

SnapDrive™ 4.1 for Windows®

Release Notes

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Contents of the release notes

Topics covered

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Features of this release

About this release

The major new and enhanced features of SnapDrive™ 4.1 for Windows® include support for the following:

- ◆ Use on the x64 Windows OS (SnapDrive 4.1 currently supports the x64 Windows OS only when using the Microsoft iSCSI Software Initiator 2.01)
- ◆ Important bug fixes

For the most up-to-date information about HBAs qualified for use with SnapDrive, see the iSCSI Host Compatibility Matrix on the NOW NetApp on the Web™ (NOW™) site at the following URL:

http://now.netapp.com/NOW/knowledge/docs/san/fcp_iscsi_config/iscsi_support_matrix.shtml/.

Limitations

Features not supported in SnapDrive 4.1

The SnapDrive 4.1 software does not support the following:

- ◆ Use of IA64 systems
- ◆ Management of VLDs and conversion of VLDs to LUNs
- ◆ Use of volume mount points for Windows 2000® clusters
- ◆ Use of LUN cloning
- ◆ Use of SnapDrive to manage dynamic disks or raw disks
- ◆ Use of qtree quotas (however, SnapDrive does support the use of qtrees without quotas)
- ◆ Automatic triggering of qtree-based synchronous mirroring (however, SnapDrive does support the use of SnapMirror to replicate volumes)
- ◆ Connection to Data ONTAP MultiStore/Æ virtual filer partitions other than the physical ihosting filer [vfiler0]. See the SnapDrive Compatibility Matrix on NOW for the latest information.
- ◆ Extended partitions in a virtual disk (SnapDrive only supports a single primary partition on a virtual disk)
- ◆ Use of FCP Windows Attach Kit 2.0 or earlier on the x64 Windows OS
- ◆ Use of QLogic™ iSCSI HBAs for Windows 2000 Microsoft® Cluster Service (MSCS) with or without MPIO
- ◆ Use of QLogic iSCSI HBAs on the x64 Windows OS
- ◆ Volume mount points for use with SnapManager 3.1.1 for Exchange and SnapManager 2.0 for SQL Server or earlier SnapManager versions

Considerations when using the Microsoft iSCSI software initiator

When using the Microsoft iSCSI software initiator, consider the following:

- ◆ In a Microsoft Cluster Service configuration (MSCS), mount no more than 30 LUNs per host (plus one quorum) per Windows cluster, with no more than 15 LUNs per cluster group.

NetApp is actively working with Microsoft to support a greater number of LUNs per host. The NOW pages will be updated when this issue is resolved.
- ◆ In a noncluster configuration, the Exchange service and the SQL service must be configured with a dependency on the iSCSI software initiator service.

- ◆ Use of the Microsoft iSCSI software initiator is not supported with the Windows 2000 Microsoft Cluster Service (MSCS).

Upgrade information

Upgrading to SnapDrive 4.1

You can upgrade directly to SnapDrive 4.1 from SnapDrive 2.0.1 or later if you are not using VLDs.

If you are running a release earlier than SnapDrive 2.0.1, or you are running the VLD Manager application, you must first upgrade to SnapDrive 2.0.1 or 2.1; upgrade to SnapDrive 3.1.1R1, 3.2, or 3.2R1 using the upgrade-and-conversion process described in the documentation for the release to which you are upgrading; and then upgrade to SnapDrive 4.1.

You can access the documentation for SnapDrive 2.0.1 and 2.1 through their respective Description pages on the NetApp on the Web (NOW) site at <http://now.netapp.com/NOW/cgi-bin/software/>.

Upgrading from SnapDrive 2.1

If you are upgrading from SnapDrive 2.1, see Bug ID 101404 in “[Known issues](#)” on page 12 for an upgrade issue and workaround.

Upgrading the iSCSI software initiator

To upgrade your Microsoft iSCSI software initiator for stand-alone and clustered configurations, see the *SnapDrive 4.1 Installation and Administration Guide*. The guide is available on the NOW site at <http://now.netapp.com/>. From the NOW site, navigate to the documentation section.

SnapDrive requirements

System requirements

The following table shows the system requirements for SnapDrive 4.1.

Component	Requirement
Operating system on the filer	Data ONTAP software version 7.0.2 or later. Rapid LUN restore and fractional spacing reservation monitoring for LUNs having less than 100% space reservation require Data ONTAP software release version 7.1 or later. Note_____ For the most current list of supported Data ONTAP software versions, see the SnapManager and SnapDrive Compatibility Matrix on the NetApp on the Web (NOW) site at http://now.netapp.com/.
Licenses enabled on the filer	◆ iSCSI, if you plan to use iSCSI-accessed virtual disks ◆ FCP, if you plan to use FCP-accessed virtual disks ◆ SnapRestore® software, which is required only for restoring virtual disks from Snapshot™ copies ◆ SnapMirror software, if you plan to use the SnapMirror option Note_____ The iSCSI and FCP licenses supplied with SnapDrive enable all the CIFS functionality necessary for using SnapDrive. If you also want <i>full-featured, direct CIFS access</i> to a particular filer, you must install a separate CIFS license on that filer.
NetApp Host Agent	If you are currently running NetApp Host Agent (to manage SnapDrive host with DataFabric® Manager), you must upgrade to NetApp Host Agent software release 2.3.1 or later before upgrading to SnapDrive 4.1 on 32-bit systems. For more information, go to the “SnapDrive 4.1 for Windows Description Page” on the NOW site at http://now.netapp.com/NOW/cgi-bin/software/.

Component	Requirement
Hardware on the Windows host machine	◆ 2.8 GHz Pentium® 4 for 32-bit systems, Intel® Xeon® or AMD Opteron™ for 64-bit systems ◆ 1 GB system RAM ◆ Emulex® LP9002L-F2 or LP10000 HBAs for FCP (on 32-bit systems), supplied by NetApp Emulex driver If you are running SnapDrive 4.1 on a Windows 2003 host in an FCP environment, download and install Emulex driver 5-1.11a0. This driver is available from the “SnapDrive 4.1 for Windows Description Page” on the NOW site at http://now.netapp.com/NOW/cgi-bin/software/. From this gateway, choose the SnapDrive for Windows product and then choose SnapDrive 4.1. HBAs and NICs To determine the number and type of HBAs and NICs required by each host in your SnapDrive configuration, see the section on selecting a SnapDrive configuration in the <i>SnapDrive 4.1 Installation and Administration Guide</i>. The guide is available on the NOW site at http://now.netapp.com/. From this gateway, navigate to the documentation section. Obtain the latest firmware and drivers for the HBAs and network interface cards (NICs) you are using, to ensure high network bandwidth and ease of configuration. ❖ The NIC you use to facilitate data transfer for the Microsoft iSCSI initiator can come from any vendor, but it must have the appropriate LOGO certification: “Designed for Windows Server 2003” or “Designed for Windows 2000.” ❖ The latest FCP driver and firmware for Windows 2000 is available on the NOW site at http://now.netapp.com/NOW/cgi-bin/software/. From this gateway, navigate to the SAN (FCP) Host Attach Kit for Windows download page. ❖ The Microsoft iSCSI initiator must be downloaded from the Microsoft site. For directions and links, go to the NOW site at http://now.netapp.com/NOW/cgi-bin/software/, scroll to the iSCSI Host Support Kit item, select the appropriate platform, and then click Go. ❖ If you are using QLogic HBAs, see the NetApp iSCSI Host Compatibility Matrix for information about the correct version to run. You can access the support matrix on the NetApp on the Web (NOW) site at http://now.netapp.com/.

Component	Requirement
Operating system on the Windows host machine	One of the following operating systems: ◆ Windows 2000 Server with Service Pack 4 (SP4) ◆ Windows 2000 Advanced Server with SP4 (for Windows cluster configurations) ◆ Windows Server 2003 Standard or Enterprise Edition, 32-bit, with SP1 ◆ Windows Server 2003 R2 Standard or Enterprise Edition, 32-bit ◆ Windows Server 2003 x64 versions, including R2, with no required Service Pack at this time
Microsoft Windows hotfixes	Before you can install SnapDrive, your host machine must have the appropriate Microsoft hotfixes installed. Note The Microsoft hotfixes 293778, 815198, 867818, 885294, 891957, 898790, 902837, 903081, 908249, 911030, and 912848 must be requested directly from Microsoft Product Support Services at http://support.microsoft.com/. Note The Microsoft hotfix 822831 can be downloaded from the NOW software download site at http://now.netapp.com/NOW/cgi-bin/software/. From this software page, navigate to the SnapDrive 4.1 download page. For Windows 2003 (32-bit and x64 versions) If your host is running Windows 2003 Server 32-bit Standard Edition or Enterprise Edition with R2 or SP1, or Windows 2003 Server x64 versions, including R2, you must install hotfixes 891957, 898790, 902837, 903081, 908249, 911030, and 912848.

Component	Requirement
Microsoft Windows hotfixes (cont.)	For Windows 2000 If your host is running Windows 2000 Server or Advanced Server with SP4, you must install hotfixes 293778, 815198, 867818, and 885294. Before installing hotfix 293778, see Bug ID 113541 in “Known issues” on page 12 for more information. Note If you encounter the problem described in the Microsoft Knowledge Base article 822831, you must install hotfix 822831. Note Although SP4 includes hotfix 815198, sometimes this hotfix does not update correctly and you are prompted that this hotfix is required. If prompted, install the individual hotfix or re-apply SP4.

Preparing the SnapDrive service account

Before installing SnapDrive, you must establish a SnapDrive service account. The service account must be created using ASCII characters only, even when you use non-ASCII operating systems. You must log in to this account whenever you need to perform SnapDrive-related functions on either a host or a filer. You must establish the following types of access for this service account.

Note

This document assumes that you possess general familiarity with Windows 2000 or Windows 2003 system administration and NetApp storage system administration. To help you enable the various types of access required for the SnapDrive service account, this section provides intentionally cursory guidance for each task mentioned. For detailed procedures, see your Windows and Data ONTAP documentation.

- ◆ You must be able to log in to the host using the service account.

Note

If at any time you change the password for this account (for example, from the Windows login dialog panel), remember that you must make the same change to the password the SnapDrive service uses to log in. You can do this from the Start Menu: click Settings > Control Panel > Administrative Tools > Services > SnapDrive > Log On.

- ◆ The service account must have administrator privileges on both the storage system and host.
- ◆ If you do not have pass-through authentication configured, the service account must be a domain account.
- ◆ If you do not have pass-through authentication configured, the host and storage system must belong to the same domain as the service account, or they must belong to domains that have direct or indirect trust relationships with the domain to which the service account belongs.
- ◆ The service account must have administrator access to the storage system. It must belong to the BUILTIN\Administrators group on the storage system. You can accomplish this in several ways, including connecting a Remote Administration session to the storage system from the host. For instance, right-click the Local Machine icon in the Computer Management window, select Connect to Another Computer from the drop-down menu, and then select the storage system from the list of machines.

Next, add the service account to the Administrators group. (One way to do this is by clicking My Computer, right-clicking Manage on the drop-down menu, and then navigating to System Tools > Local Users and Groups > Groups > Administrators.)

- ◆ The host must have access to the storage system volumes on which virtual disks are stored.

You enable such access by creating a share on the storage system for each volume or qtree you want the host to access. This can be done only after you create the volumes or qtrees. The procedure is covered in the section on creating a CIFS share of the *SnapDrive 4.1 Installation and Administration Guide*.

Bug fixes

About this section

The following table lists bugs that were fixed in SnapDrive 4.1. For a complete list of bug fixes, launch your Web browser, navigate to the following URL, type the Bug ID into the “Enter Bug IDs” field, and then click Go:

<http://now.netapp.com/NOW/cgi-bin/bol/>

Bug ID	Description
177226	Using a QLA4010 HBA (2.1.0.8 STOR miniport) with Microsoft Cluster Service (MSCS) containing multiple shared SnapDrive mount point resources failed over to the secondary node when a <code>cf takeover</code> was initiated on the filer. This problem is fixed in a later version of the QLogic STOR miniport driver. See the QLogic Web site and refer to iSCSI support matrix on NOW for the most up-to-date information.
176809	All LUNs could become inaccessible after a takeover on a FAS270 filer in <code>dual_fabric fcp cfmodes</code> or on a FAS3020/3050 filer in <code>mixed fcp cfmodes</code>. A fix has been implemented in Data ONTAP 7.0.3 and later.

Known issues

About this section The following table lists issues known to exist in SnapDrive 4.1. For the latest information about workarounds, launch your Web browser, navigate to the following URL, type the Bug ID into the “Enter Bug IDs” field, and then click Go.

<http://now.netapp.com/NOW/cgi-bin/bol/>

Bug ID	Description and workaround
113541	When the MPIO drivers are installed along with SnapDrive, the cluster loses disk resources after reboot. During MPIO driver uninstallation, disks are exposed to the Microsoft Ftdisk.sys driver by a different device name. The Ftdisk.sys changes the disk signature and the clusdisk driver fails to find the disks with the signature it has stored in the registry. Those same disks, then, are not cluster resources. The drive letter assigned to the disk also changes. Workaround: To properly uninstall the MPIO drive from the MSCS node systems so that the cluster resources are available and have the same drive letters, follow these steps: 1. Make all multipathed LUNs single path. 2. Uninstall SnapDrive and MPIO on node 2 and reboot. This causes all cluster resources to move to node 1. 3. Perform MSCS Move Group to move all resources from node 1 to node 2. 4. Uninstall SnapDrive and MPIO on node 1 and reboot. To reinstall SnapDrive, or SnapDrive and MPIO, follow these steps: 1. Reinstall SnapDrive with MPIO on node 1 and reboot. 2. Reinstall SnapDrive with MPIO on node 2 and reboot. 3. Verify that drive letters did not change on the LUN disk drives and that cluster resources are available.

Bug ID	Description and workaround
113629	SnapManager backups might fail after you move a LUN from the source volume to a qtree location on the same volume using the <code>lun move</code> operation. If this happens, you might see error messages in the event log. The following is an example of a log message for SnapManager for Exchange (when seen from SnapDrive, the Snapshot copies are grayed out): “Failed to flush a disk buffer for ZAPI: An attempt to create snapshot ‘exchsnap_hq-ex-1_recent’ of the ‘vol3’ volume with ‘async’ option failed on the filer filer1.” Error code: 13020. Error description: The specified snapshot copy already exists. Workaround: To avoid this situation, you must rename or delete the Snapshot copy from the filer console.
137799	If you use the LocalQuorum option to install Microsoft Cluster Server, SnapDrive might be unable to retrieve the system information. The Application Event log will show events such as SnapDrive Event ID 170. In iSCSI systems, the iSCSI Management container within the SnapDrive MMC will also disappear. Workaround: Replace the LocalQuorum disk with a LUN on the filer. The best way to accomplish this is to remove clustering and create the new quorum LUN according to the <i>SnapDrive 3.2 Installation and Administration Guide</i>. (This guide is available on the NOW site at http://now.netapp.com/. From this gateway, navigate to the documentation section.) Install clustering according to Microsoft’s documentation. Note_____ If reinstalling clustering is impossible, contact the Network Appliance Global Support Center for a workaround. _____
145695	During SnapDrive installation, the error message <code>swsetuphelper.dll : installshield failed to retrieve driver version information</code> might appear because SnapDrive installation tries to enumerate instances of the Win32_SCSIController class in Windows Management Instrumentation (WMI) and the enumeration does not return any data. The cause of this issue is installing the MS04-011: Security Update for Microsoft Windows. For additional information about this security update, go to the Microsoft Web site to view the Microsoft Knowledge Base article 835732 MS04-011: Security Update for Microsoft Windows. Workaround: Apply the Microsoft hotfix 835732 only to systems that are experiencing this specific problem. Go to the Microsoft Web site for this hotfix at http://support.microsoft.com/.

Bug ID	Description and workaround
158755	When upgrading Data ONTAP 6.5.4 to Data ONTAP 7.0.x in a cluster configuration using the Nondisruptive Upgrade (NDU) method, which eliminates service outage during upgrade, Windows hosts hang, resulting in I/O loss, delayed write errors, and MSCS failover. Because of this total path loss, the host cannot recover the disk. Workaround: After upgrading to SnapDrive 4.1, upgrade your FAS270c filers using the following steps: 1. Download Data ONTAP version 6.5.4 or 7.0.x to each FAS270 filer. See the Upgrade Guide for the particular version of Data ONTAP you are downloading. Find the guide you need on the NOW site at http://now.netapp.com/. From the NOW site, navigate to the documentation section. 2. On filer1, issue <code>cf takeover</code>, and then wait for the partner FAS270 filer to boot back up with the new kernel prompt, waiting for giveback. 3. Wait for all host I/O processes to be running again. 4. On filer1, issue <code>cf giveback -f</code>. 5. Once giveback finishes, immediately take down the partner port on your FAS270 filers. Use the <code>fcg config <port> down</code> command. For example, on the FAS270c filers, the command is <code>fcg config 0c_2 down</code>. 6. On filer2, after it boots, immediately take down the partner port on your FAS270 filers. Use the <code>fcg config <port> down</code> command. Note _____ Due to a filer bug, you must quickly take down then bring up the local port to be able to take down the partner port. For example, if <code>fcg config 0c_2 down</code> on the FAS270 filer fails, issue <code>fcg config 0c up</code> followed by <code>fcg config 0c_2 down</code>. _____ 7. Wait for all host I/Os to resume for at least five minutes. Five minutes ensures the host system properly registers all state change notifications. At this point, filer1 is still on 6.5.4 and filer2 is on 7.0.x. 8. On filer1, issue a reboot, and then immediately implement Step 8. 9. On filer2, issue a <code>cf takeover -n</code>.

Bug ID	Description and workaround
158755 (cont.)	10. Once takeover finishes, enable the partner port. Use the <code>fcport config <port> up</code> command. Note _____ Due to a filer bug, the port doesn't come online the first time you run this command. Retry the command until the port comes online. 11. Wait for all host I/O processes to resume for at least five minutes and for the filer1 prompt, waiting for giveback. 12. On filer2, issue a <code>cf giveback</code>. Both FAS270 filers are now on 7.0.x. Workaround: After upgrading to SnapDrive 3.2, upgrade other (non FAS270c) NetApp filer cluster configurations that support NDU, such as the FAS960c filers, using the following steps: 1. Download Data ONTAP version 6.5.4 or 7.0.x to each filer. See the Upgrade Guide for the particular version of Data ONTAP you are downloading. Find the guide you need on the NOW site at http://now.netapp.com/. From the NOW site, navigate to the documentation section. 2. On filer1, issue <code>cf takeover</code> and then wait for the partner filer to boot back up with the new kernel prompt, waiting for giveback. 3. Wait for all host I/O processes to be running again. 4. On filer1, issue <code>cf giveback -f</code>. 5. Once giveback finishes, immediately take the b ports on your filers offline. Use the <code>fcport config <port> down</code> command. Run this command once per adapter. 6. On filer2, after it boots, immediately take the b ports on your filers offline. Use the <code>fcport config <port> down</code> command. Run this command once per adapter. 7. Wait for all host I/O processes to resume for at least five minutes. Five minutes ensures the host system properly registers all state change notifications. At this point, filer1 is still on 6.5.4 and filer2 is on 7.0.x. 8. On filer1, issue a reboot, and then immediately implement Step 8. 9. On filer2, issue a <code>cf takeover -n</code>.

Bug ID	Description and workaround
158755 (cont.)	10. Once takeover finishes, enable the b ports. Use the <code>fcv config <port> up</code> command. Note _____ Due to a filer bug, the port doesn't come online the first time you run this command. Retry the command until the port comes online. 11. Wait for all host I/O processes to resume for at least five minutes and for the filer1 prompt, waiting for giveback. 12. On filer2, issue a <code>cf giveback</code>. Both filers are now on 7.0.x.
177226	Using a QLA4010 HBA (2.1.0.8 STOR miniport) with Microsoft Cluster Service (MSCS) containing multiple shared SnapDrive mount point resources fails over to the secondary node when a cf takeover is initiated on the filer. Workaround: Move the resource back to the primary node after the cf takeover completes.
176809	All LUNs might become inaccessible after a takeover on a FAS270 filer in dual_fabric fcp cfmodes or on a FAS3020/3050 filer in mixed fcp cfmodes. FAS270 does not have a workaround, however the FAS3020/3050 filer workaround is to avoid using the mixed fcp cfmodes. Note _____ Once this problem occurs, the only remedy is to stop and restart the fcp service. To stop the fcp service, use the command <code>fcv stop</code>. To restart the fcp service, use the command <code>fcv start</code>. Rebooting the host will not help to overcome the problem.

Bug ID	Description and workaround
178198	SnapDrive Space Reservation Monitor requires that Msxml13.dll be installed on the host machine. If this dll is not present, Space Reservation Monitor errors out saying that SnapDrive Space Reservation Monitor is unavailable to verify the space reservation conditions for all virtual disks. For most host machines with Windows 2000/SP4 and IE 5.0, Msxm12.dll is not installed and SnapDrive gives the following error message in the eventlog: Failed to create the instance of 'MXXMLWriter' class, Reason: "Microsoft XML parser 3.0 is not installed". Workaround: To find out how you can obtain the Msxm13.dll file, go to the following link: http://support.microsoft.com/default.aspx?scid=kb;en-us;269238 Since IE6.0 or the MDAC 2.7 SP1 package installs Msxm13.dll, for a Windows 2000/SP4 machine, either upgrade the IE5.0 to IE6.0 or install the MDAC 2.7 SP1 package to solve this problem.
178420	To be consistent with previous SnapDrive releases and to simplify LUN management, SnapDrive creates new LUNs with the .lun extension instead of the extension specified by the user. Also, SnapDrive MMC expects .lun extension for disks connection. Workaround: Rename the LUNs on the filer side to follow SnapDrive expectation. If you want to mount a LUN in a Snapshot copy, SDCLI can be used to avoid name checking.
182220	If a LUN connected to a Windows 2000 server is offlined using FilerView instead of SnapDrive, the SnapDrive MMC and Explorer might hang indefinitely and your system might also become unresponsive. A system reboot will help recover your system. This problem affects Windows 2000 Server with Service Pack 4. Workaround: There is no workaround.

Bug ID	Description and workaround
185003	During disk enumeration SnapDrive tries to obtain Windows volume information. If the disk is not formatted, Windows volume does not exist and SnapDrive is unable to find the disk's corresponding Windows volume. In the case of the delete or disconnect operation, SnapDrive dismounts Windows volume before removing disk object, so if SnapDrive tries to enumerate disks during this time frame, Windows volume is not found for a disk that is still connected. When SnapDrive restores disks it also dismounts Windows volume and the same problem with disk enumeration occurs. In the case of Microsoft Cluster configurations, on the passive nodes, SnapDrive tries to get Windows volume information from the active node and from the cluster API. If cluster service on a passive node is not started, SnapDrive cannot initiate cluster API calls and as a result cannot get Windows volume information, which creates disk enumeration problem. Workaround: Verify system configuration and reinitiate disk enumeration.
189905	When uninstalling MPIIO from AMD x64-based systems in stand-alone or MSCS configurations, the process will take longer to uninstall when compared to non-MPIO or similar Intel XEON x64 configurations. Workaround: During unstallation you should not enable or check the “Remove MPIIO” option. This will not remove the MPIIO drives and DSM from the system.

