

# SnapDrive® 6.3.1R1 for Windows®

## **Release Notes**

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# SnapDrive 6.3.1R1 for Windows release notes

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These release notes describe new features, installation requirements, fixed issues, and known issues for SnapDrive 6.3.1R1 for Windows.

## New features in SnapDrive 6.3.1R1

SnapDrive 6.3.1R1 includes all the new features introduced in SnapDrive 6.3 for Windows, as well as bug fixes.

Detailed information about the new features is provided in the *SnapDrive 6.3 for Windows Installation and Administration Guide*.

- Support for performing Snapshot copy operations on virtual machine disks (VMDKs) in an NFS or VMFS datastore, which requires Virtual Storage Console 2.0.1 or later  
To enable VMDK support for SnapDrive 6.3.1R1 for Windows and SnapManager 5.1 for Microsoft SQL Server, you must select, install, and configure the Backup and Recovery capability when you install Virtual Storage Console 2.0.1. When you use the Virtual Storage Console Backup and Recovery capability for the VMDK support provided for SnapDrive 6.3.1R1 for Windows, a SnapManager for Virtual Infrastructure software license is not required.

**Note:**

- SnapDrive 6.3.1R1 for Windows does not support creation and provisioning of VMDKs.
- SnapDrive 6.3.1R1 for Windows supports only SnapManager for Microsoft SQL Server with VMDK.
- Support for space reclamation when using VMDKs in an NFS datastore
- Support for DataFabric Manager server credential caching with RBAC
- Automatic download of the storage system access control tool (storacl.exe) as part of your SnapDrive 6.3.1R1 for Windows installation

## Restrictions

SnapDrive 6.3.1R1 for Windows is restricted in certain ways.

- Microsoft clusters (MSCS) are not supported with iSCSI-connected RDM LUNs.
- A LUN managed by SnapDrive cannot be configured as a "dynamic" disk (a storage device that is divided into volumes rather than partitions); it can serve only as a "basic" disk (a storage device for host-side application data).
- A LUN cannot be configured as an extended partition; SnapDrive supports only a single, primary partition on a LUN.

- A LUN created with FilerView or at the storage system command line can be managed only if certain steps (documented in the *SnapDrive 6.3 for Windows Installation and Administration Guide*) are taken to prepare these disks for SnapDrive.
- Conversion of a LUN with an MBR partition to a GPT partition is not supported.
- Permanent clones are not supported.
- Snapshot copies that are created from the storage system console are not supported; because this can lead to inconsistencies within the NTFS file system, only SnapDrive should be used to create Snapshot copies of LUNs.
- Volume-level SnapVault configurations are not supported (however, qtree SnapVault configurations are supported).
- Space reclamation on VMDKs in VMFS datastores is not supported.

# SnapDrive system requirements

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You must ensure that your storage system and your Windows system meet at least the minimum requirements to properly install and run SnapDrive for Windows.

The storage system and Windows system components that you use with SnapDrive, as well as the minimum versions SnapDrive requires, are as follows:

## Operating system on the storage system

- Data ONTAP 7.2.7 or later
- Data ONTAP 7.3.1 or later
- Data ONTAP 8.0 7-Mode or later

IPv6 support with Windows Server 2008 requires Data ONTAP 7.3.1 or later. IPv6 is not supported on Windows Server 2003.

Integration with the protection management application to enable SnapManager for Exchange to use datasets with SnapVault backup and restore requires Data ONTAP 7.3.1 or later.

Support for SnapVault backup of existing SnapVault configurations requires Data ONTAP 7.2.7 or later.

Support for SnapVault with MultiStore requires Data ONTAP 7.3.1 or later.

Support for GPT partitioning on new LUNs created by SnapDrive requires Data ONTAP 7.2.7 or later.

**Note:** For the most current list of supported Data ONTAP software versions, see the Interoperability Matrix.

## Licenses enabled on the storage system

- iSCSI, if you want to use iSCSI-accessed LUNs
- FC, if you want to use FC-accessed LUNs
- SnapRestore®, if you want to restore LUNs from Snapshot copies
- SnapMirror®, if you want to use the SnapMirror option
- FlexClone, if you want to enable volume clone functionality
- SnapVault, if you want to use SnapVault for archiving LUN backup sets

**Note:** The iSCSI and FC licenses supplied with SnapDrive enable all the CIFS functionality necessary for using SnapDrive. If you also want full-featured, direct CIFS access to a particular storage system, you must install a separate CIFS license on that storage system.

## NetApp Host Agent

If you are using NetApp Host Agent, you must upgrade to NetApp Host Agent 2.7 or later before upgrading to SnapDrive 6.3.1R1 for Windows.

**DataFabric Manager server**

DataFabric Manager server 3.8 or later, if you are using DataFabric Manager server to provide role-based access control (RBAC) with SnapDrive. For information about using RBAC with SnapDrive for Windows, see the *SnapDrive 6.3 for Windows Installation and Administration Guide*.

**Hardware on the Windows host**

- CPU
  - For 32-bit: 2.8 GHz Pentium® 4 or compatible
  - For 64-bit: Intel® Xeon®, AMD Opteron™, or Intel Itanium
- Memory
  - 1-GB RAM
- HBA and NICs
 

To determine the number and types of HBAs and NICs required by each system in your SnapDrive configuration, see the section on selecting a SnapDrive configuration in the *SnapDrive 6.3 for Windows Installation and Administration Guide*.

The NIC you use to facilitate data transfer for Microsoft iSCSI Software Initiator can come from any vendor, but it must be approved by Microsoft for use with Windows Server.
- Host Utilities and Software Initiator
 

To ensure high network bandwidth and ease of configuration, obtain the latest firmware and drivers for the HBAs and NICs you are using. You can accomplish this by installing the appropriate Host Utilities or iSCSI Software Initiator, and by following these guidelines:

  - Navigate to the software download page on the NetApp Support Site for the latest supported FC HBAs and drivers.  
From this gateway, navigate to the FC Host Utilities for Windows software download page.
  - Microsoft iSCSI Software Initiator must be downloaded from the Microsoft site.
  - Navigate to the software download page on the NetApp Support Site or the latest supported iSCSI HBA and drivers.  
From this gateway, navigate to the iSCSI Host Utilities for Windows software download page.

**MPIO**

DSM software support version for Windows MPIO

See the Data ONTAP DSM for Windows MPIO Description page on the Download Software page for any installation requirements.

**Note:** See the Interoperability Matrix for the latest information about the supported configurations.

## Operating system on the Windows host machine

- Windows Server 2003 SP2
  - Edition: Standard or Enterprise
  - Platforms: x86, x64

**Note:** If you are using SnapDrive 5.0 and earlier on Windows Server 2003 IA64 systems, you must upgrade to Windows Server 2008 on IA64 systems before you can use SnapDrive 6.3.1R1 for Windows.

- Windows Server 2008, Windows Server 2008 R2 Server Core and non-Server Core installations, and Windows Server 2008 R2 SP1 Server Core and non-Server Core installations:
  - Edition: Standard or Enterprise
  - Platforms: x86, x64, IA64

## .NET Framework

.NET Framework 3.5 SP1 is required before installing SnapDrive.

.NET is not supported on Windows Server 2008 Server Core; it is, however, supported on Windows Server 2008 R2 Server Core and later versions.

## Microsoft Windows hotfixes

Before you can install SnapDrive 6.3.1R1 for Windows, your host system must have the appropriate Microsoft hotfixes installed.

**Note:** The following Microsoft hotfixes must be requested directly from Microsoft Product Support Services at <http://support.microsoft.com>.

Windows Server 2003 SP2 (x86 or x64)

If your system is running Windows Server 2003 with Service Pack 2, you must install the following hotfixes:

- 919117
- 931300
- 932755
- 937382

Windows Server 2008

If your system is running Windows Server 2008 (x86, x64, or IA64), you must install the following hotfixes:

- 950927
- 952790
- 955656

If your system is running Windows Server 2008 x64, you must install the following hotfix:

- 956697 (This hotfix is not required on virtual machines.)

## Windows Server 2008 R2

If your system is running Windows Server 2008 R2, either Server Core or non-Server Core, and you are using the Hyper-V feature, you must install the following hotfix:

- 977096

## Windows Server 2008 R2 SP1

- None at this time

**Note:** Data corruption might occur on any Windows Server Failover Cluster (WSFC) with more than two nodes utilizing Cluster Shared Volumes (CSV). Also, there are chances of inconsistent behavior when a CSV goes into redirected mode, or when cluster validation is run. If you are running Server 2008 R2 SP1, the following Microsoft hotfixes are recommended to be installed in a Hyper-V environment.

For more information, see the following Microsoft Knowledge Base articles on the Microsoft site:

- Knowledge Base article 2494016 *Virtual Machines crash when CSV goes into redirected mode*
- Knowledge Base article 2520235 *Stop error when more than 200 hard disks are presented to a WSFC*
- Knowledge Base article 2531907 *SCSI Device Vital Product Data (VPD) test runs on online disks causing data corruption*

## Related information

*NetApp Interoperability Matrix - <http://now.netapp.com/NOW/products/interoperability/http://support.microsoft.com>*

*Microsoft Knowledge Base article 2494016*

*Microsoft Knowledge Base article 2520235*

*Microsoft Knowledge Base article 2531907*

## VMware ESX guest OS requirements

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To properly install and run SnapDrive for Windows in a VMware ESX environment, you must ensure that you are using compatible operating systems, host utilities, VMware Tools, and controllers.

See the Interoperability Matrix for the latest supported ESX guest OS components.

|                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|---------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>ESX server OS</b>                                          | <ul style="list-style-type: none"> <li>• ESX 3.5 Update 5 or n-2 Updates</li> <li>• ESX 4.0 or 4.0 Update 1</li> <li>• ESX 4.1 Update 1</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>Windows guest OS</b>                                       | <ul style="list-style-type: none"> <li>• Windows Server 2003 SP2 (x86 or x64), Windows Server 2008 (x86 or x64), or Windows Server 2008 R2, with the hotfixes specified in the SnapDrive host requirements.</li> <li>• .NET Framework 3.5 SP1</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>FC HBA</b>                                                 | For the latest list of supported host utilities and HBAs, see the Interoperability Matrix for details.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>iSCSI Initiator</b>                                        | For the latest list of all supported iSCSI initiators, see the Interoperability Matrix for details.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Storport Miniport driver<br/>LSI Logic SCSI controller</b> | <p>SCSIport Miniport driver is the default LSI Logic SCSI controller included when Windows Server 2003 SP2 is installed as the guest OS in VMware ESX server.</p> <p>If you are using RDM LUNs, the LSI Logic SCSI controller must be updated with the Storport Miniport driver for proper SnapDrive operations.</p> <p>The minimum required driver version for x86 is 1.21.15.00, and the minimum required driver version for x64 is 1.20.17.00.</p> <p>You can download the x86 or x64 version of this driver from the LSI Logic site by searching for “LSI Logic Fusion-MPT SCSI Driver (Storport)”, or you can contact LSI Logic.</p> <p>For more information, see the VMware Knowledge Base article 1006224 <i>Windows Guests Installed with LSI Logic Storport Driver 1.26.05 Crash while Booting</i> on the VMware site.</p> <p>Windows Server 2008 includes the Storport Miniport driver and does not need to be updated.</p> |

- VMware Tools** VMware Tools must be installed before the SnapDrive installation in the guest OS.
- Multiple SCSI controllers** To support more than 15 LUNs, the virtual machine must be preconfigured with 4 SCSI controllers, creating a total of 60 LUNs. However, one RDM LUN or VMDK is assigned to each SCSI controller, leaving 56 LUNs available for SnapDrive provisioning.

**Related information**

*NetApp Interoperability Matrix - <http://now.netapp.com/NOW/products/interoperability/>*  
*VMware Knowledge Base article 1006224 - [http://kb.vmware.com/selfservice/microsites/](http://kb.vmware.com/selfservice/microsites/search.do?)*  
*<http://www.lsi.com/>*

## ALUA support requirements

---

SnapDrive provides support for ALUA when you create LUNs using FC initiators on ESX 4 servers. ALUA is enabled by default on the resulting igroup that SnapDrive automatically creates.

SnapDrive also has the following ALUA support requirements and limitations:

- You can use SnapDrive to create LUNs and then map them manually to existing ALUA-enabled igroups.
- You cannot use the same FC initiator for both ALUA-enabled and ALUA-disabled igroups.
- ALUA is not supported on a VMware MSCS cluster.

If SnapDrive is used to create a shared disk on an ESX 4 VMware MSCS cluster, ALUA is disabled on the igroup that SnapDrive automatically creates.

If you use SnapDrive to create a shared disk in a VMware MSCS cluster when an FC igroup already exists with ALUA enabled, SnapDrive automatically creates an igroup with ALUA disabled and logs an error in the Event Viewer, indicating that ALUA is enabled for one of the initiators on the storage system.



## Support requirements for Snapshot copy operations in VMDKs on NFS and VMFS datastores

---

Before you can use SnapDrive to perform Snapshot copy operations in VMDKs on NFS and VMFS datastores, you must be aware of the SnapDrive requirements for enabling VMDK support.

- Virtual Storage Console 2.0.1 must be installed and the appropriate IP address must be configured in SnapDrive for Windows.
- Data ONTAP 7.3.4 must be installed on your storage system for SnapDrive to use the space reclamation feature in VMDK files.
- Virtual Storage Console must be installed on the same system running the vCenter Server or on another 32-bit or 64-bit Windows computer.
- Attached VMDKs must only be basic disks.
- The guest OS must be able to communicate with the IP address or storage system configured in the Virtual Storage Console server.



## Fixed issues

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SnapDrive 6.3.1R1 for Windows includes several bug fixes. For more information, see Bug Tools on the NetApp Support site and search using the bug ID.

- Bug 434153** DFM RBAC: SnapDrive for Windows should provide a configurable credential cache timeout value.
- Bug 437376** SnapDrive for Windows should not check for vol\_move status for Data ONTAP 8.0.
- Bug 440822** The SnapDrive service in an ESX VM takes a long time to start up in large ESX environments.
- Bug 445705** SnapDrive for Windows does not allow Snapshot copy operations of LUNs on FlexClone volumes.
- Bug 447078** SnapDrive 6.2 for Windows fails to show FCP initiators when ESX is upgraded from 4.0.x to 4.1.
- Bug 447254** User unable to make a backup of VMs in a Hyper-V cluster shared volume cluster environment.
- Bug 453976** Connecting to an existing cluster shared volume fails with error "Unable to locate a LUN to perform requested operation."
- Bug 455839** SnapDrive for Windows in a Hyper-V VM tries to connect to unroutable IP on storage system.
- Bug 458869** Dataset backup fails with "Error: Qtree was not found in dataset."
- Bug 464870** Dismounting a connected LUN in a Snapshot copy failed with error "The requested operation is not supported."
- Bug 473592** SnapDrive for Windows does not enumerate RDM disks if there is more than one SCSI controller.
- Bug 475282** SnapDrive for Windows ASUP string running in Windows Server 2008 R2 Operating System shows incorrect message.
- Bug 475634** SnapVault cannot be updated from MMC popup menu.
- Bug 488612** SnapDrive for Windows enumeration takes a long time in a specific customer configuration in Hyper-V (CSV) environment.
- Bug 505353** SnapDrive 6.3.1 does not enumerate Hyper-V shared LUNs in a non-CSV (Cluster Shared Volume) configuration.
- Bug 441076** Data ONTAP Volume Shadow Copy Service Hardware Provider does not delete the older log files and these log files occupy all the space in the disk over a period of time.

- Bug 489643** SnapDrive for Windows does not return storage mapping of VMs in a cluster.
- Bug 454121** Restore operation of a deleted VM on Hyper-V configuration failed with error "File Level Restore failed with error code 0xc0040215."
- Bug 497079** Shrinking a CSV LUN might result in inconsistent behavior.
- Bug 235804** Expanding MBR LUN to the maximum limit (2 TB) causes LUN corruption.
- Bug 486578** SnapDrive for Windows backups on vFiler units fail while using SnapManager for Hyper-V with Data ONTAP 8.0.
- Bug 514715** SnapDrive enumeration might terminate the SnapDrive service on the parent HyperV machine unexpectedly.

## Known issues

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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.

### SnapDrive for Windows installation fails after .NET 4.0 is installed

|                          |                                                                                                                                                                          |
|--------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Message</b>           | SnapDrive installation detected that the .Net 3.5 Framework SP1 is not installed in the system. Please install .Net 3.5 Framework SP1 and launch the installation again. |
| <b>Issue</b>             | This issue occurs when you attempt to install SnapDrive for Windows after installing .NET 4.0 Framework on your Windows server.                                          |
| <b>Cause</b>             | SnapDrive requires .NET 3.5 SP1 during installation. If .NET 3.5 SP1 is not installed, the SnapDrive installation fails.                                                 |
| <b>Corrective action</b> | Install both .NET 3.5 SP1 and SnapDrive for Windows before upgrading to .NET 4.0.                                                                                        |

### Error adding raw device mapping -GetLunInformation returned false

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

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

|                          |                                                                                                                                                                                           |
|--------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Issue</b>             | When a VMWare snapshot of a VMDK disk already exists, you cannot use a SnapDrive Snapshot copy made on an independent disk (persistent or nonpersistent) to mount or restore a VMDK disk. |
| <b>Corrective action</b> | Remove the VMware snapshot and then take a Snapshot copy of VMDK disks.                                                                                                                   |

## Hot removal of volume mount point pass-through disk is not supported on high availability VM

|                          |                                                                                                        |
|--------------------------|--------------------------------------------------------------------------------------------------------|
| <b>Issue</b>             | SnapDrive fails to remove volume mount point pass-through disks on high availability virtual machines. |
| <b>Cause</b>             | This problem is caused by a Microsoft-related issue.                                                   |
| <b>Corrective action</b> | Remove the disk from the VM parent using Hyper-V Manager and SnapDrive.                                |

## Pass-through disk provisioning in High Availability virtual machine fails

|                          |                                                                                                                                                                                                  |
|--------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Issue</b>             | Pass-through disk provisioning (create and connect operation) fails on a Highly Available Virtual Machine (HA VM).                                                                               |
| <b>Cause</b>             | This issue occurs when a dedicated pass-through disk already exists in the HA VM: for example, while mounting a Snapshot copy as a pass-through disk from the HA VM using SnapDrive for Windows. |
| <b>Corrective action</b> | To avoid this problem, detach the dedicated pass-through disk before performing provisioning operations on HA VMs.                                                                               |

## VMware tools requires upgrade when virtual machine migrates from platform other than ESX

|                          |                                                                                                                                                                                                                     |
|--------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Issue</b>             | SnapDrive does not recognize virtual machines created on a platform other than an ESX server (for instance, a VMware workstation) and then migrated to an ESX server configuration until VMware tools are upgraded. |
| <b>Cause</b>             | This problem is caused by missing registry keys required by SnapDrive.                                                                                                                                              |
| <b>Corrective action</b> | <ol style="list-style-type: none"> <li>1. Uninstall VMware Tools on the ESX server.</li> <li>2. Reboot the system.</li> <li>3. Reinstall VMware Tools.</li> <li>4. Reboot the system.</li> </ol>                    |

## SnapDrive 6.3.1R1 is unable to pass the correct account information to DFM causing RBAC access check to fail

|                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|--------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Issue</b>             | This issue occurs when using the SnapManager Configuration wizard to create or reuse a dataset within Operations Manager for SnapVault with SnapDrive 6.3.1R1 for Windows installed.                                                                                                                                                                                                                                                                                                                    |
| <b>Cause</b>             | This issue occurs when you are running DataFabric Manager server 3.7 or later on a Linux-based Operations Manager server to provide role-based access control with SnapDrive 6.3.1R1 for Windows or later.                                                                                                                                                                                                                                                                                              |
| <b>Corrective action</b> | <p>Make sure the following conditions exist for your Linux-based configuration and try again:</p> <ul style="list-style-type: none"> <li>• The sdcli user account must be a valid Operations Manager server user account with the appropriate roles assigned.</li> <li>• The SnapManager service account must be added to the Operations Manager server with the appropriate roles assigned.</li> </ul> <p>For more information, see the Knowledge Base article kb58272 on the NetApp Support site.</p> |

### New DataFabric Manager user entry example

The following example shows a new user and the roles for that user being added to a Linux-based DataFabric Manager server:

```
# dfm user add windomain\\snapuser
Warning: windomain\\snapuser does not exist in the administrator
database(s), so login is disabled for this administrator.
Added administrator windomain\\snapuser.

# dfm user list
Id Administrator Email Pager
-----
5980 windomain\\snapuser windomain\\snapuser
29 Everyone
30 root

Assign a role or roles to the user:
# dfm user role add windowsdomain\\snapuser GlobalFullControl
Added 1 role to administrator windowsdomain\\snapuser.

# dfm user role list windowsdomain\\snapuser
Role Id Role Name
-----
28 GlobalFullControl
```

## Fresh SnapDrive installations on IA64 systems do not request SnapDrive license

|                          |                                                                                                                                                                                                                                                                                       |
|--------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Issue</b>             | This issue occurs during fresh installations of SnapDrive 6.3.1R1 for Windows on IA64 systems, when the SnapDrive installation wizard does not display the SnapDrive License window, which enables you to enter your SnapDrive license information during the installation procedure. |
| <b>Cause</b>             | This issue is caused by a bug in the SnapDrive 6.3.1R1 for Windows installation wizard.                                                                                                                                                                                               |
| <b>Corrective action</b> | Use the SnapDrive CLI or MMC to enter license information after you install SnapDrive. If you enter host-side license information, you must restart the SnapDrive service (SWSvc.exe) before the license takes effect.                                                                |

## The LUN has SCSI reservation but has not been mapped

|                          |                                                                                                                                                                                                  |
|--------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Description</b>       | Connecting a LUN on a Microsoft cluster fails.                                                                                                                                                   |
| <b>Cause</b>             | A bug in Microsoft failover clusters and in Data ONTAP software.                                                                                                                                 |
| <b>Corrective action</b> | <p>You can resolve this problem in one of three ways.</p> <ul style="list-style-type: none"> <li>Clear the SCSI reservation on your storage system by entering the following command:</li> </ul> |

**lun persistent\_resv clear**

- Clear the persistent reservation (PR) bit on the Windows server by entering the following command:

**cluster *nodename* /clearpr:disk#**

- Complete the following steps on one of the Microsoft cluster nodes:
  1. Note the dependencies in the associated cluster resource group and then delete the group.
  2. Remove the disk from the Available Storage list.
  3. On the same server or a new one, add the disk back to the Available Storage list and re-create the cluster resource group with the dependencies you noted in Step 1.

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

|                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|--------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Issue</b>             | Operations that try to import (mount) a Snapshot copy LUN onto the host fail, including file-level restoration for files in the boot LUN, generic Snapshot copy mount for copying files or file verification by third-party tools, and VSS Snapshot copy of scenarios that require Snapshot copy mount.                                                                                                                                                          |
| <b>Cause</b>             | This is caused by a limitation with the Snapshot copy of the LUN when 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 problem only occurs 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 situation:</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> |

## Requested LUN size is too large

|                    |                                                                                                                                                        |
|--------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Description</b> | This message occurs when, using Data ONTAP 7.3.1, you use the <code>lun create -o nonreserve -s 16t</code> command in an attempt to increase LUN size. |
|--------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|

In earlier versions of Data ONTAP, this command succeeded and automatically created the largest possible non-space-reserved LUN (17,555,552,340,480 bytes or 16439 GB).

This problem also exists for the lun-create-by-size ZAPI that is used by SnapDrive for Windows. When you use SnapDrive for LUN management, creating a LUN by entering the LUN size as 16 TB fails.

|                          |                                                                                                                                  |
|--------------------------|----------------------------------------------------------------------------------------------------------------------------------|
| <b>Corrective action</b> | Create a non-space-reserved LUN sized 16349 GB which results in the same maximum LUN size that you created using Data ONTAP 7.3. |
|--------------------------|----------------------------------------------------------------------------------------------------------------------------------|

## Input string was not in a correct format

|                          |                                                                                                                                                                                                                                             |
|--------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Cause</b>             | The message occurs in SnapDrive 6.x during LUN enumeration, when you change the Regional and Language options from the default of English (US), which might cause the thousands separator to change to a character other than a period (.). |
| <b>Corrective action</b> | In the Regional and Language options, change the value in the Decimal symbol field to a period (.) instead of a comma (,) or any other symbol.                                                                                              |

## Shared pass-through disk creation fails on an HA VM on a shared disk

|                          |                                                                                                                                                                                       |
|--------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Issue</b>             | Shared pass-through disk creation fails on an HA VM on a shared disk, displaying the following error message: An exception occurred in the service when handling the control request. |
| <b>Cause</b>             | This issue occurs when the virtual network names are different for both the nodes.                                                                                                    |
| <b>Corrective action</b> | Change the virtual network name of the parent node, and then create a shared pass-through disk.                                                                                       |

## CSV LUN creation fails because MPIO is not present in all the nodes

|              |                                                                                                                                                      |
|--------------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Issue</b> | When you select the Add/Remove initiator, the CSV LUN creation fails with the following error message: MPIOINTF:No LUNs are connected to the system. |
|--------------|------------------------------------------------------------------------------------------------------------------------------------------------------|

|                          |                                                                                                       |
|--------------------------|-------------------------------------------------------------------------------------------------------|
| <b>Cause</b>             | This issue occurs when all the nodes on the cluster are running different versions of Data ONTAP DSM. |
| <b>Corrective action</b> | Ensure that all the nodes in the cluster are running the same version of Data ONTAP DSM.              |

## Removing a LUN from an ESX host causes multipath software to report that all the paths to the LUN are down

|                          |                                                                                                                                                                                                                                                                                                                         |
|--------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Issue</b>             | When you remove a LUN from an ESX 4.0 or 4.1 host, the multipath software reports that all the paths to the LUN are down.                                                                                                                                                                                               |
| <b>Corrective action</b> | <p>For hosts running ESX 4.0 Update 3 or ESX 4.1 Update 1, before removing the LUN, perform the following steps:</p> <ol style="list-style-type: none"><li>1. Enable VMFS3.FailVolumeOpenIfAPD.</li><li>2. Remove the LUN.</li><li>3. Perform a complete rescan.</li><li>4. Disable VMFS3.FailVolumeOpenIfAPD</li></ol> |

## Shrink Disk operation creates unallocated space

|                   |                                                                                                                               |
|-------------------|-------------------------------------------------------------------------------------------------------------------------------|
| <b>Issue</b>      | SnapDrive for Windows is unable to resize or format the disk when unallocated space is noticed after a Shrink Disk operation. |
| <b>Workaround</b> | None.                                                                                                                         |

## SnapDrive for Windows does not show the disk as CSV on systems without Hyper-V role

|                          |                                                                                                                                              |
|--------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Issue</b>             | SnapDrive currently checks whether Hyper-V role is enabled before it checks if the disk is a CSV.                                            |
| <b>Corrective action</b> | For file-sharing purposes, Microsoft allows CSV creation without the Hyper-V role; however, Microsoft does not recommend this configuration. |

## Space Reclaimer does not reclaim blocks for an RDM LUN

|                          |                                                                                                                         |
|--------------------------|-------------------------------------------------------------------------------------------------------------------------|
| <b>Issue</b>             | The space reclaimer feature does not reclaim blocks from an RDM LUN on a ESX 4.1 VM after data is deleted from the LUN. |
| <b>Corrective action</b> | None.                                                                                                                   |

## Unable to create LUN as CSV using SnapDrive for Windows

|                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|--------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Cause</b>             | When using SnapDrive for Windows to create new LUNs as CSVs, the disk fails to come online if the resource group Available Storage is not owned by the node on which the SnapDrive for Windows commands are initiated.                                                                                                                                                                                                                                                                                                |
| <b>Corrective action</b> | <p>To add a new CSV to an HA pair, perform the following steps:</p> <ol style="list-style-type: none"><li>1. Verify the current owner of the resource group Available Storage by running the following command:<br/><b>cluster group Available Storage /status</b></li><li>2. If the node that owns the resource group is not the current node, move the group to this node by running the following command:<br/><b>cluster group Available Storage /move: <i>nodename</i>.</b></li><li>3. Create the CSV.</li></ol> |

## Unable to create pass-through LUNs in VM using FC initiators

|                          |                                                               |
|--------------------------|---------------------------------------------------------------|
| <b>Issue</b>             | Pass-through LUN creation fails when the VM is in an HA pair. |
| <b>Corrective action</b> | Ensure that the VM host name and the VM name are the same.    |

## Pass-through disk creation fails when VM is in cluster resource group

|              |                                                                                                                                                       |
|--------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Issue</b> | When you use SnapDrive for Windows to create a pass-through disk on a High-Availability VM in a cluster resource group, the disk creation might fail. |
|--------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|

|                          |                                                                                                |
|--------------------------|------------------------------------------------------------------------------------------------|
| <b>Cause</b>             | This issue occurs when the host name or computer name of the VM and the VM name are different. |
| <b>Corrective action</b> | Ensure that the VM host name and the VM name are the same.                                     |

## CSV disk creation from the non-owner node of available storage group fails

|                   |                                                                                                                                                                  |
|-------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Cause</b>      | The disk create operation fails because either the specified cluster node is not the owner of the resource, or the node is not a possible owner of the resource. |
| <b>Workaround</b> | None.                                                                                                                                                            |

## FCP disk enumeration fails with Data ONTAP 8.0.1 7-Mode on a system takeover

|                   |                                                                                                       |
|-------------------|-------------------------------------------------------------------------------------------------------|
| <b>Issue</b>      | An FCP-connected LUN fails to enumerate on a hosted virtual instance running Data ONTAP 8.0.1 7-Mode. |
| <b>Workaround</b> | None.                                                                                                 |

## Windows 2008 R2 SP1 installation fails if SnapDrive is installed

|                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|-------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Workaround</b> | <ol style="list-style-type: none"><li>1. Disable SnapDrive Service.</li><li>2. Enable Automount by running any one of the following commands on command prompt:<ol style="list-style-type: none"><li>a. Enter <code>mountvol /E</code>.</li><li>b. Enter <code>diskpart</code>. At diskpart prompt, enter <code>automount enable</code>.</li></ol></li><li>3. Restart the system.</li><li>4. Install Windows 2008 SP1.</li><li>5. Change SnapDrive Service startup type to Automatic.</li><li>6. Start SnapDrive Service.</li></ol> |
|-------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## Hyper-V role installation blocked by WHU or MPIO or SnapDrive installation after immediate installation of Windows 2008 R2 EE

- Workaround**
1. Disable SnapDrive Service.
  2. Enable Automount by running any one of the following commands on command prompt:
    - a. Enter `mountvol /E`.
    - b. Enter `diskpart`. At diskpart prompt, enter `automount enable`.
  3. Restart the system.
  4. Enable HyperV role.
  5. Change SnapDrive Service startup type to Automatic.
  6. Start SnapDrive Service.

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

**Cause** This issue occurs when LUN size and the size of LUN inside the snapshot is not matching.

- Workaround**
1. Go to `diskmgmt.msc` and you can see the disk without the drive letter or mount point.
  2. Right click the disk and assign drive letter to the disk.
  3. Ignore the Format disk pop-up.
  4. Refresh Snapdrive MMC. You can see the disk with the assigned drive letter.

## Error in resize operation using SnapDrive MMC for a MBR LUN of 2 TB

**Issue** SnapDrive does not allow resize operation on a MBR LUN of size 2 TB using SnapDrive MMC snapin. As 2 TB is the maximum MBR size limit, SnapDrive displays the following

error message: Error: Cannot expand beyond 2TB limit for MBR disks. User may need to shrink the disk using resize operation.

**Workaround**

Use SnapDrive command line (SDCLI).



## Documentation changes

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Some additional information to the *SnapDrive 6.3 for Windows Installation and Administration Guide* has become available.

### Verifying the cluster group owner

Before you use SnapDrive for Windows to add new Cluster Shared Volumes (CSV) to a Microsoft cluster, it is important to verify which Hyper-V node owns the cluster group because you must create new CSV LUNs on the node that owns the cluster group.

#### About this task

Perform this step at the Windows server command-line.

#### Step

1. Enter the following command:

```
cluster group Group Name /status
```

#### Example

Enter the following command for a cluster group called Available Storage:

```
cluster group Available Storage /status
```

The cluster group status is displayed, including the name of the node that owns the cluster group.

### Changing the cluster group owner

You must create new CSV LUNs on the node that owns the cluster group. If you are using SnapDrive for Windows to create a new CSV LUN on a Hyper-V node that is not the cluster group owner, you can move ownership to the current node.

#### About this task

Perform this step at the Windows server command-line.

#### Step

1. Enter the following command:

```
cluster group Group Name /move:node_name
```

**Example**

Enter the following command to make the node named HypervNode2 the owner of the cluster group called Available Storage:

```
cluster group Available Storage /move:HypervNode2
```

## Hyper-V configuration commands

The SnapDrive for Windows GUI enables you to add only one Hyper-V node when you configure pass-through disk provisioning. You can use the `hyperv_config` command group in SnapDrive for Windows to specify additional Hyper-V nodes, as well as delete and list Hyper-V nodes; for instance, when you have a Cluster Shared Volume on a Microsoft cluster.

### The `hyperv_config set` command

You can specify additional Hyper-V nodes in Cluster Shared Volumes on a Microsoft cluster using the `hyperv_config set` command. This is useful, for instance, when SnapDrive must locate a LUN on a virtual machine that has been moved to another node in the cluster.

Syntax for this command is as follows:

```
sdcli hyperv_config set -host hostname -IP IP address [-port port number]
```

-host specifies the Hyper-V parent node host name.

-IP specifies the parent node IP address.

-p specifies the parent node SnapDrive Web service TCP port number. The default is 808.

**Example**

```
sdcli hyperv_config set -host NN-HYP-001-P -IP 10.20.1.150 -port 808
```

### The `hyperv_config list` command

The `hyperv_config list` command enables you to list all configured Hyper-V parent nodes. You can use this command to verify that SnapDrive is aware of all existing Hyper-V nodes, for instance, if they belong to Cluster Shared Volumes.

Syntax for this command is as follows:

```
sdcli hyperv_config list
```

### The `hyperv_config delete` command

The `hyperv_config delete` command enables you to delete a Hyper-V parent node configuration. This is helpful, for instance, when the Hyper-V configuration is no longer required.

Syntax for this command is as follows:

```
sdcli hyperv_config delete -host hostname
```

## Increasing SnapDrive operations timeout value in Windows

SnapDrive for Windows has a default operations timeout of 60 seconds; however, you can increase the timeout value by creating a new registry key in the Windows registry. You can change the timeout value in instances when you want SnapDrive for Windows to wait longer for operations, such as backups, to be completed.

### Steps

1. In the Windows registry, add a DWORD value named `OperationsTimeout` in `HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\SWSvc\Parameters`.
2. Enter a timeout to a value greater than the default of 60 seconds.

## VMware plug-in port for OnCommand

VMware plug-in supports the vDisk APIs used by SnapDrive for Windows for various operations. During OnCommand installation, SnapDrive for Windows installed within the VM, must use port 8053 to communicate with VMWare\_plugin.



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