

IBM Storage Support for Microsoft Volume
Shadow Copy Service and Virtual Disk Service
4.19.1

Release notes



First Edition (February 2023)

This edition applies to IBM® Storage Support for Microsoft Volume Shadow Copy Service and Virtual Disk Service 4.19.1 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 Storage Support for Microsoft Volume Shadow Copy Service (VSS) and Virtual Disk Service (VDS) for 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 Storwize Family storage systems.

You can download the IBM Storage Support for Microsoft VSS and VDS at the [IBM Fix Central website](http://www.ibm.com/support/fixcentral/) (www.ibm.com/support/fixcentral/).

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

What's new in 4.19.1

IBM Storage Support for Microsoft Volume Shadow Copy Service and Virtual Disk Service 4.19.1 is a maintenance release, resolving a usability issue and replacing version 4.19.0.

Important: Version 4.19.1 replaces version 4.19.0.

Now uses a RESTful API server for invoking storage CLI instead of CIM client

(Originally introduced in 4.19.0) IBM Storage Support for Microsoft Volume Shadow Copy Service and Virtual Disk Service now uses a RESTful API server (Representational State Transfer (REST) model application programming interface) instead of a CIM client for invoking the storage command-line interface (CLI).

Resolved Issue

For information about the resolved issue, refer to [“4.19.1 \(February 2023\)”](#) on page 7.

Compatibility and requirements

This section specifies the compatibility and requirements of the IBM Storage Support for Microsoft VSS and VDS 4.19.1.

Supported operating systems

IBM Storage Support for Microsoft VSS and VDS 4.19.1 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
Microsoft Windows Server 2022	None	x64

Note: Only NTFS volumes are supported.

Supported storage systems

IBM Storage Support for Microsoft VSS and VDS 4.19.1 supports the following storage systems.

Note: Starting from IBM Storage Support for Microsoft VSS and VDS 4.19.1, following storage systems are no longer supported:

- IBM DS8000 family storage systems
- Spectrum Virtualize software products 8.3.0 or earlier

IBM storage system	Microcode version
IBM SAN Volume Controller, IBM Storwize, IBM FlashSystem families built with Spectrum Virtualize software (including 5xxx, 7xxx, 9xxx, V3xxx, V5xxx, V7xxx)	8.3.1.0 or later, 8.4.x, 8.5.x

Note:

- Spectrum Virtualize family (including Storwize, FlashSystem, and SAN Volume Controller) microcode versions 8.4.x and 8.5.x include both LTS and Non-LTS releases. For more information, see [IBM Spectrum Virtualize FAQ for Continuous Development \(CD\) Release Model for software releases on IBM Support \(ibm.com/support\)](#).
- For a full list of beginning and end of supported Spectrum Virtualize products, see the [Lifecycle and support matrix page](#) in IBM Documentation.
- 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 supports 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	<ul style="list-style-type: none"> Microsoft Hotfix KB959476 (support.microsoft.com/kb/959476)
	Service Pack 2	<ul style="list-style-type: none"> Microsoft Hotfix KB972135 (support.microsoft.com/kb/972135) Microsoft Hotfix KB2528357 (support.microsoft.com/kb/2528357)
	None	<ul style="list-style-type: none"> Microsoft Hotfix KB975688 (support.microsoft.com/kb/975688) Microsoft Hotfix KB2637197 (support.microsoft.com/kb/2637197) Microsoft Hotfix KB2661794 (support.microsoft.com/kb/2661794) Microsoft Hotfix KB2528357 (support.microsoft.com/kb/2528357)
Windows Server 2012	None	<ul style="list-style-type: none"> Microsoft Hotfix KB2916993 (support.microsoft.com/kb/2916993) Microsoft Hotfix KB2929869 (support.microsoft.com/kb/2929869) Microsoft Hotfix KB2913695 (support.microsoft.com/kb/2913695) Microsoft Hotfix KB2878635 (support.microsoft.com/kb/2878635) Microsoft Hotfix KB2894464 (support.microsoft.com/kb/2894464) Microsoft Hotfix KB2838043 (support.microsoft.com/kb/2838043) Microsoft Hotfix KB2803748 (support.microsoft.com/kb/2803748) Microsoft Hotfix KB2770917 (support.microsoft.com/kb/2770917) Microsoft Hotfix KB976424 (support.microsoft.com/kb/976424)
Windows Server 2012 R2	None	<ul style="list-style-type: none"> Microsoft Hotfix KB2955164 (support.microsoft.com/kb/2955164) Microsoft Hotfix KB2919355 (support.microsoft.com/kb/2919355) Microsoft Hotfix KB976424 (support.microsoft.com/kb/976424)
Windows Server 2019	None	<ul style="list-style-type: none"> Microsoft Hotfix KB4469342 (support.microsoft.com/kb/4469342)

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.

4.19.1 (February 2023)

IBM Storage Support for Microsoft Volume Shadow Copy Service and Virtual Disk Service 4.19.1 replaces 4.19.0, using a RESTful API server for invoking storage CLI and adding introduced the following fix:

Ticket ID	Description
VPSD-258874	Fixed: The IBM Storage Support for Microsoft VSS and VDS 4.19.0 backup drive is not being created successfully. When this occurs, the ERROR_INVALID_FUNCTION is emitted.

4.19.0 (September 2022)

IBM Storage Support for Microsoft Volume Shadow Copy Service and Virtual Disk Service 4.19.0 uses a RESTful API server for invoking storage CLI.

4.18.0 (December 2021)

IBM Storage Support for Microsoft Volume Shadow Copy Service and Virtual Disk Service 4.18.0 introduced the following fix:

Ticket ID	Description
VPSD-258844	Fixed: Common security issue. For more information about this security issue, see CVE-2021-45046 on the Common Vulnerabilities and Exposures (CVE) information website (cve.mitre.org).

4.17.0 (September 2021)

IBM Storage Support for Microsoft Volume Shadow Copy Service and Virtual Disk Service 4.17.0 added support for TLS 1.2 and 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 .

Ticket ID	Description
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 <code>ibmvcfg set username/password</code> fails. The new error message reads: The key has been successfully set. 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	<p>Fixed: For DS8000 storage systems, if a source volume had multiple target volumes, restore from one of the target volumes would fail.</p> <p>Note: This issue existed since IBM Storage Support for Microsoft VSS and VDS 4.9.0.</p>

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.

Limitations

As opposed to known issues, limitations are functionality restrictions that are part of the predefined system design and capabilities in a particular version.

HyperSwap volume limitation

IBM Storage Support for Microsoft VSS and VDS does not support HyperSwap volumes.

Virtual hard disk limitation

IBM Storage Support for Microsoft VSS and VDS does not support virtual hard disks. This applies even when they are supported on the Spectrum Virtualize LUN.

Known issues

The issues listed below apply to IBM Storage Support for Microsoft Volume Shadow Copy Service and Virtual Disk Service 4.19.1 or earlier versions.

Note: Starting from IBM Storage Support for Microsoft VSS and VDS 4.19.0, the following configurations are no longer supported:

- IBM DS8000 family storage systems
- Spectrum Virtualize software products 8.4.0 or earlier
- CIM Server

Ticket ID	Description
VPSD-245364	<p>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.</p> <p>Workaround: Set the background copy rate above zero when you use the space efficient volume in Microsoft DPM.</p>
VPSD-258716	<p>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:</p> <pre data-bbox="625 993 1464 1220">DISKSHADOW> add volume c : DISKSHADOW> create COM call "lvssObject4->GetRootAndLogicalPrefixPaths" failed.</pre> <p>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 (http://support.microsoft.com/kb/3025158).</p>
VPSD-258651	<p>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.</p> <p>Currently there is no solution or workaround for this limitation.</p>
VPSD-258655	<p>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.</p> <p>Currently there is no solution or workaround for this limitation.</p>

Ticket ID	Description
VPSD-258656	<p>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.</p> <p>Currently there is no solution or workaround for this limitation.</p>
VPSD-258657	<p>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.</p> <p>Currently there is no solution or workaround for this limitation.</p>
VPSD-258658	<p>Starting from version 4.4.0, IBM VDS provider is not automatically registered after installation.</p> <p>Workaround: To manually register IBM VDS provider, issue the regsvr32 ibmvds.dll command under the directory of the IBM VSS provider.</p>
VPSD-258805	<p>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 <code>cfg.reg</code> file, which is generated in the installation path, to restore the configuration.</p> <p>Currently there is no solution or workaround for this limitation.</p>
VPSD-258791	<p>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.</p> <p>Workaround: Boot VMs via BIOS, not UEFI.</p>
VPSD-258794	<p>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.</p> <p>Currently there is no solution or workaround for this limitation.</p>
VPSD-258795	<p>In a cascading environment, VSS VDS does not support restoration of a transportable FlashCopy while using a passthrough connection.</p> <p>Currently there is no solution or workaround for this limitation.</p>

Ticket ID	Description
VPSD-258827	<p>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.</p> <p>Workaround: To uninstall XIVVSS completely if it has been installed in the same environment as SVCVSS, complete the following steps:</p> <ol style="list-style-type: none"><li data-bbox="623 386 873 415">1. Uninstall SVCVSS.<li data-bbox="623 428 867 457">2. Reinstall XIVVSS.<li data-bbox="623 470 1459 596">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 <code>cd Native</code>.<li data-bbox="623 609 1057 638">4. Run <code>regsvr32 /u xProv.dll</code>.<li data-bbox="623 651 1105 680">5. Uninstall XIVVSS in the control panel.<li data-bbox="623 693 1370 722">6. If the above steps do not work the first time, try them again.

Related information and publications

You can find additional information and publications related to the IBM Storage Support for Microsoft VSS and VDS at the following websites.

- [IBM SAN Volume Controller in IBM Documentation](http://ibm.com/docs/en/sanvolumecontroller) (ibm.com/docs/en/sanvolumecontroller)
- [IBM FlashSystem 5200, 5000, 5100, Storwize V5100 and V5000E in IBM Documentation](http://ibm.com/docs/en/flashsystem-5x00) (ibm.com/docs/en/flashsystem-5x00)
- [IBM FlashSystem 7300, 7200 and Storwize V7000 in IBM Documentation](http://ibm.com/docs/en/flashsystem-7x00) (ibm.com/docs/en/flashsystem-7x00)
- [IBM FlashSystem 9500, 9200 and 9100 in IBM Documentation](http://ibm.com/docs/en/flashsystem-9x00) (ibm.com/docs/en/flashsystem-9x00)
- [VMware Product Support for VMware vSphere](http://vmware.com/support/product-support/vsphere) (vmware.com/support/product-support/vsphere), including support for ESX, ESXi, and vCenter.
- [VMware Knowledge Base](http://kb.vmware.com) (kb.vmware.com)
- [Microsoft MSDN web page for Volume Shadow Copy Service](http://msdn.microsoft.com/en-us/library/bb968832.aspx) (msdn.microsoft.com/en-us/library/bb968832.aspx)
- [Microsoft Windows Server Troubleshooting Center](http://technet.microsoft.com/en-us/windowsserver) (technet.microsoft.com/en-us/windowsserver)

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