# IBM Storage Support for Microsoft Volume Shadow Copy Service and Virtual Disk Service 4.17.0

*Release notes*

**First Edition (September 2021)**

This edition applies to IBM® Storage Support for Microsoft Volume Shadow Copy Service and Virtual Disk Service 4.17.0 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.

# Contents

# Overview

The IBM Storage Support for Microsoft Volume Shadow Copy Service (VSS) and Virtual Disk Service (VDS) for DS8000® and Storwize Family storage systems 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. The snapshot data is stored and maintained on integrated DS8000 and Storwize Family storage systems.

You can download the IBM Storage Support for Microsoft VSS and VDS at the IBM Fix Central website.

**Note:** IBM Fix Central lists this product download under the name "IBM TotalStorage support for Microsoft Windows VSS".

# What's new in 4.17.0

IBM Storage Support for Microsoft Volume Shadow Copy Service and Virtual Disk Service 4.17.0 adds support for VMware platforms.

For more information, refer to “4.17.0 (September 2021)” on page 7.

# Compatibility and requirements

This section specifies the compatibility and requirements of the IBM Storage Support for Microsoft VSS and VDS 4.17.0.

## Supported operating systems

IBM Storage Support for Microsoft VSS and VDS 4.17.0 can work with the following operating systems:

| Operating system | Service Pack | Architecture |
|---|---|---|
| Microsoft Windows Server 2008 | SP2 | x86, x64 |
| Microsoft Windows Server 2008 R2 | SP1 | x64 |
| Microsoft Windows Server 2012 | None | x64 |
| Microsoft Windows Server 2012 R2 | None | x64 |
| Microsoft Windows Server 2016 | None | x64 |
| Microsoft Windows Server 2019 | None | x64 |

**Note:** Only NTFS volumes are supported.

## Supported storage systems

IBM Storage Support for Microsoft VSS and VDS supports the following storage systems.

| IBM storage system | Microcode version |
|---|---|
| IBM DS8880 | 8.0, 8.1, 8.2, 8.3.x, 8.4.0 |
| IBM SAN Volume Controller | 8.1.x, 8.2.1, 8.3.x, 8.4.x |
| Storwize® V5000 | 8.1.x, 8.2.1, 8.3.x, 8.4.x |
| IBM Storwize V5100 | 8.4.x |
| IBM Storwize V5000E | 8.3.1, 8.4.x |
| IBM Storwize V7000 | 8.1.x, 8.2.x, 8.3.x, 8.4.x |
| IBM FlashSystem® V9000 | 8.1.x, 8.2.x, 8.3.x |
| IBM FlashSystem 5000 | 8.3.1, 8.4.x |
| IBM FlashSystem 5100 | 8.2.1, 8.3.x, 8.4.x |
| IBM FlashSystem 5200 | 8.4.0.1 or later |
| IBM FlashSystem 7200 | 8.3.1, 8.4.x |
| IBM FlashSystem 9100 | 8.3.x, 8.4.x |
| IBM FlashSystem 9200 | 8.3.1, 8.4.x |
| IBM Spectrum Virtualize as software only | 7.8, 8.1.x, 8.2.1, 8.3.x |

**Note:** Newer microcode versions may also be compatible. When a newer microcode version becomes available, refer to the Lifecycle and support matrix page in IBM Documentation to check whether the new microcode version is also supported.

## Supported VMware platforms

IBM Storage Support for Microsoft VSS and VDS support specific VMware server platforms.

| VMware platform | Version |
|---|---|
| vSphere ESXi Server | 5.0, 5.1, 5.5, 6.0, 6.5, 6.7, 7.0 |
| vCenter Server | 5.0, 5.1, 5.5, 6.0, 6.5, 6.7, 7.0 |

## Required software on the host

The software that is required for the host system is necessary for the service to run effectively.

| Operating system | Service pack | Required components that must be installed manually |
|---|---|---|
| Windows Server 2008 | Service Pack 1 | • Microsoft Hotfix KB959476 |
| | Service Pack 2 | • Microsoft Hotfix KB972135<br>• Microsoft Hotfix KB2528357 |
| | None | • Microsoft Hotfix KB975688<br>• Microsoft Hotfix KB2637197<br>• Microsoft Hotfix KB2661794<br>• Microsoft Hotfix KB2528357 |
| Windows Server 2012 | None | • Microsoft Hotfix KB2916993<br>• Microsoft Hotfix KB2929869<br>• Microsoft Hotfix KB2913695<br>• Microsoft Hotfix KB2878635<br>• Microsoft Hotfix KB2894464<br>• Microsoft Hotfix KB2838043<br>• Microsoft Hotfix KB2803748<br>• Microsoft Hotfix KB2770917<br>• Microsoft Hotfix KB976424 |
| Windows Server 2012 R2 | None | • Microsoft Hotfix KB2955164<br>• Microsoft Hotfix KB2919355<br>• Microsoft Hotfix KB976424 |
| Windows Server 2019 | None | • Microsoft Hotfix KB4469342 |

# Change log

The following topics summarize the changes that are made in different version releases of the IBM Storage Support for Microsoft VSS and VDS.

## 4.17.0 (September 2021)

IBM Storage Support for Microsoft Volume Shadow Copy Service and Virtual Disk Service 4.17.0 adds support for following VMware platforms:

- vSphere ESXi Server: 6.7 and 7.0
- vCenter Server: 6.5, 6.7 and 7.0

## 4.16.0 (August 2018)

IBM Storage Support for Microsoft Volume Shadow Copy Service and Virtual Disk Service 4.16.0 added support for the following storage system microcode versions:

- IBM DS8880 8.3.3 and 8.4.0
- IBM SAN Volume Controller 8.1.3, 8.2.1, and 8.3.0
- IBM Storwize V5000 8.1.3, 8.2.1, and 8.3.0
- IBM Storwize V7000 8.1.3, 8.2.0, 8.2.1, and 8.3.0
- IBM Spectrum Virtualize (deployable software) 8.1.3, 8.2.1, and 8.3.0
- IBM FlashSystem V9000 8.1.3, 8.2.1, and 8.3.0
- IBM FlashSystem 9100 8.2.0, 8.2.1, and 8.3.0

Version 4.16.0 also included the following enhancement:

| Ticket ID | Description |
|---|---|
| **VPSD-258831** | **Enhancement:** Support volumes in DR pool except for deduplicated volumes. |

## 4.15.0 (March 2018)

IBM Storage Support for Microsoft Volume Shadow Copy Service and Virtual Disk Service 4.15.0 added support for the following storage system microcode versions:

- IBM DS8880 8.3.1
- IBM SAN Volume Controller 8.1.1 and 8.1.2
- IBM Storwize V5000 8.1.1 and 8.1.2
- IBM Storwize V7000 8.1.1 and 8.1.2
- IBM FlashSystem V9000 8.1.1 and 8.1.2

## 4.14.0 (September 2017)

IBM Storage Support for Microsoft Volume Shadow Copy Service and Virtual Disk Service 4.14.0 added support for the following storage system microcode versions:

- IBM DS8880 8.3
- IBM SAN Volume Controller 8.1
- IBM Storwize V5000 8.1
- IBM Storwize V7000 8.1

- IBM FlashSystem V9000 8.1

## 4.13.0 (December 2016)

IBM Storage Support for Microsoft Volume Shadow Copy Service and Virtual Disk Service 4.13.0 added support for the following storage system microcode versions:

- IBM DS8880 8.2
- IBM SAN Volume Controller 7.8
- IBM Storwize V3500 7.8
- IBM Storwize V3700 7.8
- IBM Storwize V5000 7.8
- IBM Storwize V7000 7.8
- IBM FlashSystem V9000 7.8

IBM Storage Support for Microsoft VSS and VDS 4.13.0 also includes the following enhancements and fix.

For information about all supported systems, see "Supported storage systems" on page 5. For information on VMware platforms, see "Supported VMware platforms" on page 6.

| Ticket ID | Description |
|---|---|
| **VPSD-258799** | **Enhancement:** Improved performance when using a large number of hosts. |
| **VPSD-258800** | **Enhancement:** For FlashCopy® Manager (FCM) , the API now supports temporary read/write access to a snapshot with Dynamic Target Allocation on SVC storage. |
| **VPSD-258801** | **Enhancement:** For FlashCopy Manager (FCM), more meaningful root causes are provided if the API returns **`_com_error`**. |
| **VPSD-258798** | **Fixed:** For FlashCopy Manager (FCM), VSS VDS **`snapofsnap`** import fails if the **`readonly`** flag on the disk is `yes` while the disk was online. |

## 4.12.0 (June 2016)

IBM Storage Support for Microsoft Volume Shadow Copy Service and Virtual Disk Service 4.12.0 included the following enhancement and fixes.

For information about all supported systems, see "Supported storage systems" on page 5. For information on VMware platforms, see "Supported VMware platforms" on page 6.

| Ticket ID | Description |
|---|---|
| **VPSD-261146** | **Enhancement:** A new CIM class (**`IBMTSSVC_ConciseVolume`**) was created to improve performance when locating target volumes. |
| **VPSD-258788** | **Fixed:** VSS VDS failed to connect to CIM when CIM was restarted after the CIM resource limitation was reached. |
| **VPSD-258778** | **Fixed:** VSS VDS failed to delete a snapshot if the copy progress did not start, and the background copy rate was set higher than zero. |
| **VPSD-258782** | **Fixed:** While a snapshot was being deleted from the ESXi RDM environment, it continued to be unmapped from the ESXi host even after the first step of removing the snapshot from the virtual machine (VM) failed. This caused the VM to not work properly. |

## 4.11.0 (December 2015)

IBM Storage Support for Microsoft Volume Shadow Copy Service and Virtual Disk Service 4.11.0 included the following enhancements.

For information about all supported systems, see “Supported storage systems” on page 5. For information on VMware platforms, see “Supported VMware platforms” on page 6.

| Ticket ID | Description |
|---|---|
| **VPSD-258693** | **Enhancement:** Private APIs for FlashCopy Manager (FCM) created to provide capability to manage a snapshot of a snapshot in order to perform mailbox level restores. |
| **VPSD-258768** | **Enhancement:** A more detailed error message was created to be returned when the command `ibmvcfg set username/password` fails. The new error message reads:<br>`The key has been successfully set.`<br>`However, with the newly set key and other existing keys we could not connect to CIM.` |

## 4.10.0.1 (June 2015)

IBM Storage Support for Microsoft Volume Shadow Copy Service and Virtual Disk Service 4.10.0.1 included the following fix.

For information about all supported systems, see “Supported storage systems” on page 5. For information on VMware platforms, see “Supported VMware platforms” on page 6.

| Ticket ID | Description |
|---|---|
| **VPSD-258762** | **Fixed:** For DS8000 storage systems, if a source volume had multiple target volumes, restore from one of the target volumes would fail.<br>**Note:** This issue existed since IBM Storage Support for Microsoft VSS and VDS 4.9.0. |

## 4.10.0 (June 2015)

IBM Storage Support for Microsoft Volume Shadow Copy Service and Virtual Disk Service 4.10.0 included the following enhancement and fixes.

For information about all supported systems, see “Supported storage systems” on page 5. For information on VMware platforms, see “Supported VMware platforms” on page 6.

| Ticket ID | Description |
|---|---|
| **VPSD-258692** | **Enhancement:** Dynamic allocation of FlashCopy targets for supported versions of SAN Volume Controller and DS8000. |
| **VPSD-258747** | **Fixed:** If IBM Storage Support for Microsoft VSS and VDS is installed to a new Windows server, the password for connecting to the storage system is not correctly stored. |
| **VPSD-258738** | **Fixed:** The retry logic for handling VMware vSphere Web Services SDK failure may not work after several tries. |

## 4.9.0.1 (March 2015)

IBM Storage Support for Microsoft Volume Shadow Copy Service and Virtual Disk Service 4.9.0.1 included the following enhancement.

For information about all supported systems, see "Supported storage systems" on page 5. For information on VMware platforms, see "Supported VMware platforms" on page 6.

| Ticket ID | Description |
|---|---|
| **VPSD-258734** | **Enhancement:** Support for IBM China Systems & Technology Certification (CSTL) certification. |

## 4.9.0 (December 2014)

IBM Storage Support for Microsoft Volume Shadow Copy Service and Virtual Disk Service 4.9.0 included the following enhancements and fixes.

For information about all supported systems, see "Supported storage systems" on page 5. For information on VMware platforms, see "Supported VMware platforms" on page 6.

| Ticket ID | Description |
|---|---|
| **VPSD-258691** | **Enhancement:** Added support for the IBM DS8000 SE FlashCopy.<br>**Note:** To restore from SE FlashCopy, upgrade CIM to version 5.7.4.10 or later. |
| **VPSD-258686** | **Enhancement:** Added support for configuring Soap timeout for the VMware platform, from the `ibmvcfg.exe` file. |
| **VPSD-258699** | **Fixed:** Handle exception within VMware RDM adding function: `addRDMArrToVM(String [])` |
| **VPSD-258715** | **Fixed:** When masking LUNs, removing disks from VM fails, but VSS continues to move LUN from ESXi to the reserved pool. |
| **VPSD-258717** | **Fixed:** Disabled SSLv3 to avoid man-in-the-middle (POODLE) attacks. |

## 4.8.0 (June 2014)

IBM Storage Support for Microsoft Volume Shadow Copy Service and Virtual Disk Service 4.8.0 included a name change from IBM System Storage® Support for Microsoft Volume Shadow Copy Service and Virtual Disk Service to IBM Storage Support for Microsoft Volume Shadow Copy Service and Virtual Disk Service.

For information about all supported systems, see "Supported storage systems" on page 5. For information on VMware platforms, see "Supported VMware platforms" on page 6.

Additional changes in version 4.8.0:

| Ticket ID | Description |
|---|---|
| **VPSD-258678** | **Enhancement:** Supporting CSV backup, which contains the VM. |
| **VPSD-258679** | **Enhancement:** Added support for Windows Server 2012 R2 Failover Cluster. |
| **VPSD-258680** | **Enhancement:** Integrated `ibmrescan.exe` into `ibmvss.exe`. There is no need to copy the `ibmrescan.exe` file to the Microsoft Hyper-V host nor to configure the **`rescandevicecmd`** parameter with the `ibmvcfg.exe` file. |

## 4.7.0.1 (January 2014)

IBM Storage Support for Microsoft Volume Shadow Copy Service and Virtual Disk Service 4.7.0.1 added the following critical fix.

| Ticket ID | Description |
|---|---|
| **VPSD-258668** | **Fixed:** The installation gets stuck in a loop if the CIMOM user name or password is not configured correctly. |

## 4.7.0 (December 2013)

IBM Storage Support for Microsoft Volume Shadow Copy Service and Virtual Disk Service 4.7.0 added support for IBM Storwize V5000 and for Microsoft Hyper-V.

For information about all supported systems, see "Supported storage systems" on page 5. For information on VMware platforms, see "Supported VMware platforms" on page 6.

Additional changes for version 4.7.0:

| Ticket ID | Description |
|---|---|
| **VPSD-258618** | **Fixed:** Removed the limitation of configuring an individual free storage pool for each host. |
| **VPSD-258619** | **Fixed:** 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. |

## 4.6.0 (September 2013)

IBM Storage Support for Microsoft Volume Shadow Copy Service and Virtual Disk Service 4.6.0 added support for several storage systems and VMware platforms.

For information about all supported systems, see "Supported storage systems" on page 5. For information on VMware platforms, see "Supported VMware platforms" on page 6.

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

## 4.5.0 (June 2013)

IBM Storage Support for Microsoft Volume Shadow Copy Service and Virtual Disk Service 4.5.0 included two notable changes.

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

## 4.4.0 (February 2013)

IBM Storage Support for Microsoft Volume Shadow Copy Service and Virtual Disk Service 4.4.0 included the following change.

| Ticket ID | Description |
|---|---|
| **VPSD-246573** | The VDS provider is not automatically registered after installation. |

# Known issues

The issues listed below apply to IBM Storage Support for Microsoft Volume Shadow Copy Service and Virtual Disk Service 4.17.0 or earlier versions.

| Ticket ID | Description |
|---|---|
| **VPSD-245364** | When Microsoft Data Protection Manager (DPM) creates FlashCopy for the shared source volume, if the space-efficient volume and copy rate are zero, a cascading FlashCopy is created unexpectedly. Deleting the cascading FlashCopy causes an error to the target volumes.<br><br>**Workaround:** Set the background copy rate above zero when you use the space efficient volume in Microsoft DPM. |
| **VPSD-258716** | When you open an administrator command prompt in Microsoft Windows Server 2012 or 2012 R2 and create a Volume Shadow Services (VSS) DiskShadow snapshot, you might produce a message similar to the following output:<br><br>`DISKSHADOW> add volume c:`<br><br>`DISKSHADOW> create`<br><br>`COM call "lvssObject4->GetRootAndLogicalPrefixPaths" failed.`<br><br>This type of COM call failure message is harmless, and despite the message, the ShadowCopy backup completes successfully. For more details, refer to the Microsoft Knowledge Base article. |
| **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.<br><br>Currently there is no solution or workaround for this limitation. |
| **VPSD-258653** | Supports only the embedded CIM Agent that is packaged with the VSS VDS code.<br><br>Currently there is no solution or workaround for this limitation. |
| **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 storage pool.<br><br>Currently there is no solution or workaround for this limitation. |

| Ticket ID | Description |
|---|---|
| **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 storage pool. The snapshot IDs of earlier FlashCopy volumes stay in the host until the next snapshot/restore is run. Alternatively, **`ibmvcfg.exe cleanupDependentMaps`** can be used to manually clean up the snapshot IDs of earlier FlashCopy volumes.<br><br>Currently there is no solution or workaround for this limitation. |
| **VPSD-258657** | Before using the IBM Virtual Disk Service, Java™ JRE 7.0 must be installed. For example, **`ibm-java-jre-70-win-i386.exe`** or **`ibm-java-jre-70-win-x86_64.exe`**.<br><br>Currently there is no solution or workaround for this limitation. |
| **VPSD-258658** | Starting from version 4.4.0, IBM VDS provider is not automatically registered after installation.<br><br>**Workaround:** To manually register IBM VDS provider, issue the **`regsvr32 ibmvds.dll`** command under the directory of the IBM VSS provider. |
| **VPSD-258805** | To avoid problems when upgrading from a VSS VDS main version to its sub-version, uninstall the main version first. Then install its sub-version with the default configuration and double-click the `cfg.reg` file, which is generated in the installation path, to restore the configuration.<br><br>Currently there is no solution or workaround for this limitation. |
| **VPSD-258759** | For DS8000 storage systems, a source volume can be restored only once if it is involved in either of the following cases:<br><br>• The FlashCopy is non-incremental, and either the source volume or the target volume is an SE volume.<br>• The FlashCopy is non-incremental, and the background copy rate is 0.<br><br>Currently there is no solution or workaround for this limitation. |
| **VPSD-258791** | If a virtual machine (VM) that is booted via UEFI is detected by VSS VDS, it is not recognized as a VM, because a VM booted via UEFI produces different SMBIOS data from one booted via BIOS.<br><br>**Workaround:** Boot VMs via BIOS, not UEFI. |
| **VPSD-258794** | While cascaded FlashCopy mappings for dynamic target volume allocation are being deleted, FlashCopies created dynamically before the deleted ones are moved to a free pool instead of being removed.<br><br>Currently there is no solution or workaround for this limitation. |
| **VPSD-258795** | In a cascading environment, VSS VDS does not support restoration of a transportable FlashCopy while using a passthrough connection.<br><br>Currently there is no solution or workaround for this limitation. |

| Ticket ID | Description |
| --- | --- |
| **VPSD-258827** | XIVVSS does not function well and cannot be uninstalled completely if installed in the same environment as SVCVSS. There is, however, a workaround to uninstall XIVVSS completely.<br>**Workaround:** To uninstall XIVVSS completely if it has been installed in the same environment as SVCVSS, complete the following steps:<br>1. Uninstall SVCVSS.<br>2. Reinstall XIVVSS.<br>3. Under the install root path (the default root path is `C:\Program Files\IBM\IBM XIV Provider for Microsoft Windows Volume Shadow Copy Service`), change directories by entering the command `cd Native`.<br>4. Run `regsvr32 /u xProv.dll`.<br>5. Uninstall XIVVSS in the control panel.<br>6. If the above steps do not work the first time, try them again. |

# Related information and publications

You can find more information and publications that are related to the IBM Storage Support for Microsoft VSS and VDS.

- IBM Documentation
- IBM DS8800 in IBM Documentation
- IBM Storwize V3500 in IBM Documentation
- IBM Storwize V3700 in IBM Documentation
- IBM Storwize V5000 Gen2 / V5000E / V5100 and FlashSystem 5000 / 5100 in IBM Documentation
- IBM Storwize V7000 and FlashSystem 7200 in IBM Documentation
- IBM Storwize V7000 Unified in IBM Documentation
- IBM SAN Volume Controller (2145 and 2147) in IBM Documentation
- IBM DS8880 in IBM Documentation
- IBM DS8900 in IBM Documentation
- IBM FlashSystem 9100 / 9200 in IBM Documentation
- IBM FlashSystem V9000 in IBM Documentation
- VMware Product Support for VMware vSphere , including support for ESX, ESXi, and vCenter.
- VMware Knowledge Base
- Microsoft MSDN web page for Volume Shadow Copy Service
- Microsoft Windows Server Troubleshooting Center

# Getting information, help, and service

If you need help, service, technical assistance, or want more information about IBM products, you can find various sources to assist you. You can view the following websites to get information about IBM products and services and to find the latest technical information and support.

- IBM
- IBM Publications Center
- IBM Directory of Worldwide Contacts

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