

SnapDrive® 6.2.1 for Windows®

Release Notes

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Release notes

Topics covered

All the information in this document applies to SnapDrive 6.2.1 for Windows.

The following topics are covered in these release notes:

- ◆ [“Features of this release”](#) on page 2
- ◆ [“Limitations”](#) on page 3
- ◆ [“SnapDrive requirements”](#) on page 5
- ◆ [“Fixed issues”](#) on page 13
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- ◆ [“Documentation corrections”](#) on page 21

Features of this release

About this release

SnapDrive 6.2.1 includes bug fixes as well as support for the following major features introduced in SnapDrive 6.2 for Windows:

- ◆ Support for dynamic addition and removal of Hyper-V® pass-through disks using Windows Server 2008 R2
- ◆ Support for Microsoft® cluster shared volumes using Windows Server 2008 R2
- ◆ Support for restoring data at the file level
- ◆ Support for RBAC with Operations Manager
- ◆ Support for RDM LUNs using iSCSI hardware initiators and VMware® ESX iSCSI initiators
- ◆ Support for creating FC RDM LUNs across two virtual Microsoft cluster machines using Windows Server 2003 and Windows Server 2008 systems
- ◆ Support for IPv6 with ESX 4.0

Limitations

Limitations of SnapDrive 6.2.1

SnapDrive 6.2.1 software has the following limitations:

- ◆ iSCSI RDM LUNs are not supported across two physical Microsoft cluster machines.
- ◆ Customers using SnapDrive 5.0 and earlier on Windows Server 2003 IA64 systems must upgrade to Windows Server 2008 on IA64 systems before they can use SnapDrive 6.2.1.
- ◆ 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 in FilerView® or at the storage system command line can be managed only if certain steps (documented in the *Installation and Administration Guide*) are taken to prepare these disks for SnapDrive.
- ◆ Conversion of a LUN with an MBR partition to a LUN with 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).

Considerations when using Microsoft iSCSI Software Initiator

When using Microsoft iSCSI Software Initiator, consider the following:

- ◆ In a Microsoft Cluster Service configuration (MSCS) that uses volume mountpoints, install Microsoft hotfix 925677 on all cluster nodes if you encounter the issue described in Knowledge Base article KB925677.
- ◆ In a noncluster configuration, the Exchange service and the SQL service must be configured with a dependency on the iSCSI Software Initiator service.

**Considerations
when using
Windows Server
2008 Failover
Clustering**

For implementing a Windows Server 2008 Failover Clustering solution, Microsoft recommends that only hardware that has been validated as part of the Windows Server 2008 Failover Cluster Configuration Program be used. See the Microsoft Web site for further details.

SnapDrive requirements

System requirements

The following table shows the minimum system requirements for SnapDrive 6.2.1 for Windows.

Component	Requirement
Operating system on the storage system	◆ Data ONTAP® 7.2.6 or later ◆ Data ONTAP 7.3 or later ◆ Data ONTAP 8.0 7-mode or later IPv6 support with Windows Server 2008 requires Data ONTAP 7.3.1 or later. Note _____ IPv6 is not supported on Windows Server 2003. _____ Integration with Protection Manager to enable SnapManager for Exchange to use datasets with SnapVault backup and restore requires Data ONTAP 7.3 or later. Support for SnapVault backup of existing SnapVault configurations requires Data ONTAP 7.2.6 or later. Support for SnapVault with MultiStore® requires Data ONTAP 7.3 or later. Support for GPT partitioning on new LUNs created by SnapDrive requires Data ONTAP 7.2.6 or later. Note _____ For the most current list of supported Data ONTAP software versions, see the NetApp Interoperability page at http://now.corp.netapp.com/NOW/products/interoperability/. _____

Component	Requirement
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 2.6 or later before upgrading to SnapDrive 6.2.1 for Windows on 32-bit systems. Note _____ NetApp Host Agent 2.6 does not support a 64-bit Windows operating system on a SAN host. Note _____ NetApp Host Agent 2.6 does not support IPv6. For more information, see the SnapDrive 6.2.1 for Windows Description page on the NOW site at http://now.netapp.com/NOW/cgi-bin/software/.
DataFabric Manager server	DataFabric Manager 3.7 or later, if you are using DataFabric Manager server to provide role-based access control (RBAC) with SnapDrive, Note _____ For information about using RBAC with SnapDrive for Windows, see the <i>SnapDrive 6.2 for Windows Installation and Administration Guide</i> and the <i>Storage Access Control Tool User's Guide</i> on the NOW site.

Component	Requirement
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 2.6 or later before upgrading to SnapDrive 6.2.1 for Windows on 32-bit systems. Note_____ NetApp Host Agent 2.6 does not support a 64-bit Windows operating system on a SAN host. Note_____ NetApp Host Agent 2.6 does not support IPv6. For more information, see the SnapDrive 6.2.1 for Windows Description page on the NOW site at http://now.netapp.com/NOW/cgi-bin/software/.
DataFabric Manager server	DataFabric Manager 3.7 or later, if you are using DataFabric Manager server to provide role-based access control (RBAC) with SnapDrive, Note_____ For information about using RBAC with SnapDrive for Windows, see the <i>SnapDrive 6.2 for Windows Installation and Administration Guide</i> and the <i>Storage Access Control Tool User's Guide</i> on the NOW site.

Component	Requirement
Hardware on the Windows host machine	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 HBAs 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 <i>SnapDrive 6.2 for Windows Installation and Administration Guide</i>, available on the NOW site. 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: ❖ See the FC Host Utilities (Attach Kits) for Windows on the NOW site at http://now.netapp.com/NOW/cgi-bin/software/ for the latest supported FC HBAs and drivers. From this gateway, navigate to the FC Host Utilities (Attach Kits) for Windows Download Software page. ❖ Microsoft iSCSI Software 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 Utilities item, select the appropriate platform, and then click Go. ❖ See the iSCSI Host Utilities for Windows on the Download Software page for the latest supported iSCSI HBA and drivers.
MPIO	Data ONTAP DSM 3.3.1 for Windows MPIO See the Data ONTAP DSM for Windows MPIO Description page on the Download Software page for any installation requirements.

Component	Requirement
Operating system on the Windows host machine	Windows Server 2003 SP2: ◆ Standard or Enterprise Edition ◆ Platforms: x86, x64 Note_____ .NET framework 3.5 SP1 or later is required for Windows Server 2003 before installing SnapDrive. _____ Note_____ Customers using SnapDrive 5.0 and earlier on Windows Server 2003 IA64 systems must upgrade to Windows Server 2008 on IA64 systems before they can use SnapDrive 6.2.1 for Windows. _____ Windows Server 2008: ◆ Standard or Enterprise Edition ◆ Platforms: x86, x64, IA64

Component	Requirement
Microsoft Windows hotfixes	Before you can install SnapDrive 6.2.1 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 ◆ None at this time

VMware ESX guest OS requirements

The following table shows the minimum requirements for running SnapDrive 6.2.1 for Windows in the VMware ESX guest OS.

Component	Requirement
Operating system on the ESX server	◆ ESX/ESXi 3.5 Update 4 or later ◆ ESX/ESXi 4.0 or later
Windows guest OS	◆ Windows Server 2003 SP2 (x86 or x64) with the hotfixes specified in the SnapDrive host requirements ◆ .NET Framework 3.5 SP1 or later
FC HBA	FC ESX Host Utilities 5.1 For the most current list of supported host utilities and HBAs, see the NetApp Interoperability page at http://now.corp.netapp.com/NOW/products/interoperability/.
iSCSI Initiator	See the iSCSI Host Support Kit for Windows on the Download Software page for the latest supported version of Microsoft iSCSI Software Initiator.

Component	Requirement
Storport Miniport driver LSI Logic SCSI Controller	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. If you are using RDM LUNs, the LSI Logic SCSI controller must be updated with the Storport Miniport driver for proper SnapDrive operations. 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. You can download the x86 or x64 version of this driver from http://www.lsi.com by searching for “LSI Logic Fusion-MPT SCSI Driver (Storport)” or by clicking the following links: ◆ For the x86 driver, go to http://www.lsi.com/files/support/ssp/whql%20drivers/22320/win2003/LSI22320-R_w2000_w2003_IM_WHQL_MID1129844.ZIP ◆ For the x64 driver, go to http://www.lsi.com/files/support/ssp/whql/LSI22320-R_wXPx64_IT_WHQL_MID1056284.ZIP Windows Server 2008 includes the Storport Miniport driver and does not need to be updated. For more information, see the VMware Knowledge Base article 1006224 at http://kb.vmware.com. Note _____ Links to the LSI Logic drivers are not maintained by NetApp. Contact LSI Logic if you are unable to use these links.
VMware Tools	VMware Tools must be installed before beginning the SnapDrive installation in the guest OS.
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 required to retain each SCSI controller, leaving 56 LUNs available for SnapDrive provisioning.

Fixed issues

The following bugs are fixed in SnapDrive 6.2.1 for Windows.

Bug ID 393518: SnapDrive 6.2 fails to create RDM LUNs with ESX iSCSI when FCP license is not set on the filer.

For more information, go to Bug Tools on the NOW site at <http://now.netapp.com> and search for bug ID 393518.

Bug ID 395057: SMHV does not work on Japanese Windows OS

Bug ID 397424: SDW: LUN restore fails
IOCTL_DISK_SET_DRIVE_LAYOUT_EX on reversed SnapMirror destination

Bug ID 397462: Windows 2008R2 120s Volume Arrival Timeout when connecting to LUN Clone on the same host

Bug ID 397866 : Snapshot mounts are very slow.

Bug ID 408511: ESX iSCSI RDM igroup has initiators from other hosts. SnapDrive does not support this configuration.

Bug ID 424071: SDW Workaround: SME remote verify fails on SnapMirror destination with SDW ZAPI snap-list-info response volume offline

Bug ID 426196: SnapDrive for Windows creates multiple FlexClone volumes for LUNs on same Snapshot copy

Bug ID 440822: The SnapDrive service in an ESX VM takes too long to start up in large ESX environments

Known issues

This section describes issues known to exist in SnapDrive 6.2.1.

SnapDrive 6.2 for Windows does not enumerate FC initiators on Windows 2003 Guest OS when using ESX 4.1

Description: After upgrading ESX from 4.0.x to 4.1, SnapDrive 6.2 for Windows does not enumerate FC initiators in Windows Server 2003 virtual machines, making you unable to connect to an RDM device.

Corrective action: You can enable FC initiators for this configuration in one of three ways:

Note

You must restart the SnapDrive service regardless of which of the actions you use to enable FC initiators.

- ◆ Disable the IDE channel using Windows Device Manager.
- ◆ From vCenter, add a new CD-ROM drive on the free IDE channel for the virtual machine.

- ◆ In the Windows Server 2003 registry, locate
HKEY_LOCAL_MACHINE\HARDWARE\DEVICEMAP\Scsi.

For example, you might see entries similar to the following:

SCSI Port 0

SCSI Port 1

SCSI Port 2

The SCSI port entries must contain subdirectories and subkeys: for example, “SCSI bus 0” contains “Initiator ID” and “Target ID”.

If the SCSI port entries contain no subdirectories, you can delete them by completing the following steps:

1. Create a backup copy of the registry by exporting it to your hard disk.
2. Delete the entries.

Attention

This workaround is not persistent across virtual machine reboots. Registry keys are regenerated when the virtual machine is rebooted.

For more information, go to Bug Tools on the NOW site at <http://now.netapp.com> and search for bug ID 447078.

Fresh SnapDrive installations on IA64 systems do not request SnapDrive license

Description: During fresh installations of SnapDrive 6.2.1 for Windows on IA64 systems, the SnapDrive installation wizard does not display the SnapDrive License window, which enables you to enter your SnapDrive license information during the installation procedure.

Corrective action: You can enter the SnapDrive license information using the `sdcli.exe` command, or using the SnapDrive MMC. If you enter host-side license information, you must restart the SnapDrive service (`SWSvc.exe`) before the license takes effect.

LUN create or disconnect operations taking longer than 10 minutes gives inconsistent cluster state error

Description: LUN create or connect operations taking longer than 10 minutes on a Windows Server 2008 R2 host with SnapDrive for Windows results in the error “Your cluster seems to be in an inconsistent state. Please check if any resource is in online pending state.”

Corrective action: To increase the resource online timeout value in the Windows registry, add a DWORD value named `ResourceOnlineTimeout` in `HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\WSvc\Parameters`, and set a resource timeout value greater than the default value of 600 seconds. For example, change the value to 900 seconds (15 minutes).

Cluster resources created on SnapDrive whose names end with a backslash (\) cannot be deployed on a virtual machine using VMM 2008

Description: Deploying a virtual machine using System Center Virtual Machine Manager 2008 (VMM 2008) to a shared LUN created with SnapDrive for Windows fails with the error “Error (2927) A Hardware Management error has occurred trying to contact server host11.CWF.ORG.”

This issue is caused by a limitation in the VMM 2008 environment in which the backslash (\) at the end of the resource name is not recognized. The problem has been fixed in VMM 2008 R2.

Corrective action: To enable SnapDrive to create cluster resource names that do not end with a backslash, in the Windows registry, add a DWORD value named `ResourceNameNewformat` in `HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\WSvc\Parameters`, and set the value to **1**.

Connecting a LUN on a Microsoft cluster causes an error

Description: Connecting a LUN on a Microsoft cluster fails with the error “The LUN has SCSI reservation but has not been mapped.”

This is caused by a bug in Microsoft failover clusters and in Data ONTAP software.

Corrective action: You can resolve this problem in one of three ways:

- ◆ Clear the SCSI reservation on your storage system by entering the following command:

```
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.

ALUA support with Microsoft DSM

Description: Asymmetric logical unit access (ALUA) must be enabled when you use Microsoft native DSM over Fibre Channel data paths with Data ONTAP 7.3.0 or later. SnapDrive 6.1 and earlier versions do not set ALUA attributes for any data paths. SnapDrive 6.2.1 for Windows has limited capabilities for enabling ALUA automatically.

- ◆ ALUA attributes are set on FC paths in standard use cases.
- ◆ ALUA is enabled when the installed version of Data ONTAP is later than 7.3.0 and when the Data ONTAP DSM is not installed.

SnapDrive 6.2.1 does not enable ALUA in the following situations:

- ◆ On FC paths if Data ONTAP DSM is installed.
- ◆ On FC paths if Microsoft DSM and Data ONTAP DSM are both installed.
- ◆ On iSCSI paths with all versions of Data ONTAP.

Note

Do not enable ALUA on iSCSI data paths. ALUA is currently not supported over iSCSI on all versions of Data ONTAP software. Enabling ALUA over iSCSI results in disk arrival issues during LUN connection and Snapshot copy operations.

If SnapDrive 6.2.1 is installed with Microsoft DSM, ALUA is enabled on FC igroups connected to that host only when LUN creation and connection operations are initiated on that path. Also, ALUA is not enabled on existing FC connections until a fresh connection takes place or when the server is rebooted.

Corrective action: If you migrate from Microsoft DSM to Data ONTAP DSM, SnapDrive 6.2.1 does not disable ALUA attributes on existing data paths, but it does ensure that subsequent operations on those paths do not set ALUA attributes. Data ONTAP DSM 3.3.1 and earlier versions do not support ALUA. You must reset the ALUA attribute manually from the Data ONTAP console by entering the following command:

```
igroup set igroup_name alua no
```

After you reset the igroup attributes, refresh the paths either by reconnecting them or by rebooting the server. This ensures that ALUA is disabled on all paths.

If you have not installed Microsoft DSM, or if it has always existed with Data ONTAP DSM, upgrading to SnapDrive 6.2.1 sets ALUA attributes to Off. Manually disabling ALUA is required only when you migrate from Microsoft DSM to Data ONTAP DSM 3.3.1.

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

Message: "File Level Restore failed with error code 0x80070003"

Description: When using a Windows Server 2008 R2 host, most operations that try to import (mount) a Snapshot copy LUN onto the host fail. 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 following scenarios can occur due to the Snapshot copy LUN limitation when using a system reserved partition:

- ◆ File-level restoration for files in the boot LUN fail with an error stating that source files are not found.

- ◆ Generic Snapshot copy mount operations for copying files or file verification by third-party tools fail.
- ◆ VSS Snapshot copy of scenarios that require Snapshot copy mount, such as “non-transportable” shadow copy (persistent but not transportable) and “volatile” shadow copies, fail.

These scenario types are used by applications such as NetBackup and IBM TSM.

Corrective action: The problem only occurs if the system reserved partition is on the boot volume when the Snapshot copy is created. You can avoid this problem in one of three ways, depending on your situation:

- ◆ During Windows installation, choose the option not to create the recovery partition.
- ◆ Delete the recovery partition later, if possible.
- ◆ 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.

For more information or to check for updates, go to Bug Tools on the NOW site at <http://now.netapp.com> and search for bug ID 377102.

A FlexClone volume is taken offline when mounting a FlexClone LUN due to lack of space

Description: Mounting a Snapshot copy using a FlexClone volume might fail when many Snapshot copies exist in the volume and available space is approximately 20 percent of the total available space. The Snapshot copy LUN is taken offline without notification and without errors after the connection is completed. If file-level restoration or another data verification operation is in progress when the LUN is taken offline, the operation fails with an error indicating that the LUN cannot be read.

Corrective action: SnapDrive can check available space while mounting a Snapshot copy volume. FlexClone volume space check is disabled by default because it can impact performance. You must enable this feature on volumes that are 80 percent full and contain large numbers of Snapshot copies. Enabling the space-checking feature ensures that file-based restorations do not fail and do not leave files in an unusable state.

To enable the space verification feature in SnapDrive, perform the following steps:

1. Create a DWORD entry called `FlexCloneSpaceCheck` in the Windows registry

HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Service
s\SWSvc\Parameters with the value equal to 1.

2. Restart the SnapDrive service.

For more information, go to Bug Tools on the NOW site at <http://now.netapp.com> and search for bug ID 380009.

Requesting 16 TB as the size for a non-space-reserved LUN causes an error

Message: "Requested LUN size is too large"

Description: Using Data ONTAP 7.3.1, the `lun create -o nonreserve -s 16t` command fails. 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.

Corrective action: Creating a non-space-reserved LUN with a size of 16349 GB succeeds and creates the same maximum LUN size that you created using Data ONTAP 7.3.

Changing the Regional and Language options can result in error message

Message: "Input string was not in a correct format"

Description: If the Regional and Language options are changed from the default of English (US), the thousands separator might change to a character other than a period (.). This change can result in SnapDrive 6.x displaying the an error message during LUN enumeration.

Corrective action: To avoid this issue, 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.

Slow RDM LUN I/O in VMware

Description: Because the VMware multipathing layer cannot differentiate between a local and a proxy path, RDM LUNs connected using SnapDrive might send I/O to the proxy path. In this case, SnapDrive logs a warning in the application event log, alerting you that the RDM LUN I/O is going through the non-optimized path.

Corrective action: NetApp provides a script in the ESX Host Utilities (EHU) that corrects this behavior. The VMware administrator must run the “config_mpath” script after each provisioning activity or every LUN connect operation to optimize the active path configuration.

HTTP and HTTPS slow when using domain account

Description: If you set up SnapDrive to use HTTP or HTTPS to communicate with storage systems, using the domain Administrator account for authentication results in significantly reduced performance.

Corrective action: Use a storage system account for authentication instead of the domain account.

Documentation corrections

Additions to the Installation and Administration Guide

Adding the required storage system capabilities for SnapDrive HTTP users: Add the following information to the section about HTTP and HTTPS transport protocol support on page 32 of the *Installation and Administration Guide*.

If you are not an administrator on the storage system, you must ensure that you have the appropriate capabilities assigned to you by the storage system administrator before you can use the HTTP transport protocol for storage system communication.

1. Create a local group on the storage system to which you want to enable HTTP communication with SnapDrive.
2. Associate the new group with a role containing all of the following capabilities:
 - ◆ api
 - ◆ login
3. Add the SnapDrive user to the new storage system group.

Minimum vCenter permissions required by SnapDrive for Windows:

Add the following information to the section about VMware support on page 33 of the *Installation and Administration Guide*.

When you create a user and assign the following permissions at the vCenter server level, those permissions are also inherited at the ESX server level. SnapDrive is then be installed with the vCenter credentials of that new user and SnapDrive operations are allowed.

The vCenter credentials used by SnapDrive for Windows must have the following minimum permissions:

- ◆ Host
 - ❖ Configuration > Storage Partition Configuration
This setting is used for backup mount and VMFS mount and restore operations.
- ◆ Virtual machine
 - ❖ Configuration > Raw Device
 - ❖ Configuration > Change Resource

If SnapDrive is installed with vCenter credentials, you must ensure the following requirements:

- ◆ The user must be a vCenter server user.
- ◆ The roles with required minimum privileges must be assigned to the user at the vCenter server level.

If SnapDrive is installed with ESX credentials, you must ensure the following requirements:

- ◆ The user must be an ESX server user.
- ◆ The roles with required minimum privileges must be assigned to the user at the ESX server level.

SnapDrive support in Windows Server 2008 and Windows Server

2008 R2 Server Core: The *Installation and Administration Guide* has the following changes.

- ◆ The section titled “SnapDrive support in Windows Server 2008 Server Core” on page 24 should be changed to include support for Windows Server 2008 R2 Server Core.
- ◆ The list of Server Core limitations on page 25 should be changed as follows:
 - ❖ .NET is not supported in Windows Server 2008 Server Core; however, .NET is supported in Windows Server 2008 R2 Server Core.
Installation of .NET is not required by SnapDrive on Windows Server 2008 Server Core. Installation of .NET is required on Windows Server 2008 R2 Server Core.

VMware support: The second bullet in the list of SnapDrive supported VMware guest OS configurations on page 33 of the *Installation and Administration Guide* should be changed as follows:

- ◆ Microsoft cluster configurations up to a maximum of 8 nodes supported on VMware when using the Microsoft iSCSI Software Initiator, or up to 2 nodes using FC.

SnapDrive command line installation switches for Windows Server

2008 Server Core: Add the following note to the `SERVER_CORE_SYSTEM` switch description in the “SnapDrive command line switches” section on page 163 and to the “SnapDrive unattended installation examples” section on page 167 of the *Installation and Administration Guide*.

Note

You should use the `SERVER_CORE_SYSTEM` switch with only Windows Server 2008 Core Server. You should not use the `SERVER_CORE_SYSTEM` switch with Windows Server 2008 R2 Core Server.
