

IBM System Storage Support for Microsoft Volume Shadow  
Copy Service and Virtual Disk Service  
Version 4.6.0

*Release Notes*



**Second Edition (December 2013)**

This edition applies to version 4.6.0 of the IBM System Storage Support for Microsoft Volume Shadow Copy Service and Virtual Disk Service and to all subsequent releases and modifications until otherwise indicated in a newer publication. Newer document editions may be issued for the same product version in order to add missing information or amend typographical errors. The edition is reset to 'First Edition' for every new product version.

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## Overview

The IBM® System Storage® Support for Microsoft Volume Shadow Copy Service (VSS) and Virtual Disk Service (VDS) for DS8000® and SAN Volume Controller is a software module that runs as a service on Microsoft Windows Server.

The module automatically creates snapshots of Windows-based applications and uses the Windows Server VSS framework for its management interface. It also uses the DS8000 and SAN Volume Controller as the storage systems on which snapshot data is stored and maintained.

You can download the IBM System Storage Support for Microsoft Volume Shadow Copy Service and Virtual Disk Service at the IBM Fix Central website ([www.ibm.com/support/fixcentral/](http://www.ibm.com/support/fixcentral/)).

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## Compatibility and requirements

This section specifies the compatibility and requirements of version 4.6.0 of the IBM System Storage Support for Microsoft Volume Shadow Copy Service and Virtual Disk Service.

### Supported operating systems

The IBM System Storage Support for Microsoft Volume Shadow Copy Service and Virtual Disk Service version 4.6.0 can work with the following operating systems:

- Microsoft Windows Server 2003 with Service Pack 2 (32-bit and 64-bit)
- Microsoft Windows Server 2008 with Service Pack 2 (32-bit and 64-bit)
- Microsoft Windows Server 2008 R2 with Service Pack 1 (64-bit)
- Microsoft Windows Server 2012 (64-bit)

### Required software on the host

The software that is required for the host system and the required hotfixes are both necessary for the service to run effectively.

#### Multipath I/O

- 5.2.3790.4706 (srv03\_sp2\_qfe.100510 -16540) for Windows 2003

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**Note:** To support Windows Servers that are owned by the Hyper-V server, enable the Multipath I/O feature with the appropriate vendor multipath driver only in the Hyper-V server.

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#### Storport Driver

- 5.2.3790.4485 (srv03\_sp2\_qfe.090330 -1212) for Windows 2003

### Required hotfixes

The hotfixes listed here must be installed before you install the IBM System Storage Support for Microsoft Volume Shadow Copy Service and Virtual Disk Service.

- See Table 1 on page 2 for the Windows 2003 Service Pack 2 hotfixes.

- See Table 2 on page 3 for the Windows 2008 Service Pack 1 hotfixes.
- See Table 3 on page 3 for the Windows 2008 Service Pack 2 hotfixes.
- See Table 4 on page 4 for the Windows 2008 hotfixes.

*Table 1. Hotfixes for Windows 2003 Service Pack 2*

Hotfix ID	Description	Download site
KB919117	Adds support for GUID partition table (GPT) volumes that are larger than 2 terabytes on a Windows Server 2003-based server cluster	<a href="http://support.microsoft.com/kb/919117">http://support.microsoft.com/kb/919117</a>
KB932532	A Volume Shadow Copy import operation might generate an error on a Windows Server 2003-based computer: "VSS_E_NO_SNAPSHOTS_IMPORTED"	<a href="http://support.microsoft.com/kb/932532">http://support.microsoft.com/kb/932532</a>
KB934016	Availability of Windows Server 2003 Post-Service Pack 2 COM+ 1.5 test fix Rollup Package 12	<a href="http://support.microsoft.com/kb/934016">http://support.microsoft.com/kb/934016</a>
KB934739	The Plug-and-Play subsystem might not detect an external storage device when it is reconnected in Windows Server 2003	<a href="http://support.microsoft.com/kb/934739">http://support.microsoft.com/kb/934739</a>
KB940349	Availability of a Volume Shadow Copy Service (VSS) update rollup package for Windows Server 2003 to resolve some VSS snapshot issues	<a href="http://support.microsoft.com/kb/940349">http://support.microsoft.com/kb/940349</a>
KB941276	A Windows Server 2003-based computer stops responding when the system is under a heavy load and when the Storport driver is being used	<a href="http://support.microsoft.com/kb/941276">http://support.microsoft.com/kb/941276</a>
KB949391	The operation might fail when one of the following are true: <ul style="list-style-type: none"> <li>• Volume Shadow Copy Service (VSS) tries to delete hardware support snapshots on a computer that is running Windows Server 2003</li> <li>• Volume Shadow Copy Service (VSS) tries to delete hardware support snapshots on a computer that is running an x64 version of Windows XP</li> </ul>	<a href="http://support.microsoft.com/kb/949391">http://support.microsoft.com/kb/949391</a>

*Table 1. Hotfixes for Windows 2003 Service Pack 2 (continued)*

Hotfix ID	Description	Download site
KB951568	VSS-based backup operations might fail if VSS tracing is enabled on a Windows Server 2003-based computer that has test fix 940349 applied	<a href="http://support.microsoft.com/kb/951568">http://support.microsoft.com/kb/951568</a>
KB957778	VSS requester instances fail when you start multiple VSS requester instances with a VSS hardware provider to delete snapshots in Windows Server 2003	<a href="http://support.microsoft.com/kb/957778">http://support.microsoft.com/kb/957778</a>
KB957910	A Windows Server 2003 SP2-based iSCSI boot server cannot generate dump files if the server uses a Storport virtual miniport as the LUN controller	<a href="http://support.microsoft.com/kb/957910">http://support.microsoft.com/kb/957910</a>
KB972623	A non-persistent snapshot cleanup operation is stopped by VSS if the VSS hardware provider takes more than 3 minutes to complete this operation on the following computers: <ul style="list-style-type: none"> <li>• Windows Server 2003</li> <li>• Windows XP Professional x64 Edition</li> </ul>	<a href="http://support.microsoft.com/kb/972623">http://support.microsoft.com/kb/972623</a>
KB982109	Access to an MPIO-controlled storage device fails after you disconnect all data cables in Windows Server 2003	<a href="http://support.microsoft.com/kb/982109">http://support.microsoft.com/kb/982109</a>

*Table 2. Hotfixes for Windows 2008 Service Pack 1*

Hotfix ID	Description	Download site
KB959476	A VSS hardware snapshot database keeps growing with duplicated snapshot information when it is updated for snapshot creation/deletion in Windows Server 2008	<a href="http://support.microsoft.com/kb/959476">http://support.microsoft.com/kb/959476</a>

*Table 3. Hotfixes for Windows 2008 Service Pack 2*

Hotfix ID	Description	Download site
KB972135	Backups fail and Event ID 12293 is logged on a computer that is running Windows Server 2008	<a href="http://support.microsoft.com/kb/972135">http://support.microsoft.com/kb/972135</a>

Table 3. Hotfixes for Windows 2008 Service Pack 2 (continued)

Hotfix ID	Description	Download site
KB2528357	Non-paged pool leak when you disable and enable some storage controllers in Windows Server 2008	<a href="http://support.microsoft.com/kb/2528357">http://support.microsoft.com/kb/2528357</a>

Table 4. Hotfixes for Windows Server 2008 R2

Hotfix ID	Description	Download site
KB975688	A snapshot may become corrupted when the Volume Shadow Copy Service (VSS) snapshot providers take more than 10 seconds to create it on a computer that is running Windows Server 2008 R2	<a href="http://support.microsoft.com/kb/975688">http://support.microsoft.com/kb/975688</a>
KB2637197	CSV LUNs fail if you use a VSS hardware provider to back up virtual machines on a Windows Server 2008 R2-based cluster	<a href="http://support.microsoft.com/kb/2637197">http://support.microsoft.com/kb/2637197</a>
KB2661794	MPIO does not remove a disk that is on a failed path in Windows Server 2008 R2	<a href="http://support.microsoft.com/kb/2661794">http://support.microsoft.com/kb/2661794</a>
KB2528357	Non-paged pool leak when you disable and enable some storage controllers in Windows Server 2008 R2	<a href="http://support.microsoft.com/kb/2528357">http://support.microsoft.com/kb/2528357</a>

## Supported VMware platforms

The Volume Shadow Copy Service and Virtual Disk Service support specific VMware server platforms.

The following VMware server platforms are supported in this version:

Table 5. Supported VMware platforms

VMware platform	Version
vSphere ESX Server	4.0, 4.1
vSphere ESXi Server	4.0, 4.1, 5.0, 5.1, 5.5
vCenter Server	4.0, 4.1, 5.0, 5.1, 5.5

## Supported storage systems

The Volume Shadow Copy Service and Virtual Disk Service support the following storage systems.

Table 6. Supported IBM storage systems

IBM Storage System	Microcode version
DS8000	6.x, 7.0, 7.1



Table 6. Supported IBM storage systems (continued)

IBM Storage System	Microcode version
Storwize® V3500	6.4.1, 7.1
Storwize V3700	6.4.1, 7.1
Storwize V7000	6.1, 6.2, 6.3, 6.4, 6.4.1, 7.1
SAN Volume Controller	5.1, 6.1, 6.2, 6.3, 6.4, 6.4.1, 7.1
Storwize V7000 Unified	1.3, 1.4, 1.4.1
IBM Flex System™ V7000	6.4.1, 7.1

## Change log

This section summarizes the changes made in different version releases of the IBM System Storage Support for Microsoft Volume Shadow Copy Service and Virtual Disk Service.

### Version 4.6.0 (September 2013)

Version 4.6.0 adds support for the several storage systems and VMware platforms.

For information about all supported systems, see “Supported storage systems” on page 4. For information on VMware platforms, see “Supported VMware platforms” on page 4.

#### Additional changes in version 4.6.0

Ticket ID	Description
VPSD-258628	<b>Fixed:</b> Zero KB virtual machine disk (VMDK) files might be left on the ESXi/vCenter datastore after multiple snapshots were mounted via Raw Device Mapping (RDM) and then deleted. The zero KB VMDK files occupied the positions of the normal (non-zero KB) VMDK files.

### Version 4.5.0 (June 2013)

Version 4.5.0 included two notable changes.

See Table 7 for a description of the changes.

Table 7. Additional changes in version 4.5.0

Ticket ID	Description
VPSD-250031	<b>Fixed:</b> Cascading FlashCopy volumes are mapped to the wrong host after deleting shadows when the <b>backgroupCopy</b> is zero.
VPSD-251973	<b>Fixed:</b> The <b>Devicepath</b> cannot be parsed into the VDisk ID in hosts without SDDDSM.

## Version 4.4.0 (February 2013)

Version 4.4.0 included one notable change.

See Table 8 for a description of the change.

*Table 8. Additional changes in version 4.4.0*

Ticket ID	Description
VPD-246573	VDS provider is not automatically registered after installation.

## Version 4.3.0 (October 2012)

Version 4.3.0 included three notable changes.

See Table 9 for a description of the changes.

*Table 9. Additional changes in version 4.3.0*

Build ID	Description
121018	Support for Storwize V3500 and Storwize V3700 code level 6.4.1.22
120907	Support for the SAN Volume Controller/Storwize V7000/Storwize V7000 Unified cascading/multi-target FlashCopies with zero copy rate in a Microsoft cluster environment.
	Clean up of snapshot IDs of dependant FlashCopies whose target volume has already been put back to free pool: <b>ibmvcfg.exe</b> tool.
120729	Support for SAN Volume Controller and Storwize V7000 code level 6.4.0.0/6.4.1.17
	Support for DS8000 CIMOM version 6.3.x
	Upgraded to Java™ 7.0

## Version 4.2.1 (March 2012)

Version 4.2.1 included two notable changes.

See Table 10 for a description of the changes.

*Table 10. Additional changes in version 4.2.1*

Build ID	Description
1207	Support for SAN Volume Controller and Storwize V7000 code level 6.3.0.62.
	VMware ESXi 5.0 support for MS Windows Server.
	Support for Storwize v7000 Unified 1.3 environment.
	Support for DS8000 CIMOM version 6.2.x in code bundle 86.20.103.0.
0816	Pre-test snapshot to find a suitable free target volume and adjustable time length for disk rescan injection: <b>ibmvcfg.exe</b> tool.
	Support for Hyper-V on Windows Guest operating system.
	Support SAN Volume Controller microcode level 6.2.x.

## Version 4.2.0 (November 2010)

Version 4.2.0 included the following changes:

- VMware ESX 4.x and ESXi 4.x server support for Microsoft Windows Server System.
- Support for SAN Volume Controller 6.1 and Storwize V7000.

## Version 4.1.0 (June 2010)

Version 4.1.0 included the following changes:

- FlashCopy® Manager support for version 2.2.
- Support for Cascading/Multi-FlashCopy instant restore for SAN Volume Controller.
- Support for Cascading/Multi-FlashCopy downstream deletion for SAN Volume Controller.

## Version 4.0.1 (October 2009)

Version 4.0.1 included the following changes:

- Microsoft Windows Server 2008 R2.
- Support for FlashCopy Manager.
- Support for Virtual Disk Service (VDS) for SAN Volume Controller.
- Enhancement in **IBMvcfg.exe** for list reserved, list that is assigned, and <-1> verbose to detail all listings.
- Support for SAN Volume Controller 5.1 cascading/multi-target FlashCopy restore with Space efficient and fully allocated volumes.
- Support diskshadow - Resync.

## Version 3.4.1 (January 2009)

Version 3.4.1 included the following changes:

- Microsoft Windows Server 2008 32-bit and 64-bit.
- GUID Partition Disks.
- Incremental FlashCopy support
- Extended the size of LUN for Diskraid.
- Support for DS embedded CIMOM.
- IBM System Storage Virtual Disk Service Provider can support Windows 2008 Hyper-V.

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## Known issues

The known issues that are in version 4.6.0 of the IBM System Storage Support for Microsoft Volume Shadow Copy Service and Virtual Disk Service are summarized here.

Ticket ID	Description
VPSD-245364	Microsoft DPM creates the FlashCopy for the shared source volume. In case SEV and copy rate are zero, the cascading FlashCopy is created unexpectedly. The deletion of cascading FlashCopy(s) causes target volumes to error.  <b>Workaround:</b> Set the background copy rate above zero when you use the space efficient volume in Microsoft DPM.
VPSD-258619	When using the IBM VSS Hardware Provider in a Windows Hyper-V Live Migration environment, FlashCopy fails on any guest operating system where the cluster owner and Hyper-V host are not on the same node.
VPSD-258648	Supports only NTFS volume.
VPSD-258649	When you create a Shadow Copy for dynamic disk on Windows 2003, the Shadow Copy must be "transportable" type.
VPSD-258650	Import operation for GPT + Dynamic disk is not supported on Windows 2003.
VPSD-258651	Incremental FlashCopy does not support dynamic disks with concatenate volumes either spanned or striped, and does not support multi-target volumes for the same source disk.
VPSD-258652	Drops support of DS6000, SAN Volume Controller 4.3.1 and earlier, and DS8000 CIM agent version 5.3 and earlier
VPSD-258653	Supports only embedded CIM Agent.
VPSD-258654	For DS8000 restore operation, space efficient volume or <b>backgroundCopy</b> of zero is not supported.
VPSD-258655	For the SAN Volume Controller/Storwize V7000 cascading/multi-target FlashCopies with zero copy rate, after restoring one of the FlashCopy mappings, the current and newer FlashCopy relationships are withdrawn. The current target volume and newer FlashCopy volumes are returned to the free pool.

Ticket ID	Description
VPSPD-258656	For the SAN Volume Controller/Storwize V7000 cascading/multi-target FlashCopies with zero copy rate, after deleting one of the FlashCopy mappings, the current and earlier FlashCopy relationships are withdrawn. The current target volume and earlier FlashCopy volumes are returned to the free pool. The snapshot IDs of earlier FlashCopy volumes stay in host until the next snapshot/restore is run. Alternatively, <b>ibmvcfg.exe cleanupDependentMaps</b> can be used to clean up the snapshot IDs of earlier FlashCopy volumes manually.
VPSPD-258657	Before using the IBM Virtual Disk Service, the prerequisite Java JRE 7.0 application must be installed. For example, <b>ibm-java-jre-70-win-i386.exe</b> or <b>ibm-java-jre-70-win-x86_64.exe</b> .
VPSPD-258658	Starting from version 4.4.0, IBM Virtual Disk Service provider is not automatically registered after installation. To manually register IBM Virtual Disk Service provider, issue the <b>regsvr32 ibmvds.dll</b> command under the directory of the IBM Volume Shadow Copy Service provider.

## Related information and publications

You can find more information and publications that are related to the IBM System Storage Support for Microsoft Volume Shadow Copy Service and Virtual Disk Service.

- IBM Flex System Information Center
- IBM Storwize V3500 Information Center
- IBM Storwize V3700 Information Center
- IBM Storwize V7000 Information Center
- IBM Storwize V7000 Unified Information Center
- IBM System Storage SAN Volume Controller Information Center
- IBM System Storage DS8000 Information Center
- VMware ESXi and ESX Information Center
- VMware Product Support for VMware vSphere, including support for ESX, ESXi, and vCenter.
- VMware knowledgebase
- Microsoft MSDN web page for Volume Shadow Copy Service
- Microsoft Windows Server Troubleshooting Center

## Getting information, help, and service

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- IBM website (ibm.com®)

- IBM Support Portal website ([www.ibm.com/storage/support](http://www.ibm.com/storage/support))
- IBM Directory of Worldwide Contacts website ([www.ibm.com/planetwide](http://www.ibm.com/planetwide))

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