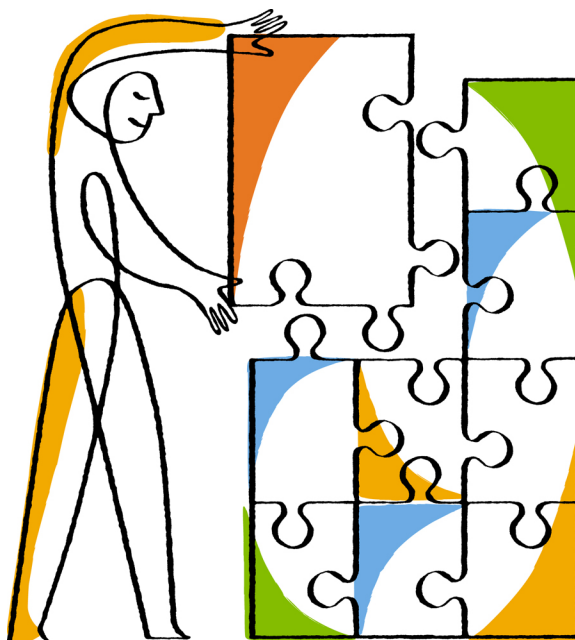




## SnapDrive® 7.0 for Windows®

### Release Notes



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# SnapDrive 7.0 for Windows Release Notes

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The release notes for SnapDrive 7.0 for Windows provide you with important information about new features, installation and system requirements, fixed issues, and known issues for SnapDrive 7.0 for Windows.

## New features in SnapDrive 7.0 for Windows

You should be aware of new SnapDrive 7.0 for Windows features, including support for clustered Data ONTAP 8.2, PowerShell cmdlets to support SnapDrive workflows in SMB 3.0 environments, SIS clone restore optimization, active file system cloning support for SnapManager for Hyper-V automatic recovery workflows, and SnapVault in clustered Data ONTAP.

### Clustered Data ONTAP 8.2 support

SnapDrive 7.0 for Windows support for clustered Data ONTAP 8.2 includes a number of new features:

- IPv6
- SnapVault operations
- SMB 3.0 support

### Restore operation performance improvements

SnapDrive 7.0 for Windows introduces support for sub-LUN cloning in restore operations.

SnapDrive computes the logical block address (LBA) used by the VHD files in your Snapshot backup. SnapDrive does this by finding the NTFS retrieval pointers and translating the logical clusters to actual physical disk offsets. Next, SnapDrive computes the LBA range for the VHD in the destination. With both the source and destination LBA ranges, SnapDrive leverages the Data ONTAP SIS-clone technology to clone the block ranges from the source VHD file from the Snapshot backup to the active file system.

**Note:** This feature is not available for VMDKs and disks with an allocation unit size less than 4096/4 KB.

### PowerShell cmdlet support

SnapDrive 7.0 introduces PowerShell cmdlet support for SnapDrive operations in SMB 3.0. The SnapDrive PowerShell cmdlet module also provides limited SAN workflow support. PowerShell cmdlets support SnapDrive provisioning, Snapshot copy management, and backup, restore, mounting, SnapMirror, and SnapVault operations.

Windows PowerShell versions 2.0 and later are supported.

For detailed information about running SnapDrive PowerShell cmdlets, see the *SnapDrive for Windows Administration Guide for SMB 3.0 Environments* and the *SnapDrive for Windows PowerShell Cmdlet Reference Guide*.

## **Volume and share provisioning templates**

The installation folder contains three sample provisioning templates that you can use for SMB provisioning. The provisioning templates have volume or share creation settings based on best practices built into them. In addition, you can also create new templates and override settings from the existing provisioning templates.

For more information about provisioning templates, see the *SnapDrive for Windows Administration Guide for SMB 3.0 Environments* and the *SnapDrive for Windows PowerShell Cmdlet Reference Guide*.

## **Additional new features**

- Virtual Fibre Channel support
- group Managed Service Accounts (gMSA) support on Windows Server 2012

## Highlighted fixed issues in SnapDrive 7.0 for Windows

---

SnapDrive 7.0 for Windows includes many bug fixes.

### **Incorrect LUN size displayed**

SnapDrive might incorrectly display LUNs as 0 MB if the preferred storage system IP address is not configured.

### **SnapDrive fails to enumerate mount points**

SnapDrive fails to enumerate mount point paths, and does not log this error.

### **sdcli should accept both -d and -D for mount points**

`sdcli` should accept both `-d` and `-D` options for mount point input, where `-d` and `-D` have the following meanings:

**-d**

Specifies a single mountpoint.

**-D**

Specifies a list of mountpoints, volume names, or CSV repare points.

### **SnapDrive fails to enumerate all VMDKs on all SCSI controllers**

If you have an environment with multiple VMware SCSI controllers in a Windows Server 2008 R2 VM, with multiple VMDKs attached, SnapDrive inconsistently enumerates all your disks. This is likely to happen in cases where the controllers are removed randomly, and when the Windows registry does not have the controller's index mapping in sequence.

### **SnapDrive fails to process tasks**

On a Windows guest VM hosted on an ESX server with no initiators, SnapDrive fails to complete space reclamation and vCenter configuration tasks.

### **SnapDrive space reclamation can fail with the error "The LBA range cannot exceed 32768 disk blocks" when running with ONTAP 8.1**

A Data ONTAP 8.1 NetApp Manageability SDK reduced the maximum amount of sectors that can be reclaimed by the SnapDrive NetApp Manageability SDK call to 32768 sectors (16 MB).

Because SnapDrive can ask for a reclamation size of up to 1024 clusters, any cluster size of 16 KB or greater, and used on a LUN, can cause space reclamation to fail after removing large amounts of data on the virtual disk.

The failure is not immediately apparent, and the interface shows no error. However, the space reclamation is performed much too quickly, and going back into space reclamation still shows the amount to be reclaimed (or somewhat less, if smaller sections were reclaimable.) The error appears only in the application event log.

### **SnapDrive fails to obtain a license on a storage system if a VMDK has both a drive letter and mount point**

SnapManager backup operations with both mount points and drive letters configured might fail with the following error message: SnapManager for SQL Server either has invalid per-server license key or is not licensed on the filer where the LUN is stored, or failed to get license information from SnapDrive.

### **SnapDrive should set the preferred IP address during installation**

The SnapDrive installation wizard should configure the preferred storage system IP address during the installation and setup process.

### **Clustered Data ONTAP LUN enumeration fails when the default transport protocol is disabled**

LUN enumeration operations with SnapDrive in a clustered Data ONTAP environment fail if the default transport protocol is disabled.

### **Drive letter for LUN is lost after restore operation in SnapMirror disaster recovery**

The LUN drive letter is lost during a SnapMirror disaster recovery that includes a Snapshot backup copy restore operation from a LUN connected on the secondary storage system.

### **SnapDrive service crashes when attempting to browse archive backups within SnapManager for Exchange**

SnapDrive service crashes during enumeration of SnapVault archived backups within SnapManager for Exchange and causes a communication error between SnapManager for Exchange and SnapDrive.

### **SnapDrive service crashes if your credentials are not part of the local Administrators group**

The SnapDrive service cannot be started if the service account is not a member of the local Administrators group.

**Snapshot backup copy failed but Snapshot entry is still available on the volume**

Snapshot backup copy operations fail with a VSS\_PROVIDER\_VETO error, but the Snapshot backup copy entry is still available on the volume.

## Known issues

---

Some unexpected and potentially undesired behaviors are known to affect functionality in this release of SnapDrive for Windows. You can take actions to work around some of these behaviors.

### Failure to disconnect a FlexClone volume disk

|                          |                                                                                                                                                                                                                                                                                                                                                                                     |
|--------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Issue</b>             | Your FlexClone volume disk disconnect operations fail if SMI-S Agent and SnapDrive are using the same virtual storage server.                                                                                                                                                                                                                                                       |
| <b>Cause</b>             | FlexClone volume disk disconnect operations fail when the following conditions apply: <ul style="list-style-type: none"> <li>• Data ONTAP SMI-S Agent and SnapDrive are using the same virtual storage server.</li> <li>• Your FlexClone volume was created by SnapDrive.</li> <li>• The disk you are trying to disconnect is the last disk you connected in the volume.</li> </ul> |
| <b>Corrective action</b> | There is no workaround for this issue.                                                                                                                                                                                                                                                                                                                                              |

### Error description: No such LUN exists

|                          |                                                                                                                                                                                                                                                                                                                                                                                                                              |
|--------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Message</b>           | <pre> DeleteTargetLun failed.  Storage System Name = vserver_dev lunPath = /vol/vol1/Data_Repository_02.vss.{d7e1fafe- c768-4e43-9b35-7bf8fb73e3de} Error code = 0xc0040300 Error description = ZAPI: An attempt to get serial number of the LUN '/vol/vol1/Data_Repository_02.vss.{d7e1fafe- c768-4e43-9b35-7bf8fb73e3de}' failed on the storage system vserver_dev. Error description: No such LUN exists           </pre> |
| <b>Description</b>       | This message occurs when SnapDrive attempts to delete a LUN in the format <LUN-PATH>.vss.<SNAPSHOT_SET_GUID> which is not present.                                                                                                                                                                                                                                                                                           |
| <b>Corrective action</b> | You can safely ignore this error message.                                                                                                                                                                                                                                                                                                                                                                                    |

## Issues when Microsoft KB 2729452 or 2742599 are installed on Windows Guest with SnapDrive and ESX integration

|                          |                                                                                                                                                                                                                                                                                                                |
|--------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Issue</b>             | After installing important security updates to .NET Framework 3.5.1 in KB 2729452 and KB 2742599, you might experience six-minute to eight-minute restart delays on VMs with ESX Integration enabled in SnapDrive.                                                                                             |
| <b>Cause</b>             | In some cases, this problem manifests as a normal reboot but resulting in no network connectivity, or a normal start but SnapDrive unable to enumerate LUNs for an extended period of time. Since these are important security updates, it is not recommended to uninstall the updates to address the problem. |
| <b>Corrective action</b> | <p>To work around this issue, set WinHTTP Web Proxy Auto-Discovery Service start type to automatic.</p> <p>For additional information, see Microsoft KB article 2859162 at <a href="http://support.microsoft.com/kb/2859162">http://support.microsoft.com/kb/2859162</a>.</p>                                  |

## Live migration of clustered VMs fails

|                          |                                                                                                                                                                                               |
|--------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Issue</b>             | Live migration of VMs connected to a storage system over virtual Fibre Channel (vFC) fails.                                                                                                   |
| <b>Cause</b>             | SnapDrive 7.0 does not support vFC on a clustered physical Hyper-V.                                                                                                                           |
| <b>Corrective action</b> | There is no workaround for this issue. However, you can perform live migration operations on VMs connected to a storage system using vFC on a standalone, or non-clustered, physical Hyper-V. |

## SnapDrive PowerShell 2.0 module does not automatically import when upgrading on Windows Server 2008 R2 systems

|                          |                                                                                                                                                                   |
|--------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Issue</b>             | When you upgrade from SnapDrive 6.5 to SnapDrive 7.0 on Windows Server 2008 R2 systems, the SnapDrive PowerShell 2.0 cmdlet module is not automatically imported. |
| <b>Corrective action</b> | <p>Manually import the SnapDrive module by entering the following command:</p> <pre><b>import-module -name snapdrive</b></pre>                                    |

## VMDK SnapRestore operations inconsistently restore data

**Issue** When you perform VMDK SnapRestore operations on a VM running Windows Server 2012 and ESX 5.0U2, data is not restored.

**Corrective action**

1. Manually edit the VMX file of the VM disk by adding **disk.EnableUUID="TRUE"**.
2. Save the VMX file.
3. Upload the VMX file back to the datastore.
4. Create your new VMDK.

This workaround is not applicable to existing VMs or VMs upgraded from ESX versions prior to ESX 5.0U2.

## Features not supported in SnapDrive for clustered Data ONTAP

You should be aware of some of the features that are not supported in SnapDrive 7.0 for clustered Data ONTAP.

- RPC transport protocol
- High-availability single sign-on
- File-based thin provisioning configuration
- Mixed-mode licensing in the SnapDrive host server

## Known Virtual Storage Console issues and limitations

Using Virtual Storage Console with SnapDrive results in some known issues and limitations.

### Trouble viewing Snapshot copies after VMDK migration

**Description** When you migrate a VMDK disk from one VM to another, the Snapshot copies made before the migration cannot be listed in the destination VM.

**Corrective action** There is no corrective action.

## Independent disks are excluded during backup when VMware snapshots are used

|                          |                                                                                                                                                                                                                                                              |
|--------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Description</b>       | When a VMware snapshot of a VMDK already exists, you cannot use a SnapDrive Snapshot copy created on an independent disk (persistent or non-persistent) to mount or restore a VMDK.                                                                          |
| <b>Corrective action</b> | <p>To use a SnapDrive Snapshot copy created on an independent disk to mount or restore a VMDK, perform the following steps:</p> <ol style="list-style-type: none"> <li>1. Remove the VMware snapshot.</li> <li>2. Create a Snapshot copy of VMDK.</li> </ol> |

## You cannot automatically rename CSV reparse points

|                          |                                                                                                                                           |
|--------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Description</b>       | You cannot automatically rename CSV reparse points when you are creating or connecting to a LUN.                                          |
| <b>Corrective action</b> | <p>You can manually rename the CSV reparse points by going to C:\ClusterStorage and renaming the folder, as in the following example:</p> |

```

C:\>cd
C:\ClusterStorage

C:\ClusterStorage>dir
Volume in drive C has no label.
Volume Serial Number is CCAA-62F5

Directory of C:\ClusterStorage

09/21/2012  06:45 AM    <DIR>          .
09/21/2012  06:45 AM    <DIR>          ..
09/20/2012  07:21 AM    <DIR>          Volume2
               0 File(s)                0 bytes
               3 Dir(s)  392,206,770,176 bytes free

C:\ClusterStorage>ren Volume2 RENAMED_VOLUME2

C:\ClusterStorage>dir
Volume in drive C has no label.
Volume Serial Number is CCAA-62F5

Directory of C:\ClusterStorage

09/27/2012  03:17 AM    <DIR>          .
09/27/2012  03:17 AM    <DIR>          ..
09/20/2012  07:21 AM    <DIR>          RENAMED_VOLUME2
               0 File(s)                0 bytes
               3 Dir(s)  392,206,770,176 bytes free

```

## You cannot create an RDM LUN larger than 2 TB when SnapDrive is configured with vCenter credentials

|                          |                                                                                                                                                                                                                                                                               |
|--------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Message</b>           | <b>Incompatible device backing specified for device 0</b>                                                                                                                                                                                                                     |
| <b>Description</b>       | This message occurs when you attempt to create a raw device mapping (RDM) LUN larger than 2 TB on VMFS V 5 DataStore when SnapDrive is configured with vCenter credentials.                                                                                                   |
| <b>Corrective action</b> | There is no workaround for this issue; however, you can create an RDM LUN greater than 2 TB on VMFS V 5 DataStore if SnapDrive is registered with ESX credentials instead of vCenter credentials.<br><br>For additional information, contact VMware regarding SR 12219571409. |

## Error adding raw device mapping -GetLunInformation returned false

|                          |                                                                                                                                                       |
|--------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Message</b>           | Error adding raw device mapping -GetLunInformation returned false.                                                                                    |
| <b>Description</b>       | This message occurs when you run the <code>sdcli disk create</code> command in a virtual machine and the VMware ESX device paths are no longer valid. |
| <b>Corrective action</b> | Remove the invalid paths on the ESX server and run the <code>disk create</code> command again.                                                        |

## Snapshot copy LUN import operations fail when mounting to a Windows Server 2008 R2 host

|              |                                                                                                                                                                                                                                                                                                                                                                                                             |
|--------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Issue</b> | In SAN booting scenarios, operations that try to import (mount) a Snapshot copy LUN to the host fail, including file-level restore operations for files in the boot LUN, generic Snapshot copy mount operations for copying files or file verification by third-party tools, and VSS Snapshot copy operations on scenarios that require Snapshot copy mount.                                                |
| <b>Cause</b> | This issue occurs when you are using the system-reserved partition introduced by Microsoft in Windows Server 2008 R2. The system-reserved partition is created by the Windows installer during a fresh installation unless you choose not to include the boot LUN system recovery option. The failure occurs only if the system-reserved partition is on the boot volume when the Snapshot copy is created. |

- |                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|--------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Corrective action</b> | <p>You can avoid this problem in one of three ways, depending on your environment:</p> <ul style="list-style-type: none"> <li>• During Windows installation, choose the option not to create the recovery partition.</li> <li>• Delete the recovery partition later, if possible.</li> <li>• If you are using Windows Server 2008 before upgrading to Windows Server 2008 R2, choose the option to upgrade rather than performing a fresh installation.</li> </ul> |
|--------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## Drive letter missing for MBR disk during a SnapRestore operation

- |                          |                                                                                                                                                                                                                                                                                                                                                                                         |
|--------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Issue</b>             | In versions of Windows Server prior to 2012, the MBR disk drive letter is missing during SnapRestore operations.                                                                                                                                                                                                                                                                        |
| <b>Cause</b>             | This issue occurs when the size of the LUN and the Snapshot copy LUN do not match.                                                                                                                                                                                                                                                                                                      |
| <b>Corrective action</b> | <ol style="list-style-type: none"> <li>1. Go to <code>diskmgmt.msc</code> and locate the disk independent of the drive letter or mount point.</li> <li>2. Right-click the disk and assign it the appropriate drive letter.</li> <li>3. Ignore the <b>Format disk</b> dialog box.</li> <li>4. Refresh SnapDrive MMC and the disk, and its assigned drive letter is displayed.</li> </ol> |

## Pass-through disk might not be listed after it is restored to a smaller size

- |                          |                                                                                                                                                                                                                                                                                                                                                                                  |
|--------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Issue</b>             | After you restore a pass-through disk to a smaller size, it is not listed when you try to view all the LUNs connected to the host. As part of the Snapshot copy restore operation, SnapDrive dismounts and remounts the disk back to the host. During the remount operation, the Microsoft Windows Format dialog sometimes displays. This blocks SnapDrive from seeing the disk. |
| <b>Corrective action</b> | <ol style="list-style-type: none"> <li>1. Click <b>Cancel</b> in the format dialog box.</li> <li>2. Open the Disk Management Console in the MMC.</li> <li>3. Rescan all the disks.</li> <li>4. Refresh the Disks list in the MMC snap-in by using either of the following methods:</li> </ol>                                                                                    |

- Open the SnapDrive MMC, right-click **Disks**, and click **Refresh**.
- In the command-line interface, enter the `sdcli disk list` command.

The restored pass-through disk displays in the list.

## Documentation changes

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Because SnapDrive for Windows changes between releases, information contained in the documentation changes as well. You can be sure that you have the latest information by monitoring the NetApp Support Site for updates to the Release Notes, including documentation corrections.

### Changes to "Using SnapDrive in Microsoft environments"

You should be aware of some updates and changes to the text titled "Using SnapDrive in Microsoft environments."

### Interoperability issues with Windows Server 2012

You should be aware of some limitations when deploying Windows Server 2012 on SnapDrive 7.0 for Windows.

- The Windows Host Utility kit for Windows disables the Windows Server 2012 native space reclamation feature.
- Data ONTAP does not support Windows Server 2012 native thin provisioning.
- You cannot perform storage replication from Hyper-V Replica.
- You should not perform any SnapDrive disk-related operations on the LUN hosting the virtual machines during live virtual machine migration and storage migration.
- Although Windows Server 2012 allows you to create a disk larger than 16 TB, you cannot create a Data ONTAP LUN larger than 16 TB.
- When you add new nodes to your cluster on Windows Server 2012, you must remap the LUNs to the new nodes.
- Windows Host Utility kit is mandatory for Windows Server 2012, on both physical and guest operating systems.

### Hyper-V pass-through disk support limitations

SnapDrive supports Hyper-V pass-through disks; however, there are some limitations related to this feature.

- SnapDrive does not support direct-attached storage to a Hyper-V parent host. Only Data ONTAP iSCSI and FC LUNs are supported.
- SnapDrive does not support LUNs already mapped to a Hyper-V parent host. A pass-through disk must be freshly provisioned from a storage system to be added dynamically.
- Windows 2008 R2 does not support pass-through disks using IDE. Windows 2008 R2 supports only SCSI disks.
- Microsoft cluster shared volume (CSV) disks are not supported.

- Pass-through LUN creation fails when Data ONTAP DSM is installed on Hyper-V virtual machines.

**Note:** Removing MPIO does not remove MPIO iSCSI sessions that SnapDrive might have been using. After removing MPIO, you must remove existing iSCSI sessions and, if needed, create new iSCSI sessions.

- Due to a Microsoft limitation, if a pass-through disk is down, the virtual machine to which the disk is assigned cannot be rebooted.

To reboot the virtual machine, you must bring the pass-through disk back up, or remove it from the virtual machine using Microsoft Hyper-V Manager or another Microsoft remote server management tool.

- If OnCommand Unified Manager Core Package role-based access control is enabled on a Hyper-V parent host, you cannot dynamically add or remove pass-through disks with SnapDrive in a Hyper-V virtual machine.
- Windows Server 2008 Server Core does not support the ability to dynamically add and remove Hyper-V pass-through disks, because Server Core does not support Windows Communication Foundation (WCF) Web services that are required to dynamically add and remove pass-through disks.
- In a clustered environment with multiple HA VMs residing in different clustered disks with different owner nodes, parallel LUN management operations can lead to an inconsistent SnapDrive state.

## Enabling thinly provisioned LUNs in clustered Data ONTAP

You can add some additional information to page 79 of the "Managing space on storage system volumes" section in "Using SnapDrive in Microsoft Environments."

### Before you begin

- You have enabled HTTPS using options `ssl.enable` and `secureadmin setup ssl`.
- You are logged in to the storage system as root.

### Steps

1. From your Windows host, use System Manager, the storage system CLI, or PowerShell Toolkit to check your volume's space-guarantee attribute.
2. To enable thin provisioning for a LUN, set the space-guarantee value to **none**.

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