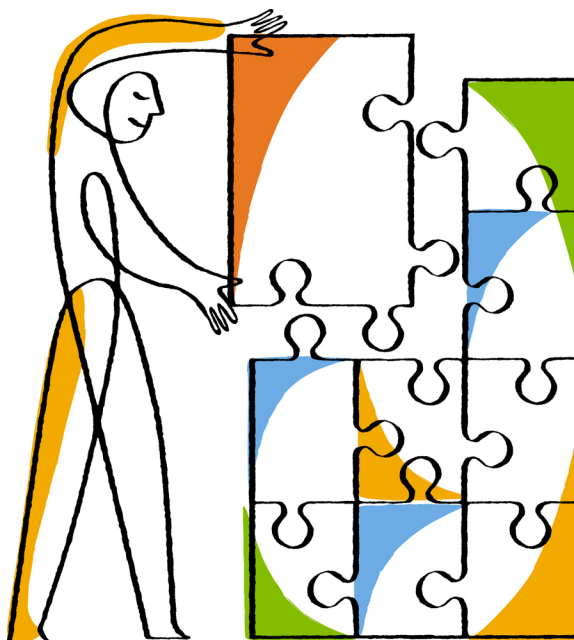




SnapDrive® 7.1 for Windows®

Release Notes



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New in this release

SnapDrive 7.1 for Windows includes clustered Data ONTAP 8.3 support, new features, new and changed commands, and some important bug fixes.

What's new in SnapDrive 7.1 for Windows

SDW 7.1 supports Data ONTAP 8.3, including the following highlighted new features.

You should be sure to check "Known limitations" in the *SnapDrive for Windows Release Notes* for information relating to limitations on Data ONTAP 8.3 support and on specific new features.

New cloning capabilities

Clone of clones

When you create SnapManager for Microsoft SQL Server clone volumes, they are temporary volumes; when you disconnect, you lose access to the data in the cloned volume. You can use the new clone of clone capabilities to create a new clone containing your temporary data.

You can initiate the clone of clone operation using the `sdcli snap mount` and `disk connect` commands or from the Connect Disk wizard. Additionally, a new `-cn` parameter in `sdcli snap mount` and `disk connect` and **Volume Clone Name** option in the Disk Connect wizard, optionally specify custom names for the clones. When no custom names are specified, SnapDrive for Windows uses the default clone naming convention.

Creation of a clone on a clone created using Virtual Storage Console earlier than 4.2.2 is not supported.

Split clone

You can use the new split clone operations to split the new clone from the parent volume and create a permanent FlexVol volume.

Initiate the split clone operations using the following new `sdcli` commands and PowerShell cmdlets:

sdcli commands	PowerShell cmdlets
<code>clone_split clone_estimate</code>	<code>Get-SdVolumeCloneSplitEstimate</code>
<code>clone_split clone_start</code>	<code>Start-SdVolumeCloneSplit</code>
<code>clone_split clone_status</code>	<code>Get-SdVolumeCloneSplit</code>
<code>clone_split clone_stop</code>	<code>Stop-SdVolumeCloneSplit</code>

You cannot perform post-split clone operations on cloned VMDK disks created using Virtual Storage Console versions prior to 4.2.2.

SIS-clone throttling enhancement

Starting with clustered Data ONTAP 8.3, your storage system does not accept clone requests if those requests negatively impact storage system client operations or if there is a substantial backlog. This is called *SIS-clone throttling*.

When you schedule a SIS-clone creation operation, you trigger two separate processes: the create operation, and the split operation. The create operation happens immediately, and results in a constant-time clone. The split operation runs in the background and copies blocks from the parent LUN to the child SIS-clone. This can take a significant amount of time and substantially impact your storage system.

If your clone creation operation fails as a result of SIS-clone throttling, you receive the following error message and should attempt your operation later:

```
Error message : Failed to create LUN clone since storage
system is experiencing high load.
```

You must have a FlexClone license for clone operations.

Dedicated disk optimization

In SnapDrive 7.1 for Windows, you need to install SnapDrive only on the cluster node on which you are creating your dedicated disk. This is a change from previous releases, in which you must have SnapDrive for Windows installed on every node in your cluster. This change is applicable to Windows Server Failover Clustering environments.

To ensure this optimization works correctly, you must configure the transport protocol settings on the cluster node on which you created the dedicated disk.

Thin LUN provisioning option

In previous SnapDrive for Windows releases, thin LUN provisioning was possible only when the space guarantee property was set to “none”. Starting in SnapDrive 7.1 for Windows, you can initiate thin provisioning regardless of the space guarantee property value.

You can create a thinly provisioned LUN using the new `-thin` option in the `sdcli disk create` command, or using the Create Disk wizard.

MetroCluster support

MetroCluster in clustered Data ONTAP environments provides cluster-local high availability and cross-site synchronous disaster recovery.

When you are using MetroClusters with VMDK operations, you must restart SnapDrive for Windows service along with Virtual Storage Console SMVI service after every switch over and switch back operation.

For complete MetroCluster information, see the MetroCluster documentation. For information on using MetroCluster support with Virtual Storage Console, see the Virtual Storage Console 4.2.2 product documentation.

Microsoft Failover Cluster enhancements in vSphere 5.5 (ESX iSCSI and FCoE)

SnapDrive for Windows now provides out-of-box iSCSI cluster support for VMware ESXi 5.5.

Upgrade notes

Upgrade notes describe important changes in support between the last release of SnapDrive for Windows and this one, including any deprecated features. Review this information carefully before upgrading SnapDrive for Windows. Make sure to check the NetApp Interoperability Matrix (IMT) for the most up-to-date information on supported configurations.

Supported upgrade paths

You can upgrade to SnapDrive 7.1 for Windows from the following previous versions:

- SnapDrive 7.0.3 for Windows
- SnapDrive 7.0.2 for Windows

Note: If you have deployed SnapDrive 7.0.2 and are using Fibre Channel, it is strongly recommended that you upgrade to 7.0.3.

- SnapDrive 7.0.1 for Windows
- SnapDrive 7.0 for Windows
- SnapDrive 6.5 for Windows

Verifying support for your configuration in the IMT

You can use the NetApp Interoperability Matrix (IMT) to verify SnapDrive support for your configuration: Data ONTAP software, host operating system, and the like. Verify your configuration before you install or upgrade to SnapDrive 7.0.3 for Windows.

Steps

1. Go to mysupport.netapp.com/matrix.
2. If SnapDrive for Windows is not the selected Storage Solution, click **Change** and select it under the Software | Management Software | Server Suite category:



3. In the **Component Explorer** pane, select each component you want to verify.

Tip: Select the parent of a set of components to select all its children.

You are prompted to add the components to the worksheet.

4. Click **Add**.
5. When you are satisfied with your choices, click **Show Results**.
6. When the IMT lists each supported configuration, take one of the following actions:
 - Scroll across a configuration to view the supported components and any notes or alerts for the configuration.
 - Click the configuration name to display complete information for supported components, including support history and NetApp policies and guidelines for the selected Storage Solution category.

If no results are returned for your configuration, you should provide feedback using the **Feedback** control in the upper right corner of the IMT.

SnapDrive for Windows supported components and system requirements

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.

Note: These SnapDrive for Windows system requirements are accurate as of the date of publication. However, requirements and supported versions might change after the release. For the latest system requirements information, see the Interoperability Matrix at mysupport.netapp.com/matrix.

Component	Supported versions
Supported Data ONTAP storage system versions	• Data ONTAP 8.3 operating in cluster environments • Data ONTAP 8.2.2 operating in 7-Mode and cluster environments • Data ONTAP 8.1.4 operating in 7-Mode and cluster environments • Data ONTAP Edge

Component	Supported versions
Operating systems on the Windows host machine	• Windows Server 2008 • Windows Server 2008 R2 • Windows Server 2012 • Windows Server 2012 R2
.NET Framework requirements	• .NET Framework 3.5 SP1 • .NET Framework 4.0 You must install both .NET Framework 3.5 SP1 and 4.0.
DSM	• Native Microsoft DSM • Data ONTAP DSM 4.0 (supports Windows Server versions earlier than 2012 R2) • Data ONTAP DSM 4.1 P1
Windows hotfixes required for your operating system	Windows Server 2012 R2: • 2903939 Windows Server 2012: • 2859162 • 2894032 Windows Server 2008 R2: • 2522766 • 2528357 • 2494016 • 2520235 • 2531907 • 974930

Component	Supported versions
Windows PowerShell	- Windows PowerShell 2.0 - Windows PowerShell 3.0 - Windows PowerShell 4.0
Windows Host Utilities Kit	- Windows Host Utilities Kit 6.0.1 - Windows Host Utilities Kit 6.0.2 - Windows Host Utilities Kit 7.0
ESXi	- ESXi 5.0 - ESXi 5.1 - ESXi 5.5
Virtual Storage Console	4.2.1 4.2.2 5.0

Changed commands

Review these changes to SnapDrive for Windows commands before upgrading to SnapDrive 7.1 for Windows. You need to be sure that the changes will not break any scripts that you use to execute SDCLI commands or PowerShell cmdlets.

SDCLI and PowerShell cmdlet changes introduced in SnapDrive 7.1 for Windows

New and changed commands	Change
<code>sdcli clone_split</code> <code>clone_estimate</code>	
<code>sdcli clone_split</code> <code>clone_start</code>	
<code>sdcli clone_split</code> <code>clone_status</code>	

New and changed commands	Change
sdcli clone_split clone_stop	
Get-SdVolumeCloneSplitEstimate	
Start-SdVolumeCloneSplit	
Get-SdVolumeCloneSplit	
Stop-SdVolumeCloneSplit	
. -ValidateCloneDepth in Mount-SdSnapshot	
-DeleteParentClones in Dismount-SdSnapshot	

Highlighted fixed issues

It is a good practice to review the bugs fixed in SnapDrive 7.1 for Windows before upgrading to the new release.

Highlighted fixed issues in SnapDrive 7.1 for Windows

Issue	Description
744717	Problem: You cannot use the user@domain format when you are installing SnapDrive for Windows Workaround: To work around this issue, use the DOMAIN \USER format
820569	Problem: The SnapDrive for Windows service defaults to the "automatic" startup option. This results in an up to 15 second delay during restart. Workaround: There is no workaround for this issue.
643275	Problem: The rescanAllHba method call consumes extensive resources. Workaround: SnapDrive 7.1 for Windows supports the rescanHba method call. To use it, you need to know the adaptor through which you expose the new storage system to the host.

Issue	Description
827843	Problem: SnapDrive for Windows is not updating ASUP telemetry for Microsoft Azure usage. Workaround: SnapDrive 7.1 for Windows detects that it is running on a VM running in the Microsoft Azure cloud and updates EMS for AutoSupport reporting.
827842	Problem: SnapDrive for Windows should collect metadata about the Amazon Web Services (AWS) instance it is installed on. Workaround: SnapDrive 7.1 for Windows collects metadata about the AWS instance on which it is installed and updates the ASUP telemetry. This metadata allows a better understanding of where SnapDrive for Windows is being used in the AWS cloud, with the NetApp Private Storage for AWS solution.
748157	Your SnapDrive LUN provisioning and Snapshot backup management operations fail when performed on "Dynamic Disks".
811857	Your SnapManager for Exchange or SQL Server local verification operations in clustered Data ONTAP 8.2 SAN environments might fail.
837026	You cannot update your SnapMirror relationships.
831684	OpenSSL Vulnerabilities and their applicability to SnapDrive.
623454	SnapDrive for Windows causes vCenter to run out of sessions.
829220	Mount operations for a LUN on a cluster management configuration might cause SnapDrive for Windows to fail.
739788	Adding or modifying your transport protocol settings might fail with a mislead error message.
780513	You might encounter errors performing SnapManager 2.0 for Hyper-V backup operations when you have spaces in the CSV mountpoint path.
842704	Your SnapDrive for Windows restore operation fails for SMB share names containing special characters
845204	You might encounter failure while performing SnapManager for Hyper-V restore operations on SMB shares created on a folder with upper case characters in its name

Issue	Description
588301	Problem: During startup, SnapDrive for Windows enumerates every VM in the vCenter database. This causes SnapDrive for Windows service to time out with an error message in large VMware environments. Solution: Starting in SnapDrive for Windows version 7.1, only single-instance VMs are enumerated on the host with SnapDrive for Windows installed during startup.

Important cautions

Important cautions identify issues that might cause data loss or system failure. Review these cautions carefully.

Restoring Snapshot copies after 7-Mode to clustered Data ONTAP transition

You cannot restore from Snapshot copies that reside on volumes that have been transitioned from 7-Mode to clustered Data ONTAP using the 7-Mode Transition Tool. However, you can back up and clone your transitioned Snapshot copies, and then restore from the new Snapshot copies you create.

To see more about 7-Mode Transition Tool capabilities and limitations, see the 7-Mode Transition Tool documentation set.

Accessing dedicated and shared LUNs after transition

If you do not perform this series of steps after transition from 7-Mode to clustered Data ONTAP, you cannot access your dedicated and shared LUNs.

1. After you have transitioned to clustered Data ONTAP using the 7-Mode Transition Tool, add the clustered Data ONTAP Storage Virtual Machine (SVM) management LIF to the SnapDrive for Windows transport protocol settings.
2. Refresh **Disks** in the SnapDrive for Windows GUI or use the `sdcli` to see the SnapDrive for Windows disks from created prior to the transition.
3. When the disks are available in SnapDrive for Windows, you can perform all regular SnapDrive for Windows operations in clustered Data ONTAP.

Known limitations

Known limitations identify platforms, devices, or functions that are not supported by SnapDrive 7.1 for Windows, or that do not interoperate correctly with SnapDrive for Windows. Review these limitations carefully.

Support for selective LUN mapping

SnapDrive 7.1 for Windows does not support selective LUN mapping. As a result, you need to ensure that you have a data LIF on each cluster node.

Support for VHDX

VHDX sharing is not supported in NAS volumes from Data ONTAP.

7-Mode Transition Tool limitations

7-Mode Transition Tool has the following limitation in SnapDrive 7.1 for Windows:

- You cannot restore Snapshot copies and LUNs after you use the 7-Mode Transition Tool to transition them from 7-mode to clustered Data ONTAP. However, you can back up and clone your Snapshot copies and restore them from the new Snapshot copies.
- SnapMount and file level restore operations fail due to a cloning limitation on the 7-Mode Snapshot copies.
- Clone of clone operation are not supported on 7-Mode Snapshot copies.
- You cannot transition VMDK disk, as Virtual Storage Console does not support 7-Mode Transition Tool.

Interoperability issues with Windows Server 2012 and 2012 R2

- The Windows Host Utility kit, which is mandatory for Windows Server 2012 and 2012 R2 on both physical and guest operating systems, disables the Windows Server native space reclamation feature.
- Data ONTAP does not support Windows Server 2012 and 2012 R2 native thin provisioning.
- You should not perform any SnapDrive for Windows disk-related operations on the LUN that hosts the virtual machines during live virtual machine migration and storage migration.
- Although Windows Server 2012 and 2012 R2 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 and 2012 R2, you must remap the LUNs to the new nodes.

Known issues

Known issues identify problems that might cause you inconvenience but do not prevent you from using SnapDrive 7.1 for Windows successfully.

NetApp Bugs Online provides complete information about most bugs, including any workarounds. If a Bugs Online report is available, the bug ID column in the table contains a hyperlink that you can click to view the report.

Known issues identified in this release

The following issue was identified in this release:

Bug ID	Description
724404	SnapManager for SQL (SMSQL) backup verification/mount fails on a Windows Failover Cluster running on VMware when using FC RDM LUNs
837026	You cannot update your SnapMirror relationships
843092	SnapDrive for Windows VMDK backups increase memory usage
849446	SnapDrive for Windows VMDK backups increase memory usage
861781	Problem: Your SnapDrive for Windows GUI displays the Storage System IP address instead of the Storage Virtual Machine (SVM) hostname for VMDK disks when you are using MetroClusters in switch over mode. Workaround: There is no workaround for this issue.
864540	Title: You cannot perform a split clone operation on multiple CSVs Problem: When you performing a split clone operation on multiple CSV disks using a single command, you are unable to split all clones. Instead, only the last clone is split. Workaround: Split the clones individually instead of splitting multiple clones in same command
856844	SnapDrive for Windows might receive an error when checking for the SnapManager for SQL Server license.
851995	Problem: SnapDrive for Windows does not limit the clone level to two, when cloning VMDK disks on VMFS datastores. Workaround: There is no workaround for this issue.
826201	Problem: Shrinking a thinly provisioned LUN fails with a connection timed out error. Workaround: To work around this issue, shrink the LUN in smaller increments.

Bug ID	Description
850838	Problem: In MetroCluster environments, after you perform a switchover/switchback operation, the Storage Virtual Machine (SVM) name is changed from vs1 to vs1-mc and vice versa. In this case, if the SnapDrive for Windows host is using VMDK disks exclusively, restore and mount workflows might fail. Workaround: To work around this issue, restart the SnapDrive service (SWSVC).
633626	Creating large RDM LUNS fails when SnapDrive for Windows is configured with Virtual Center credentials
843092	SnapDrive for Windows VMDK backups do not release memory.
838969	Using SnapDrive for Windows to create RDM LUNs freezes your VM.
821858	All of your scripts and applications may be required to use PowerShell 4.0 as a result of your SnapDrive for Windows versions 7.0.2 or 7.0.3 installation.
Microsoft hotfix 2908783	Windows Server 2008 R2, Windows Server 2012, and Windows Server 2012 R2 environments display data corruption issues when there are connections to multiple iSCSI storage array targets. Workaround: Download and install Microsoft hotfix 2908783. Microsoft Support Article 2908783: Data corruption occurs on iSCSI LUNs in Windows

Known issues identified in previous releases

The following issues are reported in previous editions of the release notes:

Bug ID	Description
768623	Your FlexClone volume disk disconnect operations fail if SMI-S Agent and SnapDrive are using the same virtual storage server.
767205	SnapManager for Hyper-V backup operations fail if the VM configuration name or Snapshot copy location name do not end in a trailing backslash.
757590	You might experience difficulty installing SnapDrive on systems without Internet access.
743215	You might not be able to immediately create Snapshot copy backups on volume shares when a restore operation is in progress.
739462	You encounter error messages when SnapDrive deletes certain LUNs.
708057	When you perform VMDK SnapRestore operations on a VM running Windows Server 2012 and ESX 5.0U2, data is not restored.

Bug ID	Description
664512	You experience slow restarts when the hotfixes associated with Microsoft KB 2729452 or 2742599 are installed on Windows Guest with SnapDrive and ESX integration.
656135	You cannot create an RDM LUN larger than 2 TB when SnapDrive is configured with vCenter credentials. This issue is fixed in vSphere versions 5.0U3, 5.1U2, and 5.5 GA; this issue still exists if you are working on systems with older versions of these vSphere version families.
642832	You cannot automatically rename CSV reparse points.

Pass-through disk delete/disconnect fails after changing driver letter

Description

This message occurs when you change the assigned drive letter or mount point for existing pass-through disks.

Corrective action

You can manually delete or disconnect your pass-through disks.

- You can manually delete or disconnect your pass-through disks using the Hyper-V Manager, as follows:
 1. Navigate to **VM Settings**.
 2. Under **SCSI Controller**, use the bus, LUN, and target numbers to choose the physical disk.
 3. Click **Remove**, and then click **OK**.
- You can manually delete or disconnect your pass-through disks by using SnapDrive for Windows Management Console on the parent host, as follows:
 1. Navigate to **Disk Management** and bring your disk online.
 2. Refresh SnapDrive for Windows Management Console so that the LUN is displayed with the volume name.
 3. Select and run **Disconnect or Delete LUN**.

You can manually delete or disconnect your pass-through disk from a clustered parent host using the Failover Cluster Manager as follows:

1. Navigate to **VM Group**.

2. Right-click your virtual machine and select **Settings**.
3. Under **SCSI Controller**, use the bus, LUN, and target numbers to choose the physical disk.
4. Click **Remove** and then click **OK**.
Note: This also removes the LUN from the VM Group. The LUN is placed back to the Available Storage Group.
5. Using owner node's SnapDrive for Windows Management Console, navigate to the Available Storage Group and run **Disconnect or Delete LUN**.

How to get help and find more information

The NetApp Support Site provides access to troubleshooting tools, product documentation, and technical assistance. You can use NetApp Community forums to connect with peers, and the NetApp Library to access technical reports and white papers.

Resource	Description
<i>NetApp Support Site</i>	Access troubleshooting tools, product documentation, and technical support assistance.
<i>NetApp Community public forum</i>	Connect with peers, ask questions, exchange ideas, find resources, and share best practices.
<i>NetApp Library</i>	Access technical reports, white papers, and other documents.

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