components.

**Disabling device:** The Program may include a disabling device that will prevent certain features from being used. You will not tamper with such disabling device or otherwise change the Program.

**Transferability:** The Program 5639-VM7 is nontransferable between IBM Storwize V7000 systems and is only to be used on the IBM Storwize V7000 system for which it was purchased. If the system is transferred to a new owner, the program license transfers with the system. However, Software Maintenance does not transfer, and a new maintenance agreement must be purchased by the new owner.

For additional information, refer to the License Information document that is available on the IBM Software License Agreement website

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

### **Software Subscription and Support applies**

Yes. Software Subscription and Support (also referred to as Software Maintenance), is now included in the Passport Advantage Agreement. Installation and technical support for the products announced in this announcement is provided by the Software Subscription and Support offering of the IBM International Passport Advantage Agreement. This fee service enhances customer productivity by providing voice or electronic access into the IBM support organizations.

IBM includes one year of Software Subscription and Support with the initial license acquisition of each program acquired. The initial period of Software Subscription and Support can be extended by the purchase of a renewal option.

While your Software Subscription and Support 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 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 additional information about the Passport Advantage Agreement, visit the Passport Advantage website at

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

All distributed software licenses include Software Subscription and Support 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.

**Variable charges apply**

No

**Educational allowance available**

Yes. When ordering through the program number process, a 15% education allowance applies to qualified education institution customers.

Education software allowance program applies when ordering through the program number process.

For the part number ordering process, special education prices are available for qualified customers through Passport Advantage .

**ESAP available**

Yes, to qualified customers.

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**Statement of good security practices**

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IT system security involves protecting systems and information through prevention, detection, and response to improper access from within and outside your enterprise. Improper access can result in information being altered destroyed or misappropriated or can result in misuse of your systems to attack others. Without a comprehensive approach to security, no IT system or product should be considered completely secure and no single product or security measure can be completely effective in preventing improper access. IBM systems and products are designed to be part of a comprehensive security approach, which will necessarily involve additional operational procedures, and may require other systems, products, or services to be most effective. IBM does not warrant that systems and products are immune from the malicious or illegal conduct of any party.

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**Prices**

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**Business Partner information**

If you are an IBM Business Partner -- Distributor for Workstation Software acquiring products from IBM , you may link to Passport Advantage Online for resellers where you can obtain Business Partner pricing information. An IBM ID and password are required.

<https://www.ibm.com/software/howtobuy/passportadvantage/paoreseller/emea/channelannouncement>

**Passport Advantage**

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

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

Contact your local IBM representative for the applicable charges.

To order a basic license, specify the program number and the one-time charge feature number in the quantity desired.

The program is available via electronic download only.

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 Value Plus. Additional information is also available at

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

## IBM Global Financing

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IBM Global Financing offers competitive financing to credit-qualified customers to assist them in acquiring IT solutions. Offerings include financing for IT acquisition, including hardware, software, and services, from both IBM and other manufacturers or vendors. Offerings (for all customer segments: small, medium, and large enterprise), rates, terms, and availability can vary by country. Contact your local IBM Global Financing organization or visit

<http://www.ibm.com/financing>

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Financing from IBM Global Financing helps you preserve cash and credit lines, enables more technology acquisition within current budget limits, permits accelerated implementation of economically attractive new technologies, offers payment and term flexibility, and can help match project costs to projected benefits. Financing is available worldwide for credit-qualified customers.

For more financing information, visit

<http://www.ibm.com/financing>

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## Announcement countries

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All European, Middle Eastern, and African countries, except Iran, Sudan, and Syria.

### **Trademarks**

Real-time Compression and IBM Flex System are trademarks of IBM Corporation in the United States, other countries, or both.

IBM, Storwize, FlashCopy, Easy Tier, Tivoli, System Storage, Passport Advantage, Express and Global Technology Services are registered trademarks of IBM Corporation in the United States, other countries, or both.

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<http://www.ibm.com/planetwide/>