

NetApp® Virtual Storage Console 1.0 for VMware vSphere **Release Notes**

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NetApp Virtual Storage Console 1.0 for VMware vSphere Release Notes

These release notes describe new features, enhancements, and known issues for Virtual Storage Console 1.0.

These release notes apply to Virtual Storage Console 1.0. Release Notes might be updated between product releases. You should periodically check online for updated Release Notes.

Release notes are available in .html and .pdf formats. They are optimized for .html viewing and linking.

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Virtual Storage Console 1.0 Overview

The Virtual Storage Console (VSC) software enables you to manage ESX and ESXi servers connected to NetApp storage systems. VSC is a plugin to the VMware vCenter Server.

VSC manages storage connected by SAN and NAS protocols. It automatically detects if the recommended storage adapter, MPIO, and NFS settings are configured on ESX hosts, and enables you to update settings on one or more hosts with a simple graphical user interface.

VSC takes advantage of features and interfaces in recent versions of ESX and Data ONTAP software. If your environment has earlier versions of ESX or Data ONTAP, use ESX Host Utilities instead of VSC. See the Interoperability Matrix for supported versions.

Virtual Storage Console 1.0 supported configurations

NetApp Virtual Storage Console 1.0 for VMware vSphere is supported on specific releases of ESX and Data ONTAP software.

Windows software

VSC installs on a computer running one of the following versions of Microsoft Windows software:

- Windows Server 2008 and later

- Windows Server 2003 SP1 and later
- Windows XP Professional SP2 and later (32-bit only)

vCenter Server

VSC requires vCenter Server version 4.0.

ESX host software

The following versions of ESX software are fully or partially supported with VSC.

ESX 4.0 All VSC functions and displays are supported.

ESX 3.5 VSC displays most storage information about ESX 3.5 hosts, but cannot set any of the host adapter, MPIO, or NFS settings. The data collection programs run successfully.

Note: Use ESX Host Utilities 5.1 to set host adapter, MPIO, and NFS settings for ESX 3.5 hosts.

Data ONTAP software

The following versions of Data ONTAP software are fully or partially supported with VSC.

7.3.1.1 and later Supports all SAN and NAS functions and displays.

7.2.4 to 7.3.0 Supports the NAS functions. SAN storage controllers are discovered, but no LUN information is displayed. Storage controllers are marked with the "unmanaged" status.

Adapter models and firmware

VSC supports the same storage adapter models and firmware as are supported by ESX Host Utilities 5.1. See the Interoperability Matrix for details.

Related information

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

Supported ALUA configurations for ESX hosts

ALUA (asymmetric logical unit access) is supported for certain combinations of ESX, Data ONTAP, and guest operating system configurations.

You should enable ALUA when you have a supported configuration. ALUA is enabled on the igroup mapped to NetApp LUNs used by the ESX host. Currently, the default setting in Data ONTAP software for ALUA is disabled.

ALUA is enabled on the igroup mapped to LUNs used by ESX hosts. You use the following Data ONTAP command to enable ALUA:

igroup set *igroup_name* alua yes

See the *Data ONTAP Block Access Management Guide for iSCSI and FC* for your version of Data ONTAP for more information about enabling ALUA.

ALUA requires ESX 4.0 or later.

ALUA requires Data ONTAP 7.3.1 or later. The single_image cfmode setting is required for Fibre Channel.

ALUA is *NOT* supported with guest operating systems in a Microsoft cluster configuration. This includes both MSCS on Windows Server 2003 and Windows failover clusters on Windows Server 2008 guests.

New features in this Virtual Storage Console release

Virtual Storage Console 1.0 is the first release.

VSC 1.0 includes:

- Support for ESX 4.0 and ESXi 4.0 hosts.
- Support for SAN storage.
- Support for NAS storage.
- A graphical user interface integrated into the VMware vSphere client.
- Diagnostic tools to collect data from storage controllers, ESX and ESXi hosts, and Fibre Channel switches.
- Tools to check and fix VMDK partition alignment.
- Tools to set timeout values on guest operating systems.

Updates to the release notes

The release notes might be updated between product releases. This section lists any updates since the original release.

No updates

There are currently no updates for this section.

Important Cautions

Before deploying this release of Virtual Storage Console, make sure that you read the following items to identify and resolve issues that might affect the operation of your systems.

To request more information about an individual bug and to explore other bug-related tools, see Bugs Online on the NOW site.

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Always reboot ESX host after setting recommended values

When you set recommended ESX host values using VSC, the ESX host status displayed on the VSC **Overview** panel should change to **Pending Reboot**. However, the status might get set to **Normal** even though you have not yet rebooted the host.

The new settings do not take effect until the ESX host is rebooted.

Always reboot the ESX host after running **Set Recommended Values** even if the status shows **Normal**.

Storage Details - SAN panel has no details

The **Storage Details - SAN** panel on the NetApp tab of VSC displays no details. The status of one or more storage controllers on the **Overview** panel is "Unmanaged."

The storage controller must be running a minimum version of Data ONTAP software that supports interfaces needed by the SAN functionality of VSC. Earlier versions of Data ONTAP software do not have these interfaces, and VSC cannot discover SAN resources. However, the controller itself is discovered by VSC.

If all controllers are unmanaged (not running the minimum Data ONTAP version), then the **Storage Details - SAN** panel displays nothing. If only some controllers are unmanaged, when you select an unmanaged controller, no details are displayed.

The NAS functionality of VSC can work with earlier versions of VSC. It is possible for NAS details to be displayed when SAN details cannot be displayed.

Check the interoperability matrix for the supported versions of Data ONTAP software. At the time these Release Notes were published, Data ONTAP 7.3.1.1 or later was required for SAN functionality.

Related information

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

ESX 3.5 hosts are listed, but settings are not modified

The VSC lists ESX 3.5 hosts and displays storage details for their mapped LUNs and NFS datastores. However, VSC cannot modify any settings for ESX 3.5 hosts.

If you try modify the settings for an ESX 3.5 host, VSC displays the following error message. You have selected one or more hosts that VSC is unable to set the recommended values for. Please see the Installation and Administration Guide for more information.

This message is also displayed if you select and try to modify multiple hosts and one or more of the selected hosts is running a version of ESX earlier than 4.0.

Storage configuration updates not displayed by VSC

When you add or remove storage resources, such as LUNs or NFS exports, the changes are not immediately displayed by VSC on the NetApp tab in the vSphere client.

VSC gets its configuration information from the vCenter Server. You must first rescan the storage adapters for the ESX host to discover changes. Then select **Update** on the NetApp tab to have VSC discover the new resources.

Security certificate warnings displayed

Depending on your web browser and security configuration, you might see security certificate warnings displayed when installing and using VSC.

VSC uses self-signed SSL certificates. You might see warnings similar to the following:

The security certificate presented by this website was not issued by a trusted certificate authority.

You can safely ignore these warnings and proceed to the requested program or web page.

All resources shown regardless of inventory panel selection

The NetApp tab lists all ESX hosts and storage controllers regardless of which resource is selected in the vSphere Client inventory panel.

Selecting a particular Datacenter or host in the inventory panel does not filter which resources are displayed by VSC.

Note that the NetApp tab is not displayed when a virtual machine is selected in the inventory panel.

Windows cluster disk reservation lost after faults in ALUA configuration

A Windows cluster (Windows Server 2003 MSCS or Windows Server 2008 failover cluster) running as guests on ESX 4.0 reports disk reservations lost. The cluster service is unavailable and delayed write errors might be reported. The LUNs used by the cluster have ALUA enabled.

This problem can occur with all ESX path selection policies.

When using ESX guest operating systems in a Windows cluster configuration, disable ALUA on the LUNs and use the FIXED path selection policy.

For the latest updates to this problem, see bug 369866 at Bugs Online.

Related information

[Bugs Online & Release Tools - now.netapp.com/NOW/cgi-bin/bol](http://now.netapp.com/NOW/cgi-bin/bol)

Windows guests might crash during storage faults because of virtual memory use

Windows guest operating systems on ESX 3.5 and ESX 4.0 servers might crash during a storage fault due to a kernel in page stack error because the virtual memory on a SAN disk is temporarily unavailable.

The Windows event log might contain errors similar to the following:

Event ID: 51 Event Type: Warning Event Source: Disk Description: An error was detected on device \Device\Harddisk0\DR0 during a paging operation. Event ID: 9 Source: %HBA_DRIVER_NAME% Description: The device, \Device\ScsiPort0, did not respond within the timeout period.

Possible workarounds include:

- Allocating sufficient physical memory to the guests.
- Placing the pagefile on local disk.
- Minimizing the virtual memory size on the Windows guests where possible to minimize its usage.

Note that having the pagefile on local disk does not allow vMotion of the guest to work properly, because vMotion requires a shared disk.

For the latest updates to this problem, see bug 365387 at Bugs Online.

Related information

[Bugs Online & Release Tools - now.netapp.com/NOW/cgi-bin/bol](http://now.netapp.com/NOW/cgi-bin/bol)

Host side cable pull causes SAN-booted ESX server with VIFs and VLANs to fail

NetApp does not currently recommend enabling both VIFs and VLANs when using an iSCSI HBA in an HA environment.

There are timeout-related issues with VIFs and VLANs in a HA environment with iSCSI HBAs. It is, however, safe to enable VLANs in an HA environment.

For more information, see bug ID 240819 at Bugs Online.

Related information

[Bugs Online & Release Tools - now.netapp.com/NOW/cgi-bin/bol](http://now.netapp.com/NOW/cgi-bin/bol)

Avoid VMotion migrations during controller giveback

If you attempt a VMotion migration during a storage system controller giveback operation, the migration may unexpectedly halt.

The Virtual Machine may power off during the migration if it is more than 50% complete.

Therefore, ensure you complete any existing VMotion migrations before attempting a controller giveback.

For more information, see bug ID 210972 at Bugs Online.

Related information

[Bugs Online & Release Tools - now.netapp.com/NOW/cgi-bin/bol](http://now.netapp.com/NOW/cgi-bin/bol)

Avoid heavy I/O load during storage VMotion migrations

A storage VMotion migration might not complete successfully if the virtual machines being migrated have a heavy I/O load.

This problem has been observed with ESX 3.5 Updates 2, 3, and 4.

The old virtual disk from the former datastore is not always automatically deleted properly, therefore the console reports that the migration failed. The virtual disk is copied successfully.

To ensure a storage VMotion completes successfully, maintain the lightest I/O load possible.

For updates to this problem, see bug ID 315260 at Bugs Online.

Related information

[Bugs Online & Release Tools - now.netapp.com/NOW/cgi-bin/bol](http://now.netapp.com/NOW/cgi-bin/bol)

NIC teaming causes ESX Server to reboot when creating a VM

When NIC teaming is enabled on the ESX Server, the ESX server might unexpectedly reboot while trying creating a Virtual Machine.

Make sure you disable NIC teaming until you are finished creating Virtual Machines.

For more information, see bug ID 207474 at Bugs Online.

Related information

[Bugs Online & Release Tools - now.netapp.com/NOW/cgi-bin/bol](http://now.netapp.com/NOW/cgi-bin/bol)

Known problems and limitations

Some unexpected and potentially undesired behaviors, as well as, in some cases, workarounds to avoid these behaviors, have been identified in this release.

To request more information about an individual bug and to explore other bug-related tools, see Bugs Online on the NOW site.

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Configuring host settings does not complete while storage controller taken over

If you try to configure the recommended ESX host settings (Adapter Settings, MPIO Settings, or NFS Settings) using VSC while a storage controller used by the host is taken over by its partner, the action does not complete until after the storage controller giveback completes.

Do not attempt to configure host settings during controller takeover. If you do, the action completes after controller giveback.

VSC Set Recommended Values fails to set a value and status is still Alert

After running **Set Recommended Values** for one or more ESX hosts on the VSC **Overview** panel, some settings might still show the **Alert** status icon. The recommended values are not set for those items marked with the **Alert** icon.

Because of timing issues, some recommended values might fail to be set on ESX hosts on the first try. The **Alert** status icon is displayed for any missed settings.

The workaround is to run **Set Recommended Values** again for the affected ESX hosts before rebooting them.

Note: The host settings do not take effect until the ESX host is rebooted.

Error using VSC Data Collection for ESX host

When you use the VSC Data Collection panel to collect diagnostic information for an ESX host, you might receive a Java error message.

The requested ESX host data is not collected.

The workaround is to export and save the log data manually using the vSphere Client. You can then send the collected data to Technical Support for analysis.

Follow the instructions in the section "Obtaining Diagnostic Information for ESX 4 hosts using the vSphere Client" in the VMware Knowledge Base article 653. Select the option to include information from VMware Virtual Center.

Related information

[VMware Knowledge Base article 653 - kb.vmware.com/kb/653](https://kb.vmware.com/kb/653)

Controllers not removed from VSC Overview panel

Storage controllers with the "Unmanaged" status are not removed from the VSC Overview panel when all hosts using that storage controller are no longer managed by VSC.

Storage controllers running Data ONTAP software version 7.3.0 and earlier are marked with the "Unmanaged" status. Once discovered, VSC displays these controllers on the Overview panel, even if they no longer provide any LUNs or NFS mounts to any ESX host managed by VSC.

The simple workaround is to ignore the storage controllers you no longer need to manage. There is no harm in leaving them in the controllers list.

If you want to remove an unused controller with the "Unmanaged" status, you can run the **Repair** option of the VSC installation program. Repairing the installation deletes all stored configuration information.

Note: If you choose to repair the installation, you will have to go through the complete discovery process again, and re-enter all of the credentials for the currently-used storage controllers.

ALUA requires Data ONTAP 7.3.1 or later

NetApp only supports ALUA with ESX 4.0 with Data ONTAP software 7.3.1 or later.

Enabling ALUA support on igroups used by ESX 4.0 hosts is recommend when you have a supported version of Data ONTAP software. Do not enable ALUA with earlier versions of Data ONTAP or with ESX 3.5 hosts.

Please refer to the latest version of these *Release Notes* for the most up-to-date ALUA support information.

All paths might not return when a hardware iSCSI cable is reinserted on the ESX host

When using an iSCSI HBA and one of the HBA cables is removed, failover from the active path to a secondary path completes successfully. However, after the cable is reinserted, some of the paths might remain in the DEAD state.

If some paths remain in the DEAD state, the ESX host no longer has redundant paths to the storage system.

This issue has been observed on ESX Server 3.5.

For more information and for the workaround, see KnowledgeBase article 43488.

Related information

[KnowledgeBase article 43488 - now.netapp.com/Knowledgebase/solutionarea.asp?id=kb43488](http://now.netapp.com/Knowledgebase/solutionarea.asp?id=kb43488)

ESX hosts with VLAN IDs cannot recognize other members of a tagged VLAN

If you create a tagged VLAN consisting of storage systems and ESX hosts with VLAN IDs, the hosts are unable to ping other members of the VLAN.

If the hosts are not tagged, then all members of the VLAN can recognize all other members.

Windows 2008 guest I/O failure during storage faults

A Windows 2008 guest on ESX 3.5 might have I/O failures during storage faults because storage commands that receive a Task Set Full status are immediately retried without delay.

The workaround is to enable the LUN queue depth adaptive throttle to limit the number of commands sent to the LUN when it experiences a Task Set Full condition.

The LUN queue depth adaptive throttle is available in ESX 3.5 update 4 and later.

You can configure the throttle using the appropriate GUI client for your version of ESX. Open the **Configuration** tab for the ESX host and select **Software ► Advanced Settings**. In the **Disk** settings, set the following values:

- Disk.QFullSampleSize 32
- Disk.QFullThreshold 8

If you use the throttle for one host, be sure to use it for all hosts in the environment. This prevents I/O from hosts without throttle enabled from getting all of the storage I/O.

For more information about the LUN queue depth adaptive throttle, see VMware knowledge base article 1010922 *Controlling LUN queue depth throttling in VMware ESX 3.5 Update 4*.

For the latest updates to this problem, see bug 333904 at Bugs Online.

Related information

[VMware knowledge base article 1010922 - kb.vmware.com/kb/1010922](http://kb.vmware.com/kb/1010922)

[Bugs Online & Release Tools - now.netapp.com/NOW/cgi-bin/bol](http://now.netapp.com/NOW/cgi-bin/bol)

Bugs Online search tool

NetApp provides a online tool that lets you search for the most current information about a known bug.

You can use the Bugs Online tool to determine if new information has been uncovered about a bug or if the bug has been fixed.

Bugs Online provides several search methods. You can enter the bug number or keywords related to the bug. Keyword combinations and Bug Type(s) that you might want to use include:

- Virtual Storage Console
- FCP - ESX
- ISCSI - ESX

You can also set Bugs Online to automatically display all bugs of interest to you. Use the New Bug Alerts Profiler at the bottom of the Bugs Online page to set bug searching criteria that match your requirements

Related information

[Bugs Online & Release Tools - now.netapp.com/NOW/cgi-bin/bol](http://now.netapp.com/NOW/cgi-bin/bol)

NetApp product documentation

You can access documentation for all NetApp products on the NOW site at now.netapp.com.

In addition to product documentation, NetApp provides other product information, such as technical reports and white papers.

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How to search for documentation on the NOW site

NetApp provides a variety of documentation on the NOW site that can be helpful in working with Virtual Storage Console.

You can use the NOW Natural Language PowerSearch tool, located on the Search and Support page on the NOW site, to search through the following information sources:

- Product documents
- Knowledgebase solutions
- Bugs Online
- NOW forums
- Tools and other documentation
- Partner knowledgebases

Related information

[Search and Support -- now.netapp.com/eservice/SupportHome.jsp](http://now.netapp.com/eservice/SupportHome.jsp)

Links to NetApp product documentation

The Access and Order Product Documentation page contains pointers to the most current NetApp documentation for Virtual Storage Console, ESX hosts, and storage systems.

Links to specific VSC documentation are in the SAN/IPSAN Information Library and available from the NetApp NOW Description Pages for VSC.

The following table describes some of the documents on the NetApp NOW Web site that contain current information about host and storage system requirements, supported configurations, and best practices, as well as procedures for installing and managing your storage environment.

If you need more information about...	Go to...
The latest supported configurations	• NetApp Interoperability Matrix • <i>System Configuration Guide</i>
General information about using ESX hosts with NetApp storage, configuring guest operating systems, resolving VMDK alignment issues, data protection, and best practices	• The latest <i>VSC Using ESX Hosts with NetApp Storage</i> guide • NetApp Technical Report 3749: <i>NetApp and VMware vSphere Storage Best Practices</i>
Configuring and managing the storage system	• SAN/IP SAN Best Practices Index • The following documents for your Data ONTAP release in the Data ONTAP Information Library • The <i>Data ONTAP Block Access Management Guide for iSCSI and FC</i>
Supported Fibre Channel SAN topologies	The <i>FC and iSCSI Configuration Guide</i>
Verifying storage systems and environments	<i>Site Requirements Guide</i>
Converting an ESX 4.0 configuration to use ALUA	KnowledgeBase article 51768: <i>Upgrading an ESX 4.0 environment from a non-ALUA to ALUA configuration</i>

Related information

Access and Order Product Documentation page -

<http://now.netapp.com/NOW/knowledge/docs/docs.cgi>

SAN/IP SAN Library Information Library - <http://now.netapp.com/NOW/knowledge/docs/san/>

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

System Configuration Guide -

<http://now.netapp.com/NOW/knowledge/docs/hardware/NetApp/syscfg/>

SAN/IP SAN Best Practices Index - http://now.netapp.com/NOW/knowledge/docs/bpg/san_ipsan/

Data ONTAP Information Library -

http://now.netapp.com/NOW/knowledge/docs/ontap/ontap_index.shtml

FC and iSCSI Configuration Guide -

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

Site Requirements Guide -

<http://now.netapp.com/NOW/knowledge/docs/hardware/NetApp/site/index.htm>

KnowledgeBase article 51768: Upgrading an ESX 4.0 environment from a non-ALUA to ALUA configuration - now.netapp.com/Knowledgebase/solutionarea.asp?id=kb51768

TR-3749: NetApp and VMware vSphere Storage Best Practices - media.netapp.com/documents/tr-3749.pdf

How to send your comments

Your feedback is important in helping NetApp provide the most accurate and high quality documentation possible.

If you have comments or suggestions for improving the Host Utilities documents, you can send them to NetApp electronically by emailing them to:

doccomments@netapp.com

To help direct the comments to the correct division, please put **Virtual Storage Console** in the subject line.

Contact Technical Support

If you have a question that has not been resolved by these Release Notes, contact NetApp Technical Support.

Next topics

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[How to contact NetApp Technical Support](#) on page 32

Things to check before you call Technical Support

Before you call Technical Support, there are several things you can try in effort to solve the problem yourself.

They include:

- Go through these *Release Notes* to see if they contain information on your problem.
- Check all cables to make sure that they are connected properly.
- If you are using switches, check the power switches to make sure that the system is turned on. You should also make sure the system components were turned on in the correct order.
- Review the troubleshooting information in the documentation for this product.

Information you need to provide to Technical Support

Before you contact Technical Support, you need to gather information about your system and your problem.

You should have the following information available when you contact Technical Support:

- Your contact information.
- A list of all the NetApp products you are using.
- All the error messages from the system.
- Information on your system setup.
- Your licensing information.

How to contact NetApp Technical Support

You can contact NetApp Technical Support by telephone or from the NetApp NOW site.

To contact Technical Support by telephone, use the following numbers:

- 888 4-NETAPP (US and Canada)
- 00.800.44.NETAPP (EMEA/Europe)
- +800.800.80.800 (Asia/Pacific)

To contact Technical Support from the Web, use the following address:

- <http://now.netapp.com>

For a detailed listing of Technical Support phone numbers, go to the NetApp Support page at <http://www.netapp.com/us/support/ngs-contacts.html>

Related information

Technical Support - <http://www.netapp.com/us/support/ngs-contacts.html>