

# Veritas™ Cluster Server for NetApp SnapMirror Release Notes

Windows 2000, Windows Server 2003

5.0 Release Update 1



# Veritas Cluster Server for NetApp SnapMirror Release Notes

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VCS 5.0 Update 1 for NetApp SnapMirror

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9/28/07

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## Licensing and registration

VCS for NetApp SnapMirror is a licensed product. See the *Veritas Storage Foundation for Windows Installation Guide* for license installation instructions.

## Technical support

For technical assistance, visit <http://entsupport.symantec.com> and select phone or email support. Use the Knowledge Base search feature to access resources such as TechNotes, product alerts, software downloads, hardware compatibility lists, and our customer email notification service.



# VCS for Network Appliance SnapMirror Release Notes

[Introduction](#)

[Features and updates](#)

[No longer supported](#)

[Installation requirements](#)

[Software limitations](#)

[Known issues](#)

[Software fixes and enhancements](#)

[Documentation](#)

## Introduction

This document provides important information regarding Veritas Cluster Server (VCS), VCS agents for Network Appliance SnapMirror, VCS application agent for Microsoft Exchange, the VCS database agent for Microsoft SQL, and the VCS database Agent for Oracle. Please review this entire document before using this product.

For general information on regarding Veritas Storage Foundation and High Availability Solutions for Windows, see the following Web site:

<http://www.symantec.com>

For the latest information on updates, patches, and software issues regarding this release, see the following TechNote:

<http://entsupport.symantec.com/docs/285845>

This release also supports Veritas Cluster Server Management Console. Release Notes for Veritas Cluster Server Management Console are located on the software discs for that product.

## Features and updates

The features and updates described below are introduced in this version.

### Features and updates in 5.0 Release Update 1

The features and updates described below are introduced in this version.

#### **Support for Microsoft Exchange environments**

This update release introduces support for Microsoft Exchange 2007 (64-bit).

#### **Support for Microsoft SQL environments**

This update release adds support for Microsoft SQL on 64-bit operating systems.

#### **Support for Oracle**

This update release adds support for Oracle 10g on 32-bit operating systems.

#### **New and enhanced configuration wizard support**

This update release introduces or enhances the following wizards:

- SQL 2000/2005 wizard (32 bit and 64 bit)
- Exchange 2007 wizard (64 bit)
- Exchange 2000/2003 wizard (32 bit)
- Oracle configuration wizard (32 bit)
- Application configuration wizard
- FileShare configuration wizard
- PrintShare configuration wizard
- MSVM configuration wizard
- IIS configuration wizard

## Features and updates in 5.0

The features and updates described below were introduced in version 5.0.

### **Support for Microsoft SQL environments**

The 5.0 version adds support for Microsoft SQL Server 2000 and 2005.

### **Cluster Management Console**

The new Cluster Management Console replaces Cluster Manager (Web Console) and CommandCentral Availability.

Cluster Management Console enables administration and analysis for VCS clusters in your enterprise from a single console. You can install Cluster Management Console on a standalone system to manage multiple clusters or you can install the console on cluster nodes to manage a local cluster.

### **VCS privileges for operating system user groups**

You can now assign VCS privileges to native users at an operating system (OS) user group level in secure clusters.

Assigning a VCS role to a user group assigns the same VCS privileges to all members of the user group, unless you specifically exclude individual users from those privileges.

See the *Veritas Cluster Server Administrator's Guide* for more information.

### **Five levels of service group dependencies**

VCS now supports configuring up to five levels of service group dependencies. The exception is the online local hard dependency, for which only two levels are supported.

### **RemoteGroup agent to monitor service groups in remote clusters**

The new RemoteGroup agent monitors and manages service groups in a remote cluster. See the *Veritas Cluster Server Bundled Agents Reference Guide* for more information about the agent.

## Enhancements to the hstop command

You can customize the behavior of the hstop command by configuring the new EngineShutdown attribute for the cluster.

EngineShutdown Value	Description
Enable	Process all hstop commands. This is the default behavior.
Disable	Reject all hstop commands.
DisableClusStop	Do not process the hstop -all command; process all other hstop commands.
PromptClusStop	Prompt for user confirmation before running the hstop -all command; process all other hstop commands.
PromptLocal	Prompt for user confirmation before running the hstop -local command; reject all other hstop commands.
PromptAlways	Prompt for user confirmation before running any hstop command.

## Simulator supports deleting simulated clusters

VCS Simulator now supports deleting simulated clusters. Symantec recommends using the same tool (command line or Java Console) to create and delete a cluster. For example, if you created the cluster from the Java Console, delete the cluster from the Java Console.

## Backup of VCS configuration files

VCS backs up all configuration files (<config>.cf) including main.cf and types.cf to <config>.cf.autobackup. The configuration is backed up only if the BackupInterval is set and the configuration is writable.

When you save a configuration, VCS saves the running configuration to the actual configuration file (i.e. <config>.cf) and removes all autobackup files. This does away with the VCS behavior of creating .stale files

If you do not configure the BackupInterval attribute, VCS does not save the running configuration automatically.

See the *Veritas Cluster Server Administrator's Guide* for more information.

## Separate logger thread for HAD

The VCS engine, HAD, runs as a high-priority process to send heartbeats to kernel components and to respond quickly to failures. In VCS 5.0, HAD runs logging activities in a separate thread to reduce the performance impact on the engine due to logging.



## New term: Daemon Down Node Alive (DDNA)

Daemon Down Node Alive (DDNA) is a condition in which the VCS high availability daemon (HAD) on a node fails, but the node is running. See the *Veritas Cluster Server Administrator's Guide* for more information.

## Change in behavior: Use comma or semicolon as delimiter

VCS 5.0 does not support using spaces as delimiters to separate vector, association, or keylist values. You must use a comma or a semicolon as a delimiter.

## Change in behavior: New format for engine version

The new EngineVersion attribute replaces the MajorVersion and MinorVersion attributes. VCS stores version information in the following format:

```
<major>.<minor>.<maintenance_patch_num>.<point_patch_num>
```

## Change in behavior for the resfault trigger

VCS now provides finer control over the resfault trigger. The resfault trigger is now invoked if the TriggerResFault attribute is set to 1.

## Change in behavior: New option for the hastart command

Use the -v option to retrieve concise information about the VCS version. Use the -version option to get verbose information.

## New attributes

VCS 5.0 introduced the following new attributes. See the *Veritas Cluster Server Administrator's Guide* for more information.

### Cluster attributes

- EngineShutDown—Provides finer control over the hastop command.
- BackupInterval—Time period in minutes after which VCS backs up configuration files.
- OperatorGroups—List of operating system user account groups that have Operator privileges on the cluster.
- AdministratorGroups—List of operating system user account groups that have administrative privileges on the cluster.
- Guests—List of users that have Guest privileges on the cluster.

### System attributes

- EngineVersion—Specifies the major, minor, maintenance-patch, and point-patch version of VCS.

### Service group attributes

- TriggerResFault—Defines whether VCS invokes the resfault trigger when a resource faults.
- AdministratorGroups—List of operating system user account groups that have administrative privileges on the service group.
- OperatorGroups—List of operating system user account groups that have Operator privileges on the service group.
- Guests—List of users that have Guest privileges on the service group.

### Removed attributes

- MajorVersion—The EngineVersion attribute provides information about the VCS version.
- MinorVersion—The EngineVersion attribute provides information about the VCS version.

### Enhanced support for creating secure clusters

While configuring secure clusters, the VCS Configuration Wizard (VCW) now enables searching existing Symantec Product Authentication Service Root Brokers (RB) in a Windows domain. It allows to search a root broker across the entire domain, or an Organization Unit in the domain. You can also use the available filter criteria options to search systems matching a certain condition.

### Support for global clusters in a secure environment

For global clusters, VCS now provides the option of making inter-cluster communications secure. The following communications can be made secure:

- Communications between wide-area connectors
- Communications between wide-area connectors and the Steward process.

See the *Veritas Cluster Server Administrator's Guide* for more information.

### Updated Lanman agent

The Lanman agent adds three new attributes: DNSRefreshInterval, DNSZones, AliasName, TSIGKeyFile, and TTL. The Lanman agent supports creation of DNS records in different DNS zones. These new attributes enhance the DNS updating

capabilities of the Lanman agent. See the *Veritas Cluster Server Bundled Agents Reference Guide* for more information about these new attributes.

## Product installer enhancements

- Support for 'No License Key' evaluations  
An evaluation license key is embedded in the product. This license key is valid for a limited evaluation period only.
- Pre-installation Configuration Checker
- Built-in HCL/SCL Links for customers to verify compatibility during install
- Selective installation of Veritas Dynamic Multi-pathing (DMP) DSMs  
During product installation you may choose to install one or more DMP DSMs to add fault tolerance to disk storage by making use of multiple paths between a computer and individual disks in an attached disk storage system.
- New Virtual Server Licensing Policy  
Each copy of the Veritas Cluster Server for NetApp including all options and agents, whether used on a physical server or within a virtual machine must be separately licensed. Each Licensed Software license specifies the number of instances of the Licensed Software you may run on a particular server at one time.

## Licensing changes

- Integration with Symantec Licensing Inventory Manager (SLIM)  
The Symantec License Inventory Manager is an enterprise asset management tracking tool. It inventories Symantec Information Availability products in your network and consolidates critical information on the deployment of these products.

## License policy

Each copy of Veritas Cluster Server for NetApp SnapMirror including all options and agents, whether used on a physical Server or within a virtual machine, must be licensed according to the conditions set forth in the sections below. Each Licensed Software license specifies the number of instances of the Licensed Software you may run on a particular Server at one time.

[Table 1-1](#) lists VCS for NetApp SnapMirror editions and the additional licensing terms that apply.

**Table 1-1** VCS for NetApp SnapMirror licensing terms

Microsoft Operating System Edition	VCS for NetApp SnapMirror licensing terms
<ul style="list-style-type: none"> <li>■ Server Edition</li> <li>■ Standard Edition</li> <li>■ Web Edition</li> </ul>	<p>A separate license for the licensed software is required for each virtual or physical server, where the software is installed.</p>
<ul style="list-style-type: none"> <li>■ Advanced Edition</li> <li>■ Enterprise Edition</li> </ul>	<p>For each license, you may run one instance of the licensed software on one physical server and up to four simultaneous instances of the licensed software on virtual servers located on the physical server.</p>
<ul style="list-style-type: none"> <li>■ Datacenter Edition</li> </ul>	<p>For each license, you may run one instance of the licensed software on one physical server and an unlimited number of virtual servers located on the physical server.</p>

## No longer supported

- The *VERITAS Cluster Server Application Note: High Availability for VMware ESX Virtual Machines* describing the use of a SFW HA virtual machine in a VCS for Linux environment has been removed from the documentation set. For VMware environments, Symantec recommends using the VCS for VMware ESX product.
- The `-stale` and `-force` options for the `hastart` command have been discontinued. Now, VCS backs up all configuration files (`<config>.cf`) including `main.cf` and `types.cf` to `<config>.cf.autobackup`. The configuration is backed up only if the `BackupInterval` is set and the configuration is writable.  
See the *Veritas Cluster Server Administrator's Guide* for more information.
- The Cluster Manager (Web Console) has been replaced by the Cluster Management Console. The Cluster Management Console can be run in single cluster mode to manage a single cluster or a central server can be configured to manage multiple clusters.

## Installation requirements

VCS is supported on Windows-certified network servers containing one or more processors. This release update supports clusters of up to 32 nodes.

### Supported hardware

Refer to the Hardware Compatibility List on the Symantec Support Web site at <http://entsupport.symantec.com> to determine the approved hardware. The compatibility list contains information about supported hardware and is updated regularly. Before installing or upgrading VCS, review the current compatibility list to confirm the compatibility of your hardware and software.

### Supported software

The requirements for operating system and application support shown below supersede those requirements listed in the product documentation.

#### Veritas Cluster Server

- Veritas Cluster Server (VCS) 5.0 for Windows including the VCS application agent for Microsoft Exchange, the VCS database agent for Microsoft SQL, or the VCS database agent for Oracle

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**Note:** All VCS nodes must run the same Windows operating system and service pack level as well as the same VCS version and service pack level.

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#### Microsoft Exchange servers and their operating systems

- Microsoft Exchange Server 2007 Standard Edition or Enterprise Edition  
*with*  
Windows Server 2003 Standard x64 Edition, Enterprise x64 Edition, or Datacenter x64 Edition (SP1 required for all editions, SP2 supported)  
*or*  
Windows Server 2003 R2 x64 editions: Standard x64 Edition, Enterprise x64 Edition, or Datacenter x64 Edition  
*Or*
- Microsoft Exchange Server 2003 Standard Edition or Enterprise Edition (SP2 supported for both editions)  
*with*

Windows Server 2003 Standard Edition, Enterprise Edition, or Datacenter Edition (SP 1 required for all editions, SP2 supported)

*or*

Windows Server 2003 R2 Standard Edition, Enterprise Edition, or Datacenter Edition

*or*

Windows 2000 Server, Advanced Server, or Datacenter Server (all require SP4 with Update Rollup 1)

*Or*

- Microsoft Exchange 2000 Server or Microsoft Exchange 2000 Enterprise Server (SP3 with August 2004 rollup patch supported for both editions)  
*with*  
Windows 2000 Server, Advanced Server, or Datacenter Server (all require SP4 with Update Rollup 1)

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**Note:** Microsoft support for Exchange Server 2003 is limited to 32-bit versions of the Windows 2003 operating system.

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## Microsoft SQL servers and their operating systems

- Microsoft SQL Server 2005 (32-bit) Standard Edition or Enterprise Edition (SP1 required for both editions)  
*with*  
Windows Server 2003 (32-bit) Enterprise Edition or Datacenter Edition (SP1 required for both editions, SP2 supported)  
*or*  
Windows Server 2003 R2 (32-bit) Standard Edition, Enterprise Edition, or Datacenter Edition (SP2 supported for all editions)  
*or*  
Windows Server 2003 Standard x64 Edition, Enterprise x64 Edition, or Datacenter x64 Edition (SP2 supported for all editions)  
*or*  
Windows Server 2003 R2 x64 editions: Standard R2 x64 Edition, Enterprise R2 x64 Edition, or Datacenter R2 x64 Edition (SP2 supported for all editions)  
*Or*
- Microsoft SQL Server 2005 (64-bit) Standard Edition or Enterprise Edition (SP 1 required for both editions)  
*with*

Windows Server 2003 for Itanium-based systems: Enterprise Edition or Datacenter Edition (SP1 required for both editions, SP2 supported)

*or*

Windows Server 2003 Standard x64 Edition, Enterprise x64 Edition, or Datacenter x64 Edition (SP2 supported for all editions)

*or*

Windows Server 2003 R2 x64 editions: Standard R2 x64 Edition, Enterprise R2 x64 Edition, or Datacenter R2 x64 Edition (SP2 supported for all editions)

- Microsoft SQL Server 2000 Standard Edition or Enterprise Edition (SP4 required for both editions)
  - with*
  - Windows Server 2003 (32-bit) Standard Edition, Enterprise Edition, or Datacenter Edition (SP1 required for all editions, SP2 supported)
  - or*
  - Windows Server 2003 R2 (32-bit) Standard Edition, Enterprise Edition, or Datacenter Edition (SP2 supported for all editions)
  - or*
  - Windows 2000 Server, Windows 2000 Advanced Server, or Windows 2000 Datacenter Server (all require Service Pack 4 with Update Rollup 1)
  - Or*
- Microsoft SQL Server 2000 (64-bit) Enterprise Edition
  - with*
  - Windows Server 2003 for Itanium-based systems: Enterprise Edition or Datacenter Edition (SP1 required for all editions, SP2 supported)
  - Or*
- Microsoft SQL Server 2000 Standard Edition or Enterprise Edition (SP4 required for both editions)
  - with*
  - Windows Server 2003 Standard x64 Edition, Enterprise x64 Edition, or Datacenter x64 Edition (SP1 required for all editions, SP2 supported)
  - or*
  - Windows Server 2003 R2 x64 editions: Standard R2 x64 Edition, Enterprise R2 x64 Edition, or Datacenter R2 x64 Edition (SP2 supported for all editions)

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**Note:** Microsoft SQL Server 2000 and Microsoft SQL Server 2005 can exist in the same cluster but cannot operate on or fail over to the same system. If you use both applications in a cluster, select a distinct set of systems for the SystemList attribute of each application's service group.

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## Oracle software

- Oracle 10g, Release 1 (10.1.0.2) Standard Edition or Enterprise Edition  
*or*  
Oracle 10g, Release 2 (10.2.0.1.0) Standard Edition or Enterprise Edition  
*with*  
Windows Server 2003 Standard Edition, Enterprise Edition, or Datacenter Edition (SP 1 required for all editions, SP2 supported)  
*or*  
Windows 2000 Server, Advanced Server, or Datacenter Server (all require SP4 with Update Rollup 1)

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**Note:** Support for Oracle is limited to 32-bit versions of the operating system.

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## Other software

- Network Appliance Data ONTAP 7.2
- Network Appliance SnapDrive 4.1, 4.2, and 5.0
- Network Appliance SnapManager for SQL 2.0
- Network Appliance SnapManager for Exchange 3.2 (4.0 for Exchange 2007)
- NetApp FCP Attach Kit 3.0, Windows Host Utilities 3.0
- Microsoft iSCSI software initiator version 2.02 and 2.05

## Hardware requirements

### Memory

- Minimum required: 512 MB
- Recommended: 1GB

### System processor

- Minimum required: 300 MHz Pentium II
- Recommended: 550 MHz Pentium III or higher

## Display resolution

- Minimum required: 800 x 600 pixels
- Recommended: 1024 x 768 pixels or higher

VCS Cluster Manager (Java Console and Cluster Management Console) requires an 8-bit (256 color) display and a graphics card able to render 2D images.

## Supported browsers

Veritas Cluster Management Console is supported on the following browsers:

- Microsoft Internet Explorer 6.0 with SP2 or newer
- Firefox 1.5 or newer

Veritas Cluster Management Console requires the Macromedia Flash Plugin v8.0.

## Firewall and anti-spyware considerations

Disable spyware monitoring and removal software before installing this product. You must disable firewalls to enable discovery of the local client. On systems running Windows Server 2003 SP1, you must disable the Windows Firewall or configure it to allow exceptions to the Remote Administration and File and Printer Sharing services.

## Software limitations

The following limitations apply to VCS version 5.0.

### Cluster address for global cluster requires resolved virtual IP

The virtual IP address must have a DNS entry if virtual IP is used for heartbeat agents.

### Cluster Manager (Java Console)

#### **Java Console for VCS is required**

Cluster Manager (Java Console) from previous VCS versions cannot be used to manage VCS 5.0 clusters. Symantec recommends always using the latest version of Cluster Manager.

#### **Running Java Console on a non-cluster system is recommended**

Symantec recommends not running Cluster Manager (Java Console) for an extended period on a system in the cluster.

### System names must not include periods

The name of a system specified in the VCS configuration file, `main.cf`, must not be in the fully qualified form; that is, the name must not include periods. The name in `main.cf` must be consistent with the name used in the `llthosts.txt` file.

### Symantec Product Authentication Service

Symantec Product Authentication Service does not support renaming nodes.

### WAN cards are not supported

The VCS Configuration Wizard (VCW) does not proceed with network card discovery if it detects a WAN card.

### Incorrect updates to path and name of `types.cf`

The path of the `types.cf` file, as referenced in the `main.cf`, updates incorrectly if the path contains spaces. For example, `C:\Program Files\`, would update incorrectly. Running a combination of the `hacf` commands `hacf -cmdtocc` and `hacf -cftocmd` truncates the path of the `types.cf` file and updates the `main.cf` file with the truncated path.

## Limitation on SnapManager for Exchange

In this release, the Exchange Setup Wizard for VCS supports Network Appliance SnapManager for Microsoft Exchange (SME) with the restriction that MTA data, transaction logs, and registry replication information must be on the same LUN.

## Undocumented commands and command options

VCS contains undocumented commands and command options intended for development use only. Undocumented commands are not supported for external use.

## VCW configures the cluster with both upper and lower case of the same system name

By design, the VCS Engine (HAD) is case sensitive. If you change the system name through the System Properties dialog box or any other method and follow a capitalization format different from that of the original name then the VCS engine considers this as a new system and creates an additional entry in the `main.cf` file. [506454]

**Workaround:** If you use the system name in any of the VCS commands, make sure that the system name is in uppercase (all caps).

## Undefined behavior when using VCS wizards to modify incorrectly configured service groups

If you use the VCS wizards to modify service groups that are incorrectly configured through the VCS Cluster Manager (Java Console), the wizards fail to modify the service groups. This may also result in undefined behaviors in the wizards. [253007]

## Exchange virtual servers are shown as non-reachable in the Exchange Service Manager

In a clustered Exchange 2003 configuration, the following issue is observed: Exchange virtual servers were displayed as non-reachable in the Exchange Service Manager (ESM) under tools, monitoring, and status, if the Routing Group Master is configured on the Exchange cluster nodes.

**Workaround:** Symantec recommends that you configure the Routing Group Master on a standalone Exchange Server. [333108]

## Reconfiguring a root broker in a secure cluster may cause VCS commands to fail

If you reconfigure the root broker while editing a secure cluster, VCS commands may fail on the node on which you edit the cluster. [764745] The following error message is displayed:

```
VCS ERROR V-16-1-53006 Unable to connect to VCS engine securely
```

However, the VCS commands work from the other nodes in the cluster.

## Cannot connect to the other LUNs on the NetApp Filer from the node on which the Exchange service group is online

If an Exchange service group (along with the NetAppFiler and NetAppSnapDrive resources) is online on a node, you will not be able to connect to the other LUNs on the filer using the SnapDrive plugin from the Windows Computer Management console.

You will be able to connect to the other LUNs only if MExchangeSA and all resources above it are taken offline.

## SnapDrive resources fail to offline for a standalone Exchange Server in a VCS environment

In a standalone Exchange 2003 SP1 cluster configuration, if you take the Exchange service group offline, the NetAppSnapDrive resources fail to go offline. [797915]

**Workaround:** Rename the Microsoft iSCSI Initiator such that the initiator name does not contain any reference to the system name. [797915]

## Known issues

The following issues have been reported for VCS version 5.0.

### In VCW, the Notifier and the Web Console cannot be set to use same NIC resource

If you have already configured the cluster service group and are preparing to configure the notification options, you cannot select the same NIC resource as the cluster service group in the VCW Notifier Card Selection window. [894979]

**Workaround:** In the Notifier Card Selection window, select the Create new NIC resource for "Notifier Manager" option and select the appropriate adapter in the select adapter box. This workaround will create a duplicate NIC resource in the main.cf file. You can then use the Java GUI to delete this duplicate NIC resource and set the notification resource dependency on cluster service group NIC resource.

### VCS Simulator installation may require a reboot

While installing the VCS Simulator, the installer may display a message requesting you to reboot the computer to complete the installation. Typically, a reboot is required only in cases where you are re-installing the VCS Simulator.

### Error installing printer drivers

You may receive an error message while installing printer drivers. [312350]

```
Printer driver was not installed. Operation could not be completed.
```

**Workaround:** Set the ADUpdateRequired and ADCriticalForOnline attributes to 1 for the Lanman resource.

### VCS uninstallation halts and displays an error message; uninstall continues after clearing the message.

During VCS for NetApp uninstallation, the installer halts while uninstalling the Symantec Service Management Framework component and displays the following error message:

```
Shell error: not found
```

Uninstallation continues after clearing the error message.

## VCS wizards do not rescan NICs

After a wizard scans for NICs during discovery, the wizard does not scan again. For example, if you click Back to modify information in a previous wizard screen, the wizard cannot rescan when you click Next. [335905]

**Workaround:** Exit and launch the wizard again.

## Cannot stop VCS when PromptClusStop is set

If you set the EngineShutdown attribute to PromptClusStop, the hastop command may not work. [893131]

## Partial groups go online after restart

Partial groups go online erroneously if you kill and restart the VCS engine. [821454]

## Saving large configuration results in very large file size for main.cf

If your service groups have a large number resources or resource dependencies, and if the PrintTree attribute is set to 1, saving the configuration may cause cause the configuration file to become excessively large in size and may impact performance. [616818]

**Workaround:** Disable printing of resource trees in regenerated configuration files by setting the PrintTree attribute to 0.

## AutoStart may violate limits and prerequisites load policy

The load failover policy of Service Group Workload Management may be violated during AutoStart when all of the following conditions are met:

- More than one autostart group uses the same Prerequisites.
- One group, G2, is already online on a node outside of VCS control, and the other group, G1, is offline when VCS is started on the node.
- The offline group is probed before the online group is probed.

In this scenario, VCS may choose the node where group G2 is online as the AutoStart node for group G1 even though the Prerequisites load policy for group G1 is not satisfied on that node.

**Workaround:** Persistently freeze all groups that share the same Prerequisites before using `hastop -force` to stop the cluster or node where any such group is online. This workaround is not required if the cluster or node is stopped without the force option.

## Trigger not invoked in REMOTE\_BUILD state

In some situations, VCS does not invoke the injeopardy trigger if the system is a REMOTE\_BUILD state. VCS fires the trigger when the system goes to RUNNING state.

## Some alert messages do not display correctly

The following alert messages do not display correctly[612268]:

- 51030      Unable to find a suitable remote failover target for global group %s. administrative action is require
- 51031      Unable to automatically fail over global group %s remotely because local cluster does not have Authority for the group.
- 50913      Unable to automatically fail over global group %s remotely because clusters are disconnected and ClusterFailOverPolicy is set to %s. Administrative action is required.
- 50914      Global group %s is unable to failover within cluster %s and ClusterFailOverPolicy is set to %s. Administrative action is required.
- 50916      Unable to automatically failover global group %s remotely due to inability to communicate with remote clusters. Please check WAN connection and state of wide area connector.
- 50761      Unable to automatically fail over global group %s remotely because ClusterList values for the group differ between the clusters. Administrative action is required.
- 50836      Remote cluster %s has faulted. Administrative action is required.
- 51032      Parallel global group %s faulted on system %s and is unable to failover within cluster %s. However, group is still online/partial on one or more systems in the cluster
- 51033      Global group %s is unable to failover within cluster %s and AutoFailOver is %s. Administrative action is required.

## Issues related to the VCS engine

### Engine may hang in LEAVING state

When the command `hares -online` is issued for a parent resource when a child resource faults, and the `hares -online` command is followed by the command `hastop -local` on the same node, then the engine transitions to the LEAVING state and hangs.

**Workaround:** Issue the command `hastop -local -force`.



### Timing issues with AutoStart policy

Consider a case where the service group is offline and engine is not running on node 1. If you restart the engine on node 1 after HAD is killed on node 2 *and* before the engine is restarted on node 2, then VCS does not initiate the autostart policy of the group.

## Issues related to Cluster Manager (Java Console)

### Exception when selecting preferences

On Windows systems, selecting the Java (Metal) look and feel of the Java Console may cause a Java exception. [585532]

**Workaround:** After customizing the look and feel, close restart the Java Console.

### Common system names in a global cluster setup

If both local and remote systems have a common system name in a global cluster setup, group operations cannot be performed on those systems using the Java console.

**Workaround:** Use command-line interface to perform group operations.

## Issues related to global service groups

### VCW configures a resource for GCO in a cluster without a valid GCO license

The VCS Configuration wizard (VCW) enables you to configure a resource for global clustering, even if the cluster does not have a valid license for the Global Cluster Option (GCO). You can successfully bring a GCO resource online, take it offline, or switch it between nodes in a cluster. However, the following message is logged in the engine log if you attempt to connect to a remote cluster:

```
VCS WARNING V-16-3-18000 Global Cluster Option not licensed.  
Will not attempt to connect to remote clusters
```

**Workaround:** Symantec recommends that you do not configure a global cluster resource in a cluster without a valid GCO license.

### Group does not go online on AutoStart node

Upon cluster startup, if the last system on which the global group is probed is not part of the group's AutoStartList, then the group will not AutoStart in the cluster. This issue affects only global groups. Local groups do not experience this behavior

**Workaround:** Ensure that the last system to join the cluster is a system in the group's AutoStartList.

**Declare cluster dialog may not display highest priority cluster as failover target**

When a global cluster fault occurs, the Declare Cluster dialog enables you to fail groups over to the local cluster. However, the local cluster may not be the cluster assigned highest priority in the cluster list.

**Workaround:** To bring a global group online on a remote cluster, do one of the following:

- From the Java Console, right-click the global group in the Cluster Explorer tree or Service Group View, and use the Remote Online operation to bring the group online on a remote cluster.
- From the Web Console, use the Operations links available on the Service Groups page to bring the global group online on a remote cluster.

**Cross-cluster switch may cause concurrency violation**

If the user tries to switch a global group across clusters while the group is in the process of switching within the local cluster (across systems), then the group will be online on both the local and remote clusters. This issue affects only global groups. Local groups do not experience this behavior

**Workaround:** Ensure that the group is not switching locally before attempting to switch the group remotely.

## Issues related to secure clusters

**Upgrading a secure cluster may require HAD restart**

After upgrading a secure cluster, you may not be able to connect to the Cluster Manager Console (Java GUI) and may observe the following error in the VCS engine log: `VCS ERROR V-16-1-50306 Failed to get credentials for VCS Engine.[849401]`

**Workaround:** Use the `hastop -all` command to stop HAD and related processes. Then run the `hastart` command to restart HAD.

**New user does not have administrator rights in Java GUI**

In a secure cluster, add a new domain user to the cluster from the command line with Cluster Administrator privileges. Try to login into the Cluster Console (Java GUI) using the newly added user privileges. The new user is logged in as a guest instead of an administrator. [614323]

**Workaround:** When adding a new user to the cluster, add the user name without the domain extension. For example, if the domain is `vcstest.com` then the user name must be specified as `username@vcstest`.

## Changes to referenced attributes do not propagate

This behavior applies to resources referencing attributes of other resources; that is, the ArgList of one resource (A) passes an attribute of another resource (B). If resource B is deleted from the group, or if the SystemList of the group containing resource B does not contain a system defined in the SystemList of the group containing resource A, the VCS engine does not propagate these changes to the agent monitoring resource A. This may cause resource A to fault because it does not receive the appropriate attribute values from resource B.

In such situations, you must reset the value of resource B in the attribute definition of resource A or restart the agent managing resource A.

## ArgListValue attribute may not display updated values

When you modify a resource type that has localizable attributes, the agent log warns that ArgListValues cannot be localized. You can safely ignore the warning message about ArgListValues.

After you modify values for a resource that has localizable attributes, the command

```
hares -display
```

 does not display the updated ArgListValues.

## SnapDrive resource faults due to timeout during failover

The SnapDrive resource may fault due to timeout when the service group fails over another node.[1128331]

**Workaround:** Clear the fault and online the service group again.

## Resource fails to online after failover on secondary

During a migrate or failover on the secondary, the NetApp SnapDrive resources fail to come online.

**Workaround:** Mount the LUNs manually using the SnapDrive GUI or CLI and then probe the resources.

## AutoStart may violate limits and prerequisites load policy

The load failover policy of Service Group Workload Management may be violated during AutoStart when all of the following conditions are met:

- More than one autostart group uses the same prerequisites.
- One group, G2, is already online on a node outside of VCS control, and the other group, G1, is offline when VCS is started on the node.
- The offline group is probed before the online group is probed.

In this scenario, VCS may choose the node where group G2 is online as the AutoStart node for group G1 even though the Prerequisites load policy for group G1 is not satisfied on that node.

**Workaround:** Persistently freeze all groups that share the same Prerequisites before using `hastop -force` to stop the cluster or node where any such group is online. This workaround is not required if the cluster or node is stopped without the force option.

## VCS 5.0 with Microsoft Exchange Server

### Exchange Setup Wizard hangs for several minutes while unmounting the registry replication drive

During pre- or post-installation on a node, the Exchange setup wizard hangs for several minutes while unmounting the registry replication volume. The operation reports an error even when unmounting the volume succeeds. [1116851]

**Workaround:** Refer to Microsoft Knowledge Base article 919757 and install the indicated Windows Server 2003 hotfix.

### Exchange Setup Wizard does not allow a node to be rebuilt and fails during installation

The Exchange Setup Wizard does not allow a node to be rebuilt, and fails during installation. [256740] This is because the wizard stores all the information about the Exchange Virtual servers (EVS) that can fail over on a node in the ExchConfig registry hive. The path in the registry hive is HKLM\SOFTWARE\VERITAS\VCS\EXCHCONFIG. If any of the failover nodes die, the corresponding entry still exists in the system list of the EVS. During installation, the Exchange Setup wizard refers to this incorrect registry entry and fails.

**Workaround:** Manually remove the registry entries of the nodes that are being rebuilt from the system list of the virtual exchange server on all nodes.

---

**Caution:** Incorrectly editing the registry may severely damage your system. Before making changes to the registry, make a backup copy.

---

- 1 To open the Registry Editor, click **Start > Run**, type `regedit`, and then click **OK**.
- 2 In the registry tree (on the left), navigate to `HKLM\SOFTWARE\VERITAS\VCS\EXCHCONFIG`
- 3 From the Exchange Virtual Server keys, delete the keys representing the nodes that are being rebuilt.
- 4 Repeat steps 1 to 3 for the Exchange virtual server on all nodes in the cluster.
- 5 Exit the Registry Editor.

### Metabase update for Exchange may take a longer time

In some failover environments the metabase update for Exchange may take a longer time. The Exchange agent waits for 10 seconds (default timeout value) before timing out and faulting the resource. [499727]

**Workaround:** Increase the metabase update timeout value. See Technote 274174 at <http://entsupport.symantec.com> for more information.

### Exchange System Attendant logs warning to Exchange event log

During preinstallation steps, the Exchange Setup wizard for VCS renames a node to the Exchange virtual server name. Installing Microsoft Exchange on the node then adds the virtual server name to the Exchange Domain Servers group.

During post-installation steps, the setup wizard restores the original name to the node and removes the Exchange virtual server name from the Exchange Domain Servers group.

When post-installation steps are complete, and the Exchange service group is brought online for the first time, the Microsoft Exchange System Attendant adds the Exchange virtual server name to the Exchange Domain Servers group. The Exchange System Attendant logs the following message to the Exchange event log:

```
Microsoft Exchange System Attendant has detected that the
local computer is not a member of group 'cn=Exchange
Domain Servers,cn=Users,dc=testdom,dc=net'. System
Attendant is going to add the local computer into the
group.
```

**Workaround:** This message can safely be ignored.

### Manually adding domain controller for a clustered Exchange Server results in error

If you are manually adding a domain controller or a configuration domain controller for a clustered Exchange Server, the Exchange System Manager gives the following error:

```
The format of the specified computer name is invalid.

Facility: Win32
ID no: c00704ba
Exchange System Manager
```

### Exchange routing group does not update

When Exchange users create or modify routing groups, the virtual Exchange servers are not updated with the new routing group information. In response to a WinRoute query, the virtual servers display their status as not connected to the routing group master.

**Workaround:** Take the Exchange service group offline and bring it online again every time you update routing groups. Doing so updates the virtual server with the new routing information. WinRoute queries, however, may still display the virtual server as not connected to the routing group master.

#### **VCS Configuration Wizard may fail to add nodes or reconfigure a cluster with an online Exchange service group**

If an Exchange service group is online in a cluster, the VCS Configuration Wizard may fail to add a node to the cluster or reconfigure the cluster. [263698]

**Workaround:** Take the Exchange service group offline and run the VCS Configuration Wizard to add the node.

#### **Resource for Exchange Information Store may take time to online**

If the Microsoft Exchange database is in an inconsistent state and the enterprise agent for Exchange attempts to bring the resource for Microsoft Exchange Information Store (IS) service online, the IS service runs a recovery on the Exchange database. This recovery may take considerable time, depending on the number of transaction logs to be replayed.

As a default behavior, the enterprise agent for Exchange waits in the Online entry point and returns only when the IS resource starts or when the start operation fails. When IS service is delayed, the enterprise agent for Exchange logs the following message:

```
The Information Store service is not yet started.  
It might be running recovery on the database.
```

In some cases, however, the IS service may not be running a recovery.

**Workaround:** If the IS service is stuck in the STARTING state, you can force the Online entry point to exit without waiting for IS service to start:

- 1 Open the Registry Editor.
- 2 From the navigation pane, go to  
\\HKEY\_LOCAL\_MACHINE\SOFTWARE\VERITAS\VCS\  
EXCHCONFIG\PARAMETERS\MSEXCHANGEIS.
- 3 On the Edit menu, select **New**, and then click **DWORD Value**.
- 4 Name the value *ForceExit*.
- 5 Right-click the value and select **Modify**.
- 6 In the Edit DWORD Value dialog box, specify the value data as '1'. Click **OK**.

When the Online routine detects this value in the registry, it exits without waiting for the IS resource to start.

---

**Note:** To restore the default behavior of the agent, set the *ForceExit* value to zero.

---

### Cluster operations fail if an Exchange service group is online in a secure cluster

If an Exchange service group is online on a node in a secure cluster, cluster operations using `ha` commands or Cluster Manager (Java Console) fail to execute on that node.

**Workaround:** Perform cluster operations on nodes where the Exchange service group is not online. For cluster operations specific to a node where the service group is online, use the `hasys` command and arguments.

### VCW is unable to add a new node to a secure cluster

Under certain conditions, such as when the node name is modified, VCW wizard is unable to add a new node to an existing secure cluster [623540]. This behavior is specifically observed in an Exchange environment. When the Exchange pre-installation completes the Exchange virtual server values are temporarily assigned to the node. All network connections to the node are made using the temporary name. After the pre-installation completes, the system is rebooted and the Symantec Product Authentication Service (`vrtsat`) reassigns the root credentials based on the new root domain (new virtual server name) in the Root Broker Hash file. However, post Exchange installation the system name is reassigned back to its actual physical name, and the root credentials used are reverted back to the original root domain (physical node name) which is not however updated in the Root Broker Hash file. Due to the ambiguous credentials the new node is unable to be added.

**Workaround:** When setting up and configuring Exchange, prior to renaming the Exchange Virtual Server (EVS) stop the Symantec Product Authentication Service (`vrtsat`) and change the startup mode to `manual` and then restart it. After the system name reverts back to the original name, set the `vrtsat` service back startup mode to `automatic`.

## SQL Configuration Wizard may configure an additional MSSearch resource while modifying service group

When removing a SnapMirror resource, the SQL Configuration Wizard may configure an additional MSSearch resource. [1128359] This behavior occurs when, after reaching the final summary page, a user clicks back to the service group selection page before completing the operation. The wizard removes the deselected SnapMirror resource, but it adds an additional MSSearch resource.

## Software fixes and enhancements

Fixed issues and software enhancement requests are referenced by incident number and described briefly below.

### Fixed issues and enhancements in 5.0 Release Update 1

[Table 1-3](#) describes fixed issues and software enhancements in this release update.

**Table 1-2** Fixed issues and enhancements in 5.0 Release Update 1

Incident Number	Description
1101865	Dynamic updates to DNS delete the main DNS server's entries
1096394	Ensure HAD communication is on a non-blocking socket
1077622	Spoolsv.exe service error on nodes with Windows 2003 SP2
1071916	hastop -local -force fails on non-English OS when in secure mode
1039744	High CPU usage on regrepmonitor.exe with 500+ print shares
1027045	VCS SQL Configuration Wizard fails when using 32-bit SQL 2005 on a 64-bit 2003 Server
1016719	Investigate memory leak in VCS and AT
1014750	Unable to switch a global service group to the remote cluster via the Cluster Management Console (CMC)
964973	Investigate licensing issue with VCS 5.0
899632	Unable to online multiple Lanman resources bound to a single IP resource on Windows 2003 x64
863043	IIS Configuration Wizard crashes if IIS is not installed.
701777	Unable to delete the snapmirror resource from SQL 2000 service group
613396	In a NetApp Filer configuration, the SQL user database backup and restore operations may fail
372014	File Share Wizard may create a resource with invalid permissions
264922	VCS Configuration Wizard may fail to add nodes to a cluster



## Fixed issues and enhancements in 5.0

[Table 1-3](#) describes other fixed issues and software enhancements in VCS 5.0 for NetApp SnapMirror.

**Table 1-3** Fixed issues and enhancements in 5.0

Incident Number	Description
509639	Support for NetApp SnapDrive 3.2
607416	The Exchange Configuration Wizard and the SQL Configuration Wizard configure the SnapDrive and SnapMirror resources such that the SnapDrive resource is the parent and the SnapMirror resource is the child. The SnapDrive resources depend on the SnapMirror resources.
515644	hacf does not handle MAXARG values of vector/associative attributes in the main.cf.
584243	hares options do not filter correctly.
426932	Indeterministic service thread cancellation.
271167	Provide finer control over the hastop -all command.
603107	SQL OLAP service fails to come online.
348647	Installation order of SQL Server 2005 affects MSSearch.
367950	Automatic Change Tracking of SQL 2005 catalogs prevents failover of service group.
310020	SQL Server 2005 resource may go into unknown state
312350	Error installing printer drivers.
765954	HAD may give warning message and fail to restart.
	The concurrency violation trigger cannot offline a service group if the group has an online parent on the system with local firm dependency.

## Documentation

Documentation is included on the Symantec software discs in Adobe Portable Document Format (PDF) in the directory `Docs\netapp_agent`. To view a document, explore the CD and double-click the file name.

- `VCS_AgentDev.pdf`, *VCS Agent Developer's Guide*
- `VCS_Admin.pdf`, *VCS Administrator's Guide*
- `VCS_BundledAgents.pdf`, *VCS Bundled Agents Reference Guide*
- `VCS_NetApp-Exch.pdf`, *VCS Implementation Guide for Microsoft Exchange with NetApp SnapMirror*
- `VCS_NetApp-Exch2007.pdf`, *VCS Implementation Guide for Microsoft Exchange 2007 with NetApp SnapMirror*
- `VCS_NetApp-SQL.pdf`, *VCS Implementation Guide for Microsoft SQL with NetApp SnapMirror*
- `VCS_NetApp-Oracle.pdf`, *VCS Implementation Guide for Oracle with NetApp SnapMirror*
- `VCS_NetApp_ReleaseNotes.pdf`, *VCS for NetApp SnapMirror Release Update 1 Release Notes*

## Commenting on documents

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