

IBM System Storage Support for Microsoft Volume Shadow  
Copy Service and Virtual Disk Service  
Version 4.7.0

*Release Notes*



**First Edition (December 2013)**

This edition applies to version 4.7.0 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 VSS and VDS 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 4.7.0 of the IBM System Storage Support for Microsoft VSS and VDS.

### Supported operating systems

The IBM System Storage Support for Microsoft VSS and VDS version 4.7.0 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)
- Microsoft Windows Server 2012 R2 (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

### Test fixes for Windows 2003 Service Pack 2

The fixes listed here must be installed before you install the IBM System Storage Support for Microsoft VSS and VDS. This section details test fix information for Windows 2003 Service Pack 2.

| Hotfix ID       | Description  | Download site   |
|-----------------|--|---|
| <b>KB919117</b> | 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> |
| <b>KB932532</b> | A Volume Shadow Copy import operation might generate an error on a Windows Server 2003-based computer:<br>"VSS_E_NO_SNAPSHOTS_IMPORTED"  | <a href="http://support.microsoft.com/kb/932532">http://support.microsoft.com/kb/932532</a> |
| <b>KB934016</b> | 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> |
| <b>KB934739</b> | 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> |
| <b>KB940349</b> | Availability of a 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> |
| <b>KB941276</b> | 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> |
| <b>KB949391</b> | The operation might fail when one of the following are true: <ul style="list-style-type: none"> <li>• VSS tries to delete hardware support snapshots on a computer that is running Windows Server 2003</li> <li>• 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> |
| <b>KB951568</b> | 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> |
| <b>KB957778</b> | 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> |

| Hotfix ID | Description  | Download site   |
|-----------|--|---|
| 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> |

## Test fixes for Windows 2008 Service Pack 1

The fixes listed here must be installed before you install the IBM System Storage Support for Microsoft VSS and VDS. This section details test fix information 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> |

## Test fixes for Windows 2008 Service Pack 2

The fixes listed here must be installed before you install the IBM System Storage Support for Microsoft VSS and VDS. This section details test fix information 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>   |
| 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> |

## Test fixes for Windows Server 2008

The fixes listed here must be installed before you install the IBM System Storage Support for Microsoft VSS and VDS. This section details test fix information for Windows Server 2008.

| Hotfix ID | Description   | Download site   |
|-----------|---|---|
| KB975688  | A snapshot may become corrupted when the 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 Microsoft VSS and VDS support specific VMware server 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 Microsoft VSS and VDS support the following storage systems.

| IBM Storage System     | Microcode version                        |
|------------------------|--|
| DS8000                 | 6.x, 7.0, 7.1, 7.2                       |
| Storwize® V3500        | 6.4.1, 7.1, 7.2                          |
| Storwize V3700         | 6.4.1, 7.1, 7.2                          |
| Storwize V5000         | 7.1, 7.2                                 |
| Storwize V7000         | 6.1, 6.2, 6.3, 6.4, 6.4.1, 7.1, 7.2      |
| Storwize V7000 Unified | 1.3, 1.4, 1.4.1                          |
| SAN Volume Controller  | 5.1, 6.1, 6.2, 6.3, 6.4, 6.4.1, 7.1, 7.2 |
| IBM Flex System™ V7000 | 6.4.1, 7.1, 7.2                          |



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## Change log

This section summarizes the changes made in different version releases of the IBM System Storage Support for Microsoft VSS and VDS.

### Version 4.7.0 (December 2013)

Version 4.7.0 adds support for Windows Server Hyper-V.

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.

| Ticket ID  | Description   |
|------------|---|
| VPD-258618 | <b>Fixed:</b> Removed the limitation of configuring an individual free pool for each host.  |
| VPD-258619 | <b>Fixed:</b> In Windows Failover Cluster, if the vmhost is set to the cluster IP, then the Cluster Owner and Hyper-v host, which vm is on, must be on the same node. |

### Version 4.6.0 (September 2013)

Version 4.6.0 added support for 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.

| Ticket ID  | Description  |
|------------|--|
| VPD-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.

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

## Version 4.4.0 (February 2013)

Version 4.4.0 included one notable change.

| 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.

| 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.<br><br>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<br><br>Support for DS8000 CIMOM version 6.3.x<br><br>Upgraded to Java™ 7.0  |

## Version 4.2.1 (March 2012)

Version 4.2.1 included two notable changes.

| Build ID | Description  |
|----------|--|
| 1207     | Support for SAN Volume Controller and Storwize V7000 code level 6.3.0.62.<br><br>VMware ESXi 5.0 support for MS Windows Server.<br><br>Support for Storwize v7000 Unified 1.3 environment.<br><br>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.<br><br>Support for Hyper-V on Windows Guest operating system.<br><br>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 4.7.0 of the IBM System Storage Support for Microsoft Volume Shadow Copy Service and Virtual Disk Service are summarized here.

| Ticket ID  | Description   |
|------------|---|
| VPD-245364 | Microsoft DPM creates the FlashCopy for the shared source volume. If space-efficient volume and copy rate are zero, the cascading FlashCopy is created unexpectedly. The deletion of cascading FlashCopy(s) causes target volumes to error.<br><br><b>Workaround:</b> Set the background copy rate above zero when you use the space efficient volume in Microsoft DPM. |
| VPD-258648 | Supports only NTFS volume.  |
| VPD-258649 | When you create a Shadow Copy for dynamic disk on Windows 2003, the Shadow Copy must be "transportable" type.   |

| Ticket ID   | Description  |
|-------------|--|
| 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.  |
| VPSD-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. |
| VPSD-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> .  |
| VPSD-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 VSS and VDS.

- IBM Flex System Information Center
- IBM Storwize V3500 Information Center
- IBM Storwize V3700 Information Center
- IBM Storwize V5000 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

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## Getting information, help, and service

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- IBM website ([ibm.com](http://ibm.com)<sup>®</sup>)
- 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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