



IBM Storwize V5000 Software version 7 delivers a rich set of functional capabilities and optional features for Storwize V5000 hardware

Table of contents

1 Overview	6 Publications
2 Key prerequisites	7 Technical information
2 Planned availability date	9 Ordering information
2 Description	17 Terms and conditions
5 Product positioning	20 Prices
6 Program number	28 Order now

At a glance

IBM® Storwize® V5000 is the newest addition to the Storwize family of disk systems. Leveraging IBM Storwize V7000 and IBM SAN Volume Controller (SVC) functions and management tools, Storwize V5000 delivers simplicity, efficiency, and flexibility to meet the needs of midsize organizations.

IBM Storwize Family Software for Storwize V5000 version 7 provides the following functional capabilities for the Storwize V5000 hardware:

- Rich set of standard functions, including virtualized internal storage, thin provisioning, data migration, two-way clustering, and an intuitive, web-based GUI
- Optional functions including FlashCopy®, Easy Tier®, remote mirroring, and virtualized external storage

For additional information on Storwize V5000 hardware, refer to Hardware Announcement [113-159](#), dated October 08, 2013, IBM Storwize V5000 offers simplicity, efficiency, and performance for midsize organizations.

For ordering, contact your IBM representative, an IBM Business Partner, or IBM Americas Call Centers at 800-IBM-CALL (Reference: YE001).

Overview

IBM Storwize V5000 version 7 provides the following functional capabilities for the Storwize V5000 hardware system:

- RAID levels 0, 1, 5, 6, and 10 for data protection
- Virtualization of internal storage to enable rapid, flexible provisioning and simple configuration changes
- Thin provisioning for improved storage utilization
- One-way data migration to easily move data onto the Storwize V5000 system
- Two-way system clustering for greater capacity and performance growth potential
- Innovative and easy to use management capabilities with an embedded GUI
- Extensive interoperability support, including most major server platforms and operating systems

Storwize V5000 software also offers a rich set of optional features:

- FlashCopy to create instant copies of data for backup or application testing
- IBM System Storage® Easy Tier for automatic migration of frequently accessed data from disk drives to high performing SSDs
- Remote mirroring for data replication between systems at different locations through Metro Mirror and Global Mirror functions
- Virtualization of external storage to improve administrator productivity and boost storage utilization, while also enhancing and extending the value of an existing storage asset

Key prerequisites

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.

Planned availability date

- October 11, 2013: Storwize V5000 V7.1 software will be available for use on Storwize V5000 hardware. This does not inhibit orders of the Storwize V5000 V7.2 software product IDs (such as 5639-ST7) which must be purchased for entitled use of any Storwize V5000 version 7 software code release, whether V7.1 or V7.2.
- November 29, 2013: Storwize V5000 V7.2 software will be available.

Refer to the [Reference information](#) section for details.

Description

IBM Storwize Family Software for Storwize V5000 version 7 provides enhanced capabilities and options for Storwize V5000 hardware.

Rich set of functional capabilities

As a member of the Storwize family, Storwize V5000 leverages IBM Storwize V7000 and IBM SVC functions and management tools. All Storwize V5000 functional capabilities are provided through the IBM Storwize Family Software for Storwize V5000.

The following functions are delivered with the Storwize V5000 base software license:

- **RAID levels 0, 1, 5, 6, and 10:** Delivers the flexibility to choose the level of data protection required.
- **Virtualization of internal storage:** Enables rapid, flexible provisioning and simple configuration changes.
- **Thin provisioning:** Optimizes efficiency by allocating disk storage space in a flexible manner among multiple users, based on the minimum space required by each user at any given time. With thin provisioning, applications use only the space they are actually using, not the total space that has been allocated to them.
- **Data migration:** Enables easy and nondisruptive move volumes from another storage system onto the Storwize V5000 system using Fibre Channel connectivity.
- **Two-way system clustering:** Joins two systems together, where a system is a V5000 Control Enclosure and all attached expansion enclosures, so they can be operated and managed as a single system.
- **Simple and easy to use GUI:** Enables storage to be quickly deployed and efficiently managed. The GUI runs on the Storwize V5000 system, so there is no need for a separate console. All you need to do is point your web browser to the

system. It is based on the Storwize V7000 management GUI with a similar look and feel.

The following optional licensed features are offered with the Storwize V5000 software:

- **FlashCopy** : Enables you to create copies of data for backup, parallel processing, testing, and development, and have the copies available almost immediately.
- **Easy Tier storage tiering**: Helps optimize storage use with data location to improve system performance, reduce costs, and simplify management. Easy Tier automatically and dynamically moves frequently accessed data to SSDs in the system, resulting in SSD performance without manually creating and managing storage tier policies. Easy Tier makes it easy and economical to deploy SSDs in the environment.
- **Remote Mirroring**: Provides system-based data replication using either synchronous or asynchronous data transfers over Fibre Channel communication links:
 - Metro Mirror is designed to maintain a fully synchronized copy at metropolitan distances (up to 300 km).
 - Global Mirror is designed to operate asynchronously and helps maintain a copy at much greater distances (up to 8000 km).
 - Both functions are designed to support VMware Site Recovery Manager to help speed disaster recovery.
 - For ultimate flexibility, Storwize V5000 remote mirroring is designed to interoperate with any other IBM Storwize family system, including Storwize V7000, Storwize V3700, IBM FlexSystem V7000, and IBM SVC.
- **External storage virtualization**: Allows Storwize V5000 to manage capacity in other disk systems. When Storwize V5000 virtualizes a disk system, its capacity becomes part of the Storwize V5000 system and is managed in the same way as capacity on internal drives within Storwize V5000. Capacity in external disk systems inherits all the functional richness and ease of use of the Storwize V5000.

IBM Storwize Family Software for Storwize V5000 Base Software (5639-ST7)

Each IBM Storwize V5000 Control Enclosure (2077-12C/24C, 2078-12C/24C) and each IBM Storwize V5000 Expansion Enclosure (2077-12E/24E, 2078-12E/24E) uses the IBM Storwize Family Software for Storwize V5000 Base Software, 5639-ST7. A quantity of one 5639-ST7 IBM Storwize Family Software for Storwize V5000 Base Software license is required for each enclosure, whether control or expansion enclosure. For example, an IBM Storwize V5000 order consisting of one control enclosure and three expansion enclosures requires a quantity of four enclosures of the IBM Storwize Family Software for Storwize V5000 Base Software, 5639-ST7.

IBM Storwize Family Software for Storwize V5000 External Virtualization feature code

Each IBM Storwize V5000 Control Enclosure (2077-12C/24C, 2078-12C/24C) has the ability to attach and manage external storage devices on the SAN in the same way as the Storwize V7000. To authorize use of this function, you must license the IBM Storwize Family Software for Storwize V5000 External Virtualization feature code. You will need to license the number of storage enclosures attached externally to the IBM Storwize V5000. IBM Storwize V5000 Control Enclosures (2077-12C/24C, 2078-12C/24C) and each IBM Storwize V5000 Expansion Enclosure (2077-12E/24E, 2078-12E/24E) are not included in this External Virtualization license.

A storage enclosure externally managed by IBM Storwize V5000 is defined as an independently powered, channel-attached device that stores data on magnetic disks or SSDs, such as disk controllers and their respective expansion units, each constituting separate enclosures. Therefore, an enclosure can be either the main controller housing disk (or solid state) drives or the expansion chassis that house additional disk (or solid state) drives for the purpose of expanding the total capacity of the storage system. If there exists any confusion for an external

storage enclosure that does not conform to this definition, consult an IBM sales representative for an equivalent measure based on a disk drive count.

For example, adding an IBM DS5020 consisting of two enclosures to an IBM Storwize V5000 consisting of one control enclosure and three expansion enclosures, then you will need a license for two enclosures of the IBM Storwize Family Software for Storwize V5000 External Virtualization feature code. This feature code quantity can be applied against any one or more of the IBM Storwize Family Software for Storwize V5000 Base Software (5639-ST7) licensed products.

IBM Storwize Family Software for Storwize V5000 Remote Mirroring feature code

Rather than purchasing features for IBM Storwize Family Software for Storwize V5000 Remote Mirroring for every licensed enclosure (internal and external) managed by the IBM Storwize V5000 Disk System at both the primary and the secondary systems, the following licensing rules apply:

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

This feature code quantity can be applied against any one or more of the IBM Storwize Family Software for Storwize V5000 Base Software (5639-ST7) licensed products.

The following are examples of how to license Remote Mirroring Software features under these licensing rules:

- **Scenario 1:** The primary system is a Storwize V5000 with four enclosures and nothing externally virtualized, therefore it has four 5639-ST7 licenses. The secondary system is a Storwize V5000 with two enclosures and nothing externally virtualized, therefore it has two 5639-ST7 licenses. The Storwize V5000 Remote Mirroring licensing would be two Remote Mirroring features licensed for the primary system plus two Remote Mirroring features licensed for the secondary system, for a total of four Remote Mirroring features required.
- **Scenario 2:** The primary system is a Storwize V5000 with one enclosure managing a DS5020 consisting of three enclosures, therefore it has one 5639-ST7 license plus three External Virtualization features licensed. The secondary system is a Storwize V5000 with three enclosures and nothing externally virtualized, therefore it has three 5639-ST7 licenses. The Storwize V5000 Remote Mirroring licensing would be three Remote Mirroring features licensed for the primary system plus three Remote Mirroring features licensed for the secondary system, for a total of six Remote Mirroring features required.
- **Scenario 3:** There are three primary systems replicating to a central disaster recovery system. The three primary systems are as follows:
 - A one-enclosure Storwize V5000 with nothing externally virtualized, therefore it has one 5639-ST7 license
 - A one-enclosure Storwize V5000 managing a DS5020 consisting of one enclosure, therefore it has one 5639-ST7 license plus one External Virtualization feature licensed
 - A one-enclosure Storwize V5000 with nothing externally virtualized, therefore it has one 5639-ST7 license

The central disaster recovery system is a Storwize V5000 with five enclosures and nothing externally virtualized, therefore it has five 5639-ST7 licenses. The Storwize V5000 Remote Mirroring licensing would be a sum of four Remote Mirroring features licensed for the primary systems plus four Remote Mirroring features licensed for

the central disaster recovery system, for a total of eight Remote Mirroring features required.

IBM Storwize Family Software for Storwize V5000 Easy Tier feature code

To authorize use of Easy Tier capabilities of the IBM Storwize V5000, you must purchase IBM Storwize Family Software for Storwize V5000 Easy Tier features for each licensed enclosure managed by the IBM Storwize V5000 Disk System, including each internal enclosure licensed with the IBM Storwize Family Software for Storwize V5000 Base Software (5639-ST7) and each external enclosure licensed with the IBM Storwize Family Software for Storwize V5000 External Virtualization features. This feature code quantity can be applied against any one or more of the IBM Storwize Family Software for Storwize V5000 Base Software (5639-ST7) licensed products.

For example, if you have a DS5020 consisting of two enclosures managed by an IBM Storwize V5000 consisting of one control enclosure and three expansion enclosures, in order to authorize Easy Tier for this configuration you will need to license a quantity of six enclosures of the IBM Storwize Family Software for Storwize V5000 Easy Tier feature.

IBM Storwize Family Software for Storwize V5000 FlashCopy feature code

To authorize use of FlashCopy capabilities of the IBM Storwize V5000, you must purchase IBM Storwize Family Software for Storwize V5000 FlashCopy features for each licensed enclosure managed by the IBM Storwize V5000 Disk System. This includes each internal enclosure licensed with the IBM Storwize Family Software for Storwize V5000 Base Software (5639-ST7) and each external enclosure licensed with the IBM Storwize Family Software for Storwize V5000 External Virtualization features. This feature code quantity can be applied against any one or more of the IBM Storwize Family Software for Storwize V5000 Base Software (5639-ST7) licensed products.

For example, if you have a DS5020 consisting of two enclosures managed by an IBM Storwize V5000 consisting of one control enclosure and three expansion enclosures, in order to authorize FlashCopy for this configuration you will need to license a quantity of six enclosures of the IBM Storwize Family Software for Storwize V5000 FlashCopy feature.

For more information on interoperability, visit

<http://www.ibm.com/storage/support/storwize/v5000>

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

Section 508 of the US Rehabilitation Act

IBM Storwize Family Software for Storwize V5000 V7 is capable, as of October 11, 2013, when used in accordance with IBM's associated documentation, of satisfying the applicable requirements of Section 508 of the Rehabilitation Act provided that any assistive technology used with the product properly interoperates with it. A US Section 508 Voluntary Product Accessibility Template (VPAT) can be requested on the following website

http://www-03.ibm.com/able/product_accessibility/index.html

Product positioning

IBM Storwize V5000 offers simplicity, efficiency, and performance for midsize organizations.

Reference information

For information on Storwize Family Software V7.2, refer to Software Announcement [213-482](#), dated October 08, 2013 .

For information on Storwize V5000 hardware, refer to Hardware Announcement [113-159](#), dated October 08, 2013 .

Program number

Program number	VRM	Program name
5639-ST7	7.2	IBM Storwize Family Software for storwize v5000

Product identification number

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 afl	5639-S15 reg 5639-S16 renewal 5639-S17 afl

Maintenance 2 year PID number	Maintenance 4 year PID number	Maintenance 5 year PID number
5639-S18 reg	5639-S19 reg	5639-S20 reg

Business Partner information

If you are a Direct Reseller - System Reseller acquiring products from IBM , you may link directly to Business Partner information for this announcement. A PartnerWorld® ID and password are required (use IBM ID).

<https://www.ibm.com/partnerworld/mem/sla.jsp?num=213-407>

Education support

General information about classroom courses, training and schedules can be found at

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

Offering Information

Product information is available via the Offering Information website

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

Publications

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

Title	Order number
IBM Storwize v5000 Quick Installation Guide	GI13-2861-00

IBM Storwize V5000 SC27-5923-00
Installation Poster

IBM Storwize V5000 Read GI13-2860-00
First Flyer

IBM Systems Safety Notices G229-9054-06

Additional copies of the above listed publications will be available on October 11, 2013.

Use the following options to order or download additional copies:

- 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>
- Contact your IBM representative.

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 (in the US) or customer number for 20 countries. A large number of publications are available online in various file formats, and they can all be downloaded by all countries, free of charge.

Technical information

Specified operating environment

Hardware requirements

This program 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 IBM Storwize V5000 Support website

- <http://www.ibm.com/storage/support/storwize/v5000>

For information on the IBM Storwize V5000 hardware, see the announcement listed in the [Reference information](#) section.

Software requirements

For all current storage systems and host environments supported, refer to the support website

<http://www.ibm.com/storage/support/storwize/v5000>

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 IBM Storwize V5000 Support website at

<http://www.ibm.com/storage/support/storwize/v5000>

Limitations

This program operates on specified IBM Storwize V5000 hardware only. For hardware-associated limitations, refer to the announcement listed in the [Reference information](#) section.

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

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

Planning information

Planning considerations required for Storwize V5000 apply. Refer to the announcement listed in the [Reference information](#) section and to the Storwize V5000 information center at the IBM Support website for publications

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

Customers with 5639-ST7 licenses are responsible to ensure the total enclosures managed are within license entitlement.

Customer responsibilities

Planning for and provision of the power and environmental support required for IBM Storwize V5000 is a customer responsibility. Refer to the announcement listed in the [Reference information](#) section, or to the Storwize V5000 information center at the IBM Support website for publications

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

Service support for the server and its operating system which houses the browser from which the IBM Storwize V5000 console is accessed is a customer responsibility (and is separately ordered).

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 for each function.

Packaging

New order packaging

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. For code updates, refer to the IBM Storwize V5000 product support website at

<http://www.ibm.com/storage/support/storwize/v5000>

License Information documents for IBM Storwize Family Software for Storwize V5000 programs ship with the hardware on which they are preloaded.

The following are shipped with each new IBM Storwize V5000 hardware order:

- IBM Agreement for Acquisition of Support and Addendum for Support, Z125-6011
- License Information for IBM System Storage SAN Volume Controller and IBM Storwize V7000 and V5000 Version 7, LC23-5059
- License Information for IBM System Storage SAN Volume Controller and IBM Storwize V7000 and V5000 Information Center Version 7, LC23-5098
- License Information for IBM System Storage SAN Volume Controller Storage Replication Adapter for VMware SRM, GA76-0431

The paid invoice acts as Proof of Entitlement (PoE) for all orders of IBM Storwize Family Software for Storwize V5000 V7. All associated media listed in the [Publications](#) section are also shipped with the new hardware order. One media set per IBM Storwize V5000 Disk System will be shipped. Refer to the hardware announcement 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

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.

Software Services

IBM Software Services has the breadth, depth, and reach to manage your services needs. You can leverage the deep technical skills of our lab-based, software services team and the business consulting, project management, and infrastructure expertise of our IBM Global Services team. Also, we extend our IBM Software Services reach through IBM Business Partners to provide an extensive portfolio of capabilities. Together, we provide the global reach, intellectual capital, industry insight, and technology leadership to support a wide range of critical business needs.

To learn more about IBM Software Services or to contact a Software Services sales specialist, visit

<http://www.ibm.com/software/sw-services/>

Ordering information

License metric definitions

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.

Program name: IBM Storwize Family Software for Storwize V5000
PID: 5639-ST7

Use-based OTC with One-year Software Maintenance

Description	Program number	Feature number
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IBM Storwize Family Software 5639-ST7 0002
 for Storwize V5000
 Per Storage Device
 with 1 Year SW Maintenance

IBM Storwize Family Software 0003
 for Storwize V5000
 FlashCopy
 Per Storage Device
 with 1 Year SW Maintenance

IBM Storwize Family Software 0004
 for Storwize V5000
 Remote Mirror
 Per Storage Device
 with 1 Year SW Maintenance

IBM Storwize Family Software 0005
 for Storwize V5000
 Easy Tier
 Per Storage Device
 with 1 Year SW Maintenance

IBM Storwize Family Software 0001
 for Storwize V5000
 External virtualization
 Per Storage Device
 with 1 Year SW Maintenance

This software license includes Software Maintenance, previously referred to as Software Subscription and Technical Support.

Program name: IBM Storwize Family Software for Storwize V5000
 Software maintenance - One-Year Registration / Renewal

PID: 5639-S13

One-year Registration and Renewal

Description	Program number	Feature number
IBM Storwize Family Software for Storwize V5000 Software Maintenance One-year Registration and Renewal One-time charge Per Storage Device	5639-S13	0021

One-year No Charge Registration

Description	Program number	Feature number
IBM Storwize Family Software for Storwize V5000 Software Maintenance One-year NC Registration Per Storage Device	5639-S13	0022

One-year Registration and Renewal

Program	Feature
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Description	number	number
IBM Storwize Family Software for Storwize V5000 FlashCopy Software Maintenance One-year Registration and Renewal One-time charge Per Storage Device	5639-S13	0023

One-year No Charge Registration

Description	Program number	Feature number
IBM Storwize Family Software for Storwize V5000 FlashCopy Software Maintenance One-year NC Registration Per Storage Device	5639-S13	0024

One-year Registration and Renewal

Description	Program number	Feature number
IBM Storwize Family Software for Storwize V5000 Remote Mirror Software Maintenance One-year Registration and Renewal One-time charge Per Storage Device	5639-S13	0025

One-year No Charge Registration

Description	Program number	Feature number
IBM Storwize Family Software for Storwize V5000 Remote Mirror Software Maintenance One-year NC Registration Per Storage Device	5639-S13	0026

One-year Registration and Renewal

Description	Program number	Feature number
IBM Storwize Family Software for Storwize V5000 Easy Tier Software Maintenance One-year Registration and Renewal One-time charge Per Storage Device	5639-S13	0027

One-year No Charge Registration

Description	Program number	Feature number
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IBM Storwize Family Software 5639-S13 0028
 for Storwize V5000
 Easy Tier
 Software Maintenance
 One-year NC Registration
 Per Storage Device

One-year Registration and Renewal

Description	Program number	Feature number
IBM Storwize Family Software for Storwize V5000 External Virtualization Software Maintenance One-year Registration and Renewal One-time charge Per Storage Device	5639-S13	0029

One-year No Charge Registration

Description	Program number	Feature number
IBM Storwize Family Software for Storwize V5000 External Virtualization Software Maintenance One-year NC Registration Per Storage Device	5639-S13	0030

Program name: IBM Storwize Family Software for Storwize V5000
 Software maintenance - One-Year After License
 PID: 5639-S14

Use-based OTC with One-year After License Software Maintenance

Description	Program number	Feature number
IBM Storwize Family Software for Storwize V5000 Software Maintenance One-year After License One-time charge Per Storage Device	5639-S14	0006
IBM Storwize Family Software for Storwize V5000 FlashCopy Software Maintenance One-year After License One-time charge Per Storage Device		0007
IBM Storwize Family Software for Storwize V5000 Remote Mirror Software Maintenance One-year After License One-time charge Per Storage Device		0008

IBM Storwize Family Software 0009

for Storwize V5000
 Easy Tier
 Software Maintenance
 One-year After License
 One-time charge
 Per Storage Device

IBM Storwize Family Software 0010
 for Storwize V5000
 External Virtualization
 Software Maintenance
 One-year After License
 One-time charge
 Per Storage Device

Program name: IBM Storwize Family Software for Storwize V5000
 Software maintenance - Three-Year Registration
 PID: 5639-S15

Use-based OTC with Three-year Reg Software Maintenance

Description	Program number	Feature number
IBM Storwize Family Software for Storwize V5000 Software Maintenance Three-year Registration One-time charge Per Storage Device	5639-S15	0006
IBM Storwize Family Software for Storwize V5000 FlashCopy Software Maintenance Three-year Registration One-time charge Per Storage Device		0007
IBM Storwize Family Software for Storwize V5000 Remote Mirror Software Maintenance Three-year Registration One-time charge Per Storage Device		0008
IBM Storwize Family Software for Storwize V5000 Easy Tier Software Maintenance Three-year Registration One-time charge Per Storage Device		0009
IBM Storwize Family Software for Storwize V5000 External Virtualization Software Maintenance Three-year Registration One-time charge Per Storage Device		0010

Program name: IBM Storwize Family Software for Storwize V5000

Software maintenance - Three-Year Renewal
PID: 5639-S16

Use-based OTC with Three-year Renewal Software Maintenance

Description	Program number	Feature number
IBM Storwize Family Software for Storwize V5000 Software Maintenance Three-year Renewal One-time charge Per Storage Device	5639-S16	0006
IBM Storwize Family Software for Storwize V5000 FlashCopy Software Maintenance Three-year Renewal One-time charge Per Storage Device		0007
IBM Storwize Family Software for Storwize V5000 Remote Mirror Software Maintenance Three-year Renewal One-time charge Per Storage Device		0008
IBM Storwize Family Software for Storwize V5000 Easy Tier Software Maintenance Three-year Renewal One-time charge Per Storage Device		0009
IBM Storwize Family Software for Storwize V5000 External Virtualization Software Maintenance Three-year Renewal One-time charge Per Storage Device		0010

Program name: IBM Storwize Family Software for Storwize V5000
Software maintenance - Three-Year After license
PID: 5639-S17

Use-based OTC with Three-year After License Software Maintenance

Description	Program number	Feature number
IBM Storwize Family Software for Storwize V5000 Software Maintenance Three-year After license One-time charge Per Storage Device	5639-S17	0006
IBM Storwize Family Software		0007

for Storwize V5000
FlashCopy
Software Maintenance
Three-year After license
One-time charge
Per Storage Device

IBM Storwize Family Software 0008
for Storwize V5000
Remote Mirror
Software Maintenance
Three-year After license
One-time charge
Per Storage Device

IBM Storwize Family Software 0009
for Storwize V5000
Easy Tier
Software Maintenance
Three-year After license
One-time charge
Per Storage Device

IBM Storwize Family Software 0010
for Storwize V5000
External Virtualization
Software Maintenance
Three-year After license
One-time charge
Per Storage Device

Program name: IBM Storwize Family Software for Storwize V5000
Software maintenance - Two-Year Registration
PID: 5639-S18

Use-based OTC with Two-year Reg Software Maintenance

Description	Program number	Feature number
IBM Storwize Family Software for Storwize V5000 Software Maintenance Two-year Registration One-time charge Per Storage Device	5639-S18	0006
IBM Storwize Family Software for Storwize V5000 FlashCopy Software Maintenance Two-year Registration One-time charge Per Storage Device		0007
IBM Storwize Family Software for Storwize V5000 Remote Mirror Software Maintenance Two-year Registration One-time charge Per Storage Device		0008
IBM Storwize Family Software for Storwize V5000		0009

Easy Tier
Software Maintenance
Two-year Registration
One-time charge
Per Storage Device

IBM Storwize Family Software 0010
for Storwize V5000
External Virtualization
Software Maintenance
Two-year Registration
One-time charge
Per Storage Device

Program name: IBM Storwize Family Software for Storwize V5000
Software maintenance - Four-Year Registration
PID: 5639-S19

Use-based OTC with Four-year Reg Software Maintenance

Description	Program number	Feature number
IBM Storwize Family Software for Storwize V5000 Software Maintenance Four-year Registration One-time charge Per Storage Device	5639-S19	0005
IBM Storwize Family Software for Storwize V5000 FlashCopy Software Maintenance Four-year Registration One-time charge Per Storage Device		0006
IBM Storwize Family Software for Storwize V5000 Remote Mirror Software Maintenance Four-year Registration One-time charge Per Storage Device		0007
IBM Storwize Family Software for Storwize V5000 Easy Tier Software Maintenance Four-year Registration One-time charge Per Storage Device		0008
IBM Storwize Family Software for Storwize V5000 External Virtualization Software Maintenance Four-year Registration One-time charge Per Storage Device		0009

Program name: IBM Storwize Family Software for Storwize V5000
Software maintenance - Five-Year Registration

PID: 5639-S20

Use-based OTC with Five-year Reg Software Maintenance

Description	Program number	Feature number
IBM Storwize Family Software for Storwize V5000 Software Maintenance Five-year Registration One-time charge Per Storage Device	5639-S20	0016
IBM Storwize Family Software for Storwize V5000 FlashCopy Software Maintenance Five-year Registration One-time charge Per Storage Device		0017
IBM Storwize Family Software for Storwize V5000 Remote Mirror Software Maintenance Five-year Registration One-time charge Per Storage Device		0018
IBM Storwize Family Software for Storwize V5000 Easy Tier Software Maintenance Five-year Registration One-time charge Per Storage Device		0019
IBM Storwize Family Software for Storwize V5000 External Virtualization Software Maintenance Five-year Registration One-time charge Per Storage Device		0020

Charge metric

Program name	Part number or PID number	Charge metric
IBM Storwize Family Software for Storwize V5000	5639-ST7	Per Storage Device

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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.

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

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License Information form number

The program's License Information will be available for review on the IBM Software License Agreement website

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

Limited warranty applies

Yes

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

Usage restriction

Yes

The following Program Unique Terms apply. This program is licensed for use with the IBM Storwize V5000 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 V5000 storage enclosure. The following paragraph titled "Disabling device" applies to the use of the IBM Storwize V5000 Software components. The term "Program" in these paragraphs shall mean the IBM Storwize V5000 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 is non-transferable between IBM Storwize V5000 systems and is only to be used on the IBM Storwize V5000 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. 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 up to a total of five years from date of acquisition may be elected.

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<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.

System i® Software Maintenance applies

No

Variable charges apply

No

Educational allowance available

Yes. A 15% education allowance applies to qualified education institution customers.

Statement of good security practices

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.

Prices

Program name: IBM Storwize Family Software for Storwize V5000
 PID: 5639-ST7

Use-based OTC with One-year Software Maintenance

Description	Program number	Feature number
IBM Storwize Family Software for Storwize V5000 Per Storage Device with 1 Year SW Maintenance	5639-ST7	0002
IBM Storwize Family Software for Storwize V5000 FlashCopy Per Storage Device with 1 Year SW Maintenance		0003
IBM Storwize Family Software for Storwize V5000 Remote Mirror Per Storage Device with 1 Year SW Maintenance		0004
IBM Storwize Family Software for Storwize V5000 Easy Tier Per Storage Device with 1 Year SW Maintenance		0005
IBM Storwize Family Software for Storwize V5000 External virtualization Per Storage Device with 1 Year SW Maintenance		0001

This software license includes Software Maintenance, previously referred to as Software Subscription and Technical Support.

Program name: IBM Storwize Family Software for Storwize V5000
 Software maintenance - One-Year Registration / Renewal

PID: 5639-S13

One-year Registration and Renewal

Description	Program number	Feature number
IBM Storwize Family Software for Storwize V5000 Software Maintenance One-year Registration and	5639-S13	0021

Renewal
One-time charge
Per Storage Device

One-year No Charge Registration

Description	Program number	Feature number
IBM Storwize Family Software for Storwize V5000 Software Maintenance One-year NC Registration Per Storage Device	5639-S13	0022

One-year Registration and Renewal

Description	Program number	Feature number
IBM Storwize Family Software for Storwize V5000 FlashCopy Software Maintenance One-year Registration and Renewal One-time charge Per Storage Device	5639-S13	0023

One-year No Charge Registration

Description	Program number	Feature number
IBM Storwize Family Software for Storwize V5000 FlashCopy Software Maintenance One-year NC Registration Per Storage Device	5639-S13	0024

One-year Registration and Renewal

Description	Program number	Feature number
IBM Storwize Family Software for Storwize V5000 Remote Mirror Software Maintenance One-year Registration and Renewal One-time charge Per Storage Device	5639-S13	0025

One-year No Charge Registration

Description	Program number	Feature number
IBM Storwize Family Software for Storwize V5000 Remote Mirror	5639-S13	0026

Software Maintenance
One-year NC Registration
Per Storage Device

One-year Registration and Renewal

Description	Program number	Feature number
IBM Storwize Family Software for Storwize V5000 Easy Tier Software Maintenance One-year Registration and Renewal One-time charge Per Storage Device	5639-S13	0027

One-year No Charge Registration

Description	Program number	Feature number
IBM Storwize Family Software for Storwize V5000 Easy Tier Software Maintenance One-year NC Registration Per Storage Device	5639-S13	0028

One-year Registration and Renewal

Description	Program number	Feature number
IBM Storwize Family Software for Storwize V5000 External Virtualization Software Maintenance One-year Registration and Renewal One-time charge Per Storage Device	5639-S13	0029

One-year No Charge Registration

Description	Program number	Feature number
IBM Storwize Family Software for Storwize V5000 External Virtualization Software Maintenance One-year NC Registration Per Storage Device	5639-S13	0030

Program name: IBM Storwize Family Software for Storwize V5000
Software maintenance - One-Year After License
PID: 5639-S14

Use-based OTC with One-year After License Software Maintenance

Description	Program number	Feature number
IBM Storwize Family Software for Storwize V5000 Software Maintenance One-year After License One-time charge Per Storage Device	5639-S14	0006
IBM Storwize Family Software for Storwize V5000 FlashCopy Software Maintenance One-year After License One-time charge Per Storage Device		0007
IBM Storwize Family Software for Storwize V5000 Remote Mirror Software Maintenance One-year After License One-time charge Per Storage Device		0008
IBM Storwize Family Software for Storwize V5000 Easy Tier Software Maintenance One-year After License One-time charge Per Storage Device		0009
IBM Storwize Family Software for Storwize V5000 External Virtualization Software Maintenance One-year After License One-time charge Per Storage Device		0010

Program name: IBM Storwize Family Software for Storwize V5000
Software maintenance - Three-Year Registration
PID: 5639-S15

Use-based OTC with Three-year Reg Software Maintenance

Description	Program number	Feature number
IBM Storwize Family Software for Storwize V5000 Software Maintenance Three-year Registration One-time charge Per Storage Device	5639-S15	0006
IBM Storwize Family Software for Storwize V5000 FlashCopy Software Maintenance Three-year Registration One-time charge Per Storage Device		0007

IBM Storwize Family Software 0008
 for Storwize V5000
 Remote Mirror
 Software Maintenance
 Three-year Registration
 One-time charge
 Per Storage Device

IBM Storwize Family Software 0009
 for Storwize V5000
 Easy Tier
 Software Maintenance
 Three-year Registration
 One-time charge
 Per Storage Device

IBM Storwize Family Software 0010
 for Storwize V5000
 External Virtualization
 Software Maintenance
 Three-year Registration
 One-time charge
 Per Storage Device

Program name: IBM Storwize Family Software for Storwize V5000
 Software maintenance - Three-Year Renewal
 PID: 5639-S16

Use-based OTC with Three-year Renewal Software Maintenance

Description	Program number	Feature number
IBM Storwize Family Software for Storwize V5000 Software Maintenance Three-year Renewal One-time charge Per Storage Device	5639-S16	0006
IBM Storwize Family Software for Storwize V5000 FlashCopy Software Maintenance Three-year Renewal One-time charge Per Storage Device		0007
IBM Storwize Family Software for Storwize V5000 Remote Mirror Software Maintenance Three-year Renewal One-time charge Per Storage Device		0008
IBM Storwize Family Software for Storwize V5000 Easy Tier Software Maintenance Three-year Renewal One-time charge Per Storage Device		0009

IBM Storwize Family Software 0010
for Storwize V5000
External Virtualization
Software Maintenance
Three-year Renewal
One-time charge
Per Storage Device

Program name: IBM Storwize Family Software for Storwize V5000
Software maintenance - Three-Year After license
PID: 5639-S17

Use-based OTC with Three-year After License Software
Maintenance

Description	Program number	Feature number
IBM Storwize Family Software for Storwize V5000 Software Maintenance Three-year After license One-time charge Per Storage Device	5639-S17	0006
IBM Storwize Family Software for Storwize V5000 FlashCopy Software Maintenance Three-year After license One-time charge Per Storage Device		0007
IBM Storwize Family Software for Storwize V5000 Remote Mirror Software Maintenance Three-year After license One-time charge Per Storage Device		0008
IBM Storwize Family Software for Storwize V5000 Easy Tier Software Maintenance Three-year After license One-time charge Per Storage Device		0009
IBM Storwize Family Software for Storwize V5000 External Virtualization Software Maintenance Three-year After license One-time charge Per Storage Device		0010

Program name: IBM Storwize Family Software for Storwize V5000
Software maintenance - Two-Year Registration
PID: 5639-S18

Use-based OTC with Two-year Reg Software Maintenance

Description	Program number	Feature number
IBM Storwize Family Software for Storwize V5000 Software Maintenance Two-year Registration One-time charge Per Storage Device	5639-s18	0006
IBM Storwize Family Software for Storwize V5000 FlashCopy Software Maintenance Two-year Registration One-time charge Per Storage Device		0007
IBM Storwize Family Software for Storwize V5000 Remote Mirror Software Maintenance Two-year Registration One-time charge Per Storage Device		0008
IBM Storwize Family Software for Storwize V5000 Easy Tier Software Maintenance Two-year Registration One-time charge Per Storage Device		0009
IBM Storwize Family Software for Storwize V5000 External Virtualization Software Maintenance Two-year Registration One-time charge Per Storage Device		0010

Program name: IBM Storwize Family Software for Storwize V5000
Software maintenance - Four-Year Registration
PID: 5639-S19

Use-based OTC with Four-year Reg Software Maintenance

Description	Program number	Feature number
IBM Storwize Family Software for Storwize V5000 Software Maintenance Four-year Registration One-time charge Per Storage Device	5639-s19	0005
IBM Storwize Family Software for Storwize V5000 FlashCopy Software Maintenance Four-year Registration One-time charge Per Storage Device		0006

IBM Storwize Family Software 0007
for Storwize V5000
Remote Mirror
Software Maintenance
Four-year Registration
One-time charge
Per Storage Device

IBM Storwize Family Software 0008
for Storwize V5000
Easy Tier
Software Maintenance
Four-year Registration
One-time charge
Per Storage Device

IBM Storwize Family Software 0009
for Storwize V5000
External Virtualization
Software Maintenance
Four-year Registration
One-time charge
Per Storage Device

Program name: IBM Storwize Family Software for Storwize V5000
Software maintenance - Five-Year Registration

PID: 5639-S20

Use-based OTC with Five-year Reg Software Maintenance

Description	Program number	Feature number
IBM Storwize Family Software for Storwize V5000 Software Maintenance Five-year Registration One-time charge Per Storage Device	5639-S20	0016
IBM Storwize Family Software for Storwize V5000 FlashCopy Software Maintenance Five-year Registration One-time charge Per Storage Device		0017
IBM Storwize Family Software for Storwize V5000 Remote Mirror Software Maintenance Five-year Registration One-time charge Per Storage Device		0018
IBM Storwize Family Software for Storwize V5000 Easy Tier Software Maintenance Five-year Registration One-time charge Per Storage Device		0019

IBM Storwize Family Software
for Storwize V5000
External Virtualization
Software Maintenance
Five-year Registration
One-time charge
Per Storage Device

0020

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