

SnapDrive™ 3.2 for Windows®

Release Notes

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Part number 215-01507
July 2005

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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™ 3.2 include support for the following: ◆ Multi-Path I/O (MPIO) on Internet SCSI (iSCSI) using the QLogic 4010 iSCSI Host Bus Adapter (HBA) ◆ MPIO on iSCSI using the Microsoft® software initiator 2.0 ◆ Synchronous SnapMirror® integration ◆ Storage Area Network (SAN) booting supported on Fibre Channel Protocol (FCP) and iSCSI HBAs that support SAN booting ◆ Important bug fixes. See “Bug fixes” on page 10 in this release. ◆ Internationalization for the German language SnapDrive 3.2 also recognizes Microsoft Windows Hardware Quality Lab (WHQL) certified iSCSI HBAs. For the most up-to-date information about HBAs qualified for use with SnapDrive, see the iSCSI Host Solutions Support Matrix on the NetApp on the Web (NOW) site at http://now.netapp.com/NOW/knowledge/docs/san/fcp_iscsi_config/iscsi_support_matrix.shtml/.
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Limitations

Features not supported in SnapDrive 3.2

The SnapDrive 3.2 software does not support the following:

- ◆ Management of virtual local disk-types (VLDs)
- ◆ Use of 64-bit Windows
- ◆ Use of Logical Unit Number (LUN) cloning
- ◆ Use of virtual disks managed by SnapDrive, as in
 - ❖ Dynamic disk
 - ❖ Raw disk
- ◆ Use of qtree quotas. (However, SnapDrive does support the use of qtrees without quotas.)
- ◆ Use of SnapMirror® functionality to replicate individual qtrees. (However, SnapDrive does support the use of SnapMirror to replicate volumes.)
- ◆ Connection to Data ONTAP MultiStore® virtual filer partitions. (However, SnapDrive can connect directly to the physical “hosting” filer [vfiler0] in a MultiStore installation.)
- ◆ A virtual disk as an extended partition. SnapDrive only supports a single, primary partition on a virtual disk.
- ◆ Use of QLogic iSCSI HBAs for Windows 2000 Microsoft Cluster Service (MSCS) with or without MPIO.

Limitations of the Microsoft iSCSI software initiator

- ◆ 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 2.0 or later is not supported with the Windows 2000 Microsoft Cluster Service (MSCS).

Upgrade information

Upgrading to SnapDrive 3.2

You can upgrade to SnapDrive 3.2 from SnapDrive 3.1, 3.0R2, 3.0R1, 3.0, 2.1, or 2.0.1.

If you are running a release earlier than 2.0.1, or if you are running the VLD Manager application, you must first upgrade to 2.0.1 or 2.1, and then upgrade to 3.2. For upgrade information, read the documentation specific to the release you are upgrading to.

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 14 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 3.2 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 3.2.

Component	Requirement
Operating system on the filer	Data ONTAP software versions 6.5.4 through 7.0.x Note_____ For the most current list of supported Data ONTAP software versions, see the SnapManager & 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. _____

Component	Requirement
Hardware on the Windows host machine	◆ 500 MHz Pentium® III ◆ 256 MB system RAM ◆ Emulex® LP9002L-F2 or LP10000 HBAs for FCP, supplied by NetApp Note _____ If you are running SnapDrive 3.2 on a Windows 2003 host in an FCP environment, download and install Emulex driver 5-1.11a0. This driver is available from the “SnapDrive 3.2 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, then choose SnapDrive 3.2. Note _____ 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 3.2 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. Note _____ 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.

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 Edition with SP1 or Microsoft hotfixes ◆ Windows Server 2003 Enterprise Edition with SP1 or Microsoft hotfixes
Microsoft Windows hotfixes	Before you can install SnapDrive, your host machine must have the appropriate Microsoft hotfixes installed: Note _____ The Microsoft hotfixes 833167, 293778, 885294, 815198, 867818, 898706, 896592, 886652, 887532, and 886800 must be requested directly from Microsoft Product Support Services at http://support.microsoft.com/. Note _____ The Microsoft hotfixes 824354 and 82231 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 3.2 download page. For Windows 2003 ◆ If your host is running Windows 2003 Standard Edition or Enterprise Edition without SP1, you must install hotfixes 833167, 867818, 886652, 887532, 898706, and 896592. ◆ If your host is running Windows 2003 Enterprise Edition in a cluster, you must install hotfixes 824354 and 886800. Note _____ If your host is running Windows 2003 Standard Edition or Enterprise Edition with SP1, no hotfixes are required.

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 14 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. 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 filer 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: Choose Settings > Control Panel > Administrative Tools > Services > SnapDrive > Log On.

- ◆ The service account must have administrator privileges on both the filer 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 filer 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 filer. It must belong to the BUILTIN\administrators group on the filer.

You can accomplish this in several ways, including connecting a Remote Administration session to the filer 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 filer 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, then navigating to System Tools > Local Users and Groups > Groups > Administrators.)

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

You enable such access by creating a share on the filer 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 3.2 Installation and Administration Guide*.

Bug fixes

About this section

The following table lists bugs that were fixed in SnapDrive 3.2. For a complete list of bug fixes, launch your Web browser, navigate to <http://now.netapp.com/NOW/cgi-bin/bol/>, type the Bug ID into the “Enter Bug IDs” field, and then click Go.

Bug ID	Description
131344	When you installed Microsoft hotfix 840281, the clusres.dll file in the \Windows\Cluster directory might not have updated to the correct version, 5.2.3790.193.
140903	During VLD disk delete/disconnect/convert operations, SnapDrive 3.1 would error out. This happened because SnapDrive 3.1 tried to get a serial number for the disk without checking the disk type.
151647	When SnapManager updated, SnapDrive checked volume options. SnapDrive would try to set volume options if create_ucose and/or convert_ucose were not on, or nosnapdir was not off, but since the destination volume is write protected, SnapDrive could not set these options and would error out.

Bug ID	Description
151259	SnapDrive 3.1 fresh installation set the DISK TIMEOUT value (TimeOutValue) to 10. This key was located under: [HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\Disk] TimeOutValue = 10 This timer started after SCSI Request Block (SRB) for Disk devices, such as local disk or LUNs was submitted to storport or scsiport driver. If SRB was not completed within Disk TimeOutValue duration, the request would complete with SRB_STATUS_COMMAND_TIMEOUT and the upper layer had to retry. When MPIO drivers were installed, NTAPDSM marked those requests as retry. In the absence of MPIO drivers, the Disk Class driver retried the SRB. In cases when the TimeOutValue registry value was lower, about 10 seconds, and the scsi target took more time to serve the request, frequent retries occurred causing event ID 51 to be logged in the system event log from the disk driver.
149924/ 151259	FCP Windows Attach Kit 2.0 and SnapDrive 3.2 set the TimeOutValue under HKLM,SYSTEM\CurrentControlSet\Services\disk key to 190 sec. FCP Windows Attach Kit 1.2 set this TimeOutValue to 255 sec. It is required for proper operations with LUNs on Storage devices on SAN. Windows Cluster service installation set Disk TimeOutValue to 20 sec., which could cause cluster service to lose reservation or disrupt operations of Multipathing software.
141370	The instructions in the SnapDrive 3.1 Installation and Administration Guide and Help for creating a virtual disk as a quorum disk in Windows 2003 were incorrect. The SnapDrive 3.2 Installation and Administration Guide has the correct information.

Bug ID	Description
141316	Since a LUN in a snapshot cannot be mapped directly to a host, in order to mount the LUN in snapshot, SnapDrive created a special LUN in the active file system, which was backed by the LUN in snapshot. It was given a GUID name .rws extension. On Data ONTAP versions before 7.0 the .rws file was initially created as space-reserved due to Bug ID 130299. The space reservation was being removed immediately after creation, but the creation itself failed if the space available on the volume was less than the size of the backing LUN in snapshot. This problem does not occur in Data ONTAP 7.0 and later because BUG ID 130299 is fix for these versions.
151726	SnapDrive 3.1.1 disk expand operation hung on Windows 2003 with SP1 due to a bug in the SP1 disk class driver. Microsoft acknowledged this problem in SP1 and provided a workaround. The work around was implemented in SnapDrive 3.1.1R1.
140086	During shared disk disconnect/delete operation SnapDrive could go into an endless loop. This happened due to case insensitive comparisons between windows host iSCSI initiator names and filer side initiator names when performing specific operations.
139971	SnapDrive 3.1.1 removed the need for hostname resolution (Bug ID 111107) and in doing so used a valid filer IP address from that host's perspective for all SnapDrive operations. When SnapDrive for Windows Exchange 3.1 ran a verification on a remote server, SnapDrive internally passed the list of IP addresses to the remote server to give the location on the LUN, which should have been mounted. In cases where the network latency to connect the filer on one of the filer IPAddresses exceeded 30 seconds, SnapDrive failed to mount the LUN in a snapshot and SnapDrive for Windows Exchange 3.1 verification possibly failed.

Bug ID	Description
136467	During the SnapDrive service startup process, SnapDrive tried to determine if the Microsoft iSCSI service was installed on the system and could be used for iSCSI related tasks. As a method for this determination, SnapDrive tried to load the iscsidsc.dll file in the service process. If this file was not found and successfully loaded, SnapDrive assumed that iSCSI could be used on this system and attempted to obtain status of the Microsoft iSCSI service. But, if the Microsoft iSCSI service was incorrectly uninstalled from the user system without stopping the SnapDrive service first, the iscsidsc.dll file might have still existed on the system even though the iSCSI service was uninstalled. In this case SnapDrive errored out with, SnapDrive service failed to start. Error code: The handle is invalid.
138775	In some cases SnapMirror ZAPI returned undocumented status, which could not be handled by SnapDrive and all LUNs on the volume with undocumented SnapMirror status might not have been enumerated.
142896	SnapDrive inadvertently logged usernames and passwords in plaintext in the VSS hardware provider log file.
135104	At times the Exchange database and transaction log physical integrity verification operation failed on Windows Server 2003 Standard Edition with the following error: Error code: 0x80070091 The directory is not empty. This failure occurred when drive letter Z:\ was assigned to the CDROM or other removable storage devices.

Known issues

About this section The following table lists issues known to exist in SnapDrive 3.2. For the latest information about workarounds, launch your Web browser, navigate to <http://now.netapp.com/NOW/cgi-bin/bol/>, type the Bug ID into the “Enter Bug IDs” field, and then click Go.

Bug ID	Description and workaround
132636	When you choose to uninstall MPIO drivers, using the SnapDrive uninstall process in SAN boot configuration, the MPIO drivers are uninstalled as normal. However upon system reboot the Multi-Path Support driver (mpio.sys) is only partially uninstalled and appears disabled. The Windows 2000 Server and Windows Server 2003 operating systems exhibit different characteristics when this happens: ◆ Windows Server 2003: “Multi-Path Support” under SCSI and RAID Controller (Device Manager) appears with a yellow exclamation mark. (Properties reveal that the driver is disabled.) “This device is disabled. (Code 22).” ◆ Windows 2000 Server: “Multi-Path Support” under SCSI and RAID Controller (Device Manager) appears normal. (Properties reveal that the driver is disabled.) “This device is disabled. (Code 22).” Workaround : To ensure that MPIO drivers are completely removed in SAN boot configurations, you must manually uninstall the disabled driver. Although you are prompted to reboot the system once you have uninstalled the driver, you do not need to reboot the system. For a root-enumerated device (such as Multi-Path Support driver - mpio.sys), the system does not let you uninstall a ROOT device marked as “not disabled”. The reason is that ROOT devices, by design, do not come back when they are uninstalled like Plug and Play devices do. The mpio.sys driver sets the bit “PNP_DEVICE_NOT_DISABLEABLE - The device must not be disabled” for a device that is required for proper system operation. For example, if a driver receives notification that a device is in the paging path (IRP_MN-DEVICE_USAGE_NOTIFICATION for DeviceUsageTypePaging), the driver calls IoInvalidateDeviceState and sets this flag in the resulting IRP_MN_QUERY_PNP_DEVICE_STATE IRP. If this bit is set for a device, the PnP Manager propagates this setting to the device’s parent device, its parent’s parent device, and so forth.

Bug ID	Description and workaround
(cont.) 132636	If this bit is set for a nonenumerable device, the device cannot be disabled or uninstalled. If a device is marked PNP_DEVICE_NOT_DISABLEABLE, the debugger displays a DNUF_NOT_DISABLEABLE user flag for the DevNode. The debugger also displays a DisableableDepends value that counts the number of reasons why the device cannot be disabled. This value is the sum of X+Y, where X is 1 if the device cannot be disabled and Y is the count of the device's child devices that cannot be disabled.
130605	For SnapDrive to enumerate HBAs and LUNs, the Emulex driver and HBAAPI dlls must be installed, and the Storage Networking Industry Association (SNIA) registry key updated. Using the SAN Host Attach Kit 1.2 for FCP on Windows, installs the driver, the HBAAPI dlls, and updates the SNIA registry key. Workaround : If you do not use the SAN Host Attach Kit 1.2 for FCP on Windows and you have the Emulex driver installed, you need to install the Emulex application package, which installs the HBAAPI and other applications. The application package is available from the Emulex web site.
113629	SnapManager backups might fail after moving 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 snapshots 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 already exists. Workaround : To avoid this situation, you must rename or delete the snapshot from the filer console.

Bug ID	Description and workaround
113541	When MPIO drivers are uninstalled 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 result is that Ftdisk.sys changes the disk signature, and the clusdisk driver fails to find the disks with the signature it has stored in the registry. Therefore, those same disks are not cluster resources and the drive letter assigned to the disks 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 multi-pathed 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 and MPIO, or only SnapDrive, 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.
112165	If the Network Associates anti-virus driver for Windows 2000 version is installed in the system and the anti-virus service is running, doing an Exchange backup using SnapManager might cause the system to hang. The specific driver names are naifsrec.sys and naifiltr.sys. Workaround : Either update the drivers to Windows 2003 versions or disable the anti-virus service and reboot the computer.
109786	The SnapDrive service might hang during SnapManager for Exchange operations. When this happens, the following message is logged in the event log for the SnapDrive service and other SnapDrive operations: “Another virtual disk operation is already in progress. Please retry the operation later”. This event is also logged when the SnapDrive service is running normally with other SnapDrive operations; however, the difference is that in a hung state, SnapDrive exceeds a reasonable amount of time for the operation to complete.

Bug ID	Description and workaround
101404	When upgrading from SnapDrive 2.1 to 3.0 or later, you see a message that your currently installed MPIO files are newer than the ones you are installing. This is a result of a change in Microsoft's numbering scheme for these drivers. The driver versions on the MPIO files in SnapDrive 2.1 have a higher build number; however, the SnapDrive 3.0 or later version of the MPIO files are the newest build. Workaround: When you select Update MPIO drivers, you see two dialog boxes prompting you for permission to overwrite a newer file with an older one. Click Yes in both dialog boxes.
140767	This bug surfaces only in Cluster Failover (CF) mode configurations, which have filer FCP ports in loop mode. When I/O from the host is running, takeover/giveback can cause FCP sequences to time out. The Emulex storport miniport driver completes SCSI Request Block (SRB) with SRB_STATUS_COMMAND_TIMEOUT. These I/O requests must be retried. However, instead of retrying, MPIO in SnapDrive 3.2 marks the device fatal and removes the device from the OS. Although MPIO removes that device, the lower level SCSI device remains at that time. MPIO in SnapDrive 3.2 and later has the fix for this to retry when SRB_STATUS_COMMAND_TIMEOUT is returned by storport driver. Filer CFO in other CF Modes does not lead to this kind of failure. Workaround: While using SnapDrive 3.1, use SF modes, which do not configure the filer FCP ports in loop mode, or use SnapDrive 3.2 or later.
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. To upgrade Data ONTAP 6.5.4 to 7.0.x without service outage, use the following workarounds for your FAS270c and other NetApp filer cluster configurations that support NDU. Workaround: After upgrading to SnapDrive 3.2, upgrade your FAS270c using the following steps. 1. Download Data ONTAP version 6.5.4 or 7.0.x to each FAS270. 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>, then wait for the partner FAS270 to boot back up with the new kernel prompt, <code>waiting for giveback</code>.

Bug ID	Description and workaround
158755 (cont.)	3. Wait for all host I/Os to be running again. 4. On filer1, issue <code>cf giveback -f</code> 5. Once giveback finishes, immediately down the partner port on your FAS270 filers. Use the <code>fcg config <port> down</code> command. For example: On the FAS270c, the command is <code>fcg config 0c_2 down</code>. 6. On filer2, after it boots, immediately down the partner port on your FAS 270 filers. Use the <code>fcg config <port> down</code> command. Note _____ Due to a filer bug, you must quickly down then up the local port to be able to down the partner port. For example: If <code>fcg config 0c_2 down</code> on the FAS270 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, then immediately implement Step 8. 9. On filer2, issue a <code>cf takeover -n</code>. 10. Once takeover finishes, enable the partner port. Use the <code>fcg config <port> up</code> command. Note _____ Due to a filer bug, the port doesn't online the first time you run this command. Retry the command until the port online. 11. Wait for all host I/Os 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, 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.

Bug ID	Description and workaround
158755 (cont.)	2. On filer1, issue <code>cf takeover</code>, then wait for the partner filer to boot back up with the new kernel prompt, <code>waiting for giveback</code>. 3. Wait for all host I/Os to be running again. 4. On filer1, issue <code>cf giveback -f</code> 5. Once giveback finishes, immediately offline the b ports on your filers. Use the <code>fcg config <port> down</code> command. Run this command once per adapter. 6. On filer2, after it boots, immediately offline the b ports on your filers. Use the <code>fcg config <port> down</code> command. Run this command once per adapter. 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, then immediately implement Step 8. 9. On filer2, issue a <code>cf takeover -n</code>. 10. Once takeover finishes, enable the b ports. Use the <code>fcg config <port> up</code> command. Note_____ Due to a filer bug, the port doesn't online the first time you run this command. Retry the command until the port online. _____ 11. Wait for all host I/Os to resume for at least five minutes and for the filer1 prompt, <code>waiting for giveback</code>. 12. On filer2, issue a <code>cf giveback</code>. Both filers are now on 7.0.x.

Bug ID	Description and workaround
140834	This problem happens when snapshot creation is attempted for more than one virtual disk simultaneously on a filer, which has more than one IP address reachable from the host. It is due to a race condition in the algorithm for finding a reachable filer IP address. This problem occurs when different reachable IP addresses are found by the algorithm implementation for different virtual disks participating in a snapshot. Workaround: Use the PreferredFilerIPAddresses registry setting to specify just one IP address for the filer (this should be an IP address reachable from the host). Also, in order to recover from the inconsistent state after encountering this condition, restart the SnapDrive service. The easiest way to specify PreferredFilerIPAddresses is to copy the following text to a file with .reg extension and import the .reg file using regedit: Windows Registry Editor Version 5.00 <pre>[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\SWSvc\Parameters\PreferredFilerIPAddresses]</pre> <pre>"FilerName1"="192.168.1.1"</pre> After adding this key to the registry, modify the filer name and IP address to the appropriate values using regedit. Note: To check if the IP address is reachable from the host, issue the ping command from the 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.

Bug ID	Description and workaround
146756	If you established the SnapMirror relationship using filer names, and you try to use a filer IP address in UNC path for disk create or connect operations on the live SnapMirror destination volume, SnapDrive might not determine this volume status and can error out. Workaround: Instead of using IP address, provide the filer name in the UNC path for the disk create/connect operations.
160012	SnapDrive does not recognize if the same volume has two SnapMirror statuses - broken-off destination and snapmirror source. In this case, SnapDrive does not maintain the internal flag on the LUNs and SnapDrive does not perform necessary single file snaprestore operation during LUN connection. LUN mappings from another filer are still present and can generate an error. Workaround: There are two workarounds. One is if you try to establish a new SnapMirror relationship from a broken SnapMirror destination. In this case, completely remove the old SnapMirror configuration information for this particular volume. Since FilerView does not completely reflect SnapMirror relationships, verify that this SnapMirror relationship is not listed using the filer console <code>snapmirror status</code> command. After you remove the old SnapMirror configuration information, use SnapDrive to initiate the SnapMirror update. The second workaround is to perform manual LUN un-mapping using FilerView or filer console after SnapDrive has not connected to the LUN. After you un-map the LUN, use SnapDrive to connect to the LUN. After LUN successfully connects, you might need to perform LUN restore from the latest consistent snapshot.
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 <code>Win32_SCSIController</code> 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
153839	Immediately after a path failure, doing a refresh from SnapDrive's Path Management menu will not generate the correct path status. Workaround : Wait for Plug and Play to detect the path removal. For Fibre Channel, this is determined by the Link Timeout (i.e. 30 secs.). For iSCSI, this is determined by LinkDown Timeout (i.e.30 secs).
153893	During installation, SnapDrive detects and warns about the unsupported Fibre Channel Protocol (FCP) adapters, drivers, and firmware combinations. NetApp recommends that you follow the support matrix as described in http://now.netapp.com/NOW/knowledge/docs/olio/guides/snapmanager_snapdrive_compatibility/snapdrive.shtml Workaround : If you are using FCP configurations that NetApp does not support to connect NetApp devices, use zoning to prevent the FCP initiators from logging on to NetApp filers.
154241/ 154918	The Microsoft Windows 2003 Service pack 1 (SP1) installer copies or overwrites HBAAPI.dll into the %WINDIR%\SYSTEM32 directory. The earlier HBAAPI.dll was provided by FCP HBA vendors. This new HBAAPI.dll installed by Microsoft Windows 2003 SP1 requires Fibre Channel Protocol (FCP) HBA drivers with specific Windows Management Instrumentation (WMI) interfaces. In case the FCP HBA drivers used in the system do not have these specific WMI interfaces, HBAAPI.dll will not be able to return some API calls. Workaround : Installation of SnapDrive 3.1.1R1 or later copies HBAAPI.dll in the SnapDrive installation directory; therefore, SnapDrive 3.1.1R1 works with older FCP HBA drivers. Install updated FCP HBA drivers that have the required WMI interfaces.

