

# Veritas™ Cluster Server Release Notes

Linux for IBM System p

5.0



# Veritas Cluster Server Release Notes

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# Veritas Cluster Server Release Notes

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## Introduction

This document provides important information regarding Veritas Cluster Server (VCS) version 5.0 for Linux. Please review this entire document before installing VCS.

<http://entsupport.symantec.com/docs/285834>

## Features of Veritas Cluster Server

We offer the following features in this release of Veritas Cluster Server. See *Veritas Cluster Server User's Guide* for details.

### Cluster Management Console

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

VCS 5.0 lets you 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 User'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 one level is supported.

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

The 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 hastop command

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

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

## Fencing updates: DMP support

Dynamic multi-pathing (DMP) allows coordinator disks to take advantage of the path failover and the dynamic adding and removal capabilities of DMP. You can configure coordinator disks to use Veritas Volume Manager DMP feature.

You can set the coordinator disks to use either raw or DMP as the hardware path to a drive. See the *Veritas Cluster Server Installation 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.

## Veritas agents

VCS bundles agents to manage key resources used in the cluster. The implementation and configuration of bundled agents vary by platform.

See the *Veritas Cluster Server Bundled Agent Reference Guide*.

VCS also provides agents for the management of key enterprise applications.

In addition to the agents for enterprise applications provided with VCS, other agents are available through an independent Symantec offering called the Veritas Cluster Server Agent Pack. The agent pack includes the currently shipping agents and is re-released regularly to add new agents that are now under development.

Contact your Symantec sales representative for information about agents included in the agent pack, agents under development, and agents available through Symantec consulting services.

# System requirements

System requirements for VCS are as follows.

## Supported hardware

The compatibility list contains information about supported hardware and is updated regularly. For the latest information on supported hardware visit the following URL:

<http://support.veritas.com/docs/286819>

Before installing or upgrading Veritas Cluster Server, review the current compatibility list to confirm the compatibility of your hardware and software.

## Supported software for VCS cluster nodes

VCS operates on the following architectures and operating systems. Symantec supports only those kernel binaries distributed by Red Hat and SUSE.

Operating System	Kernel	Architecture
Red Hat Enterprise Linux 4 (RHEL 4) Update 3	2.6.9-34.EL 2.6.9-34.smp 2.6.9-34.hugemem	Linux PPC
SUSE Linux Enterprise Server 9 (SLES 9) with SP3	2.6.5-7.244 2.6.5-7.244-smp 2.6.5-7.244-bigsmpp	Linux PPC

- ext2, ext3, reiserfs, NFS, and bind on LVM2, Veritas Volume Manager (VxVM) 5.0, and raw disks
- Veritas Volume Manager (VxVM) 5.0 with Veritas File System (VxFS) 5.0

## Supported Linux operating system updates

Symantec products will operate on subsequent kernel and patch releases provided the operating systems maintain kernel ABI (application binary interface) compatibility.

Information about the latest supported Red Hat erratas and updates and SUSE service packs is available in the following TechNote.

## Supported software for Cluster Management 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.

When you set up a management server to manage multiple clusters, you can connect to the clusters directly or install the cluster connector on cluster nodes to enable connection across firewalls.

See “[Installing Veritas Cluster Management Console Management Server](#)” on page 10.

### Install Mode

Multi-cluster mode. To manage multiple clusters. Installed on a standalone system designated the *management server*.

### Supported software

- Solaris 8, 9, and 10, with patches indicated by Sun.
- Windows 2000 Server, Advanced Server, and Datacenter, with SP4 or patches as indicated by Microsoft.
- Windows Server 2003 Standard Edition, Datacenter Edition, Enterprise Edition, and Web Edition, with patches as indicated by Microsoft.

**Note:** Windows Management Instrumentation (WMI) must be installed on Windows 2003 systems prior to installing Cluster Management Console.

Single cluster mode. To manage a single cluster. Installed on cluster nodes.

You can install Cluster Management Console in this mode only with VCS 5.0 in a fresh install or upgrade scenario.

See “[Supported software for VCS cluster nodes](#)” on page 7.

## Supported browsers

Veritas Cluster Management Console is supported on the following browsers:

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

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



## Requirements for accessing Cluster Manager (Java Console)

The VCS Java Console requires a minimum of 256MB RAM and 1280x1024 display resolution. The color depth of the monitor must be at least 8-bit (256 colors), although 24-bit is recommended.

The minimum requirements for Windows clients are Pentium II, 300MHz, 256MB RAM, and 800x600 display resolution. (Symantec recommends a minimum of Pentium III, 400MHz, and 512MB RAM.) The color depth of the monitor must be at least 8-bit (256 colors), and the graphics card must be able to render 2D images.

## Installation notes

Refer to the *Veritas Cluster Server Installation Guide* for instructions on how to install VCS 5.0 and how to upgrade to VCS 5.0 from earlier versions of VCS. The Installation Guide is in the `cluster_server/docs` directory of the software disc.

The following information includes guidelines, tips, and other considerations for installing the product.

### Change default password after installing VCS

When you install and configure VCS, if you do not choose the secure mode, the `installvcs` program creates a user *admin* with the password *password*. The user has administrative privileges to the cluster.

Symantec recommends you change the password of the user after installing and configuring VCS.

### Network Console and crash dump facility (Netdump)

Symantec recommends installing and configuring the Netdump facility on all Red Hat and SUSE installations. The facility is not specifically for Symantec products, but we recommend it as good systems administration practice.

For information on Netdump installations for Red Hat systems, refer to: <http://www.redhat.com/support/wpapers/redhat/netdump/>

For information on Netdump installations for SUSE systems, refer to: `/usr/share/doc/packages/lkcdutils/README.SuSE`

## Installing Veritas Cluster Management Console Management Server

If you plan to set up a management server to administer your clusters, install the Veritas Cluster Management Console on a system outside of the managed clusters.

### To install Veritas Cluster Management Console

- 1 Go to <http://www.symantec.com/enterprise/products/index.jsp>.
- 2 In the **Product Finder** box, click **Select Product/Service** and selected **High Availability>Veritas Cluster Server**.
- 3 In the **Learn about this product** box, click **Trialware**.
- 4 Click Storage Foundation and High Availability Solutions.
- 5 On the Trialware Download page, click **Download Now**.
- 6 Accept the export restrictions agreement.

- 7 Enter your credentials or create a new user account.
- 8 On the **Software Download** page, click the link for **Storage Foundation and HA Solutions, Solaris, v5.0** to begin the download process.  
Note that the Solaris package contains installers for setting up a management server on Solaris or Windows systems.
- 9 After the download completes, extract the files.
- 10 Install the console by following the instructions in the *Veritas Cluster Server Installation Guide*. The guide is available in the cluster\_server/docs directory of the extracted image.

For information on administering clusters using the console, see the *Veritas Cluster Management Console Implementation Guide*.

## Known issues

The following issues are open for VCS version 5.0.

### Security configuration may not work if you use encrypted files

If you choose to configure security using the encrypted file during VCS installation, Authentication Service may not be configured successfully.

**Workaround:** To configure the cluster in secure mode using the encrypted files option, do the following:

- 1 Configure the cluster.
- 2 Enable security using `installvcs -security option`

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

### 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.

### Root broker name cannot use fully qualified domain name

When configuring security, VCS does not support specifying the fully qualified domain name (FQDN) for the root broker. You must ensure that the root broker can be looked up by its unqualified domain name. Make sure that your name resolution mechanism can resolve the host names of the Root Broker and all cluster nodes in either local (mysys) or fully-qualified (mysys.example.com) form. [617616]

### 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 the RUNNING state.

## The hagetcf script reports an error

Running the hagetcf script to gather information about the VCS cluster generates the following error:

```
tar: cannot stat ./var/VRTSvcs/log/*.A.log. Not dumped.
```

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

## Node cannot join cluster because port v is not ready for configuration

This behavior is observed when a node leaves a cluster and another node tries to join the cluster at the same time. If the GAB thread is stuck in another process, the new node cannot join the cluster and GAB logs the following warning:

```
GAB WARNING V-15-1-20126 Port v not ready for reconfiguration, will  
retry.
```

## The haclus -wait command hangs when cluster name is not specified

If you do not specify the cluster name when running the `haclus -wait` command, the `haclus -wait` command may hang. [612587]

## Using the coordinator attribute

This release contains an attribute for disk groups called `coordinator`, which configures disks as coordinator disks by the I/O fencing driver. Setting the attribute prevents the coordinator disks from being reassigned to other disk groups. See the Veritas Volume Manager documentation for additional information about the coordinator attribute.

The attribute requires that the disk group contain an odd number of disks. Symantec recommends that you use only three coordinator disks. Using more (five or seven) disks may result in different subclusters.

## VCS controlled mount fails, while manual mount of volume succeeds

Security-enhanced Linux must be disabled, because the Security-enhanced (SE) Linux support is provided for evaluation purposes only and the Security policy files are not currently available for the Veritas product stack. Problems such as the mount issue in the subject title can result when Security-enhanced Linux is enabled.

**Workaround:** To disable SE Linux at boot time on both SLES9 and RHEL4, set the kernel boot parameter `selinux` to 0 (`selinux=0`) and reboot the machine. Assuming the system has been configured for booting from the machine `machine_name`, edit the file `/boot/machine_name/menu.lst` to include `selinux=0` on the kernel line. Then reboot the machine to ensure the setting takes effect.

## Network interfaces change their names after reboot

On SUSE systems, network interfaces change their names after reboot even with `HOTPLUG_PCI_QUEUE_NIC_EVENTS=yes` and `MANDATORY_DEVICES="..."` set.

**Workaround:** Use `PERSISTENT_NAME= ethX` where `X` is the interface number for all interfaces.

## Unloading DiskRes driver requires a reboot on RHEL4

On systems running RHEL4, you must reboot a system after if you are upgrading or replacing the DiskRes driver.

## Issue with the vxesd daemon during installation

The Event Source Daemon (vxesd) currently holds a reference to the directory from which it was started. [621097]

**Workaround:** If you need to unmount the filesystem associated with this directory:

- 1 Stop the vxesd daemon.  

```
# vxddladm stop eventsource
```
- 2 Change the current working directory  

```
# cd /
```
- 3 Restart the vxesd daemon  

```
# vxddladm start eventsource
```

## Performance issues with LLT over UDP

### Slow performance of LLT over UDP if a link goes down

If LLT is configured over UDP and a link goes down, then you may encounter severe degradation in the performance over the remaining link.

**Workaround:** On all nodes in the cluster, set the LLT window size to small values. The default value is 400. Setting it to 100 can bring the performance close to normal.

To set window limit add this line in `/etc/llttab`:

```
set-flow                               window:100
```

To change at runtime use `lltconfig(1m)`

```
$ lltconfig -F window:100
```

### Slow performance of LLT over UDP on SLES 9

LLT over UDP requires properly assigned IP addresses for the Ethernet interfaces used for the LLT private links. Using `ifconfig` to set up the IP addresses for Ethernet interfaces may not be reliable on SLES 9.

**Workaround:** The issue is not observed when IP addresses are set using YaST or YaST2.

---

**Note:** LLT over UDP might give problems on Red Hat Enterprise Linux. The systems might keep logging warnings, CPU usage might increase and the systems might hang.

---

## Unmount fails while taking service group offline

A known issue in Red Hat Enterprise Linux 4 could cause unmount to fail. When an NFS client does some heavy I/O, unmounting a resource in the NFS service group may fail while taking the service group offline. Refer to bugzilla id 154387 for more information.

## Segmentation fault occurs if UTF8 encoding is used

The `halog` command results in a core dump if utf8 encoding is used.

For example, if you issue the command:

```
# $VCS_HOME/bin/halog -add "test debug msg" -dbg 1 -sys -msgid  
10000 -encoding utf8 -parameters "test"
```

The following error occurs:

```
Unknown trailer  
Segmentation fault (core dumped)
```

Make sure you specify the encoding as utf-8.

## 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 fencing

### Preexisting split brain after rebooting nodes (609407)

The fencing driver in 5.0 uses Veritas DMP to handle SCSI commands to the disk driver if fencing is configured in *dmp* mode. This allows fencing to use Veritas DMP for access to the coordinator disks. With certain disk arrays, when paths are failed over due to a path failure, the SCSI-3 persistent reservation keys for the previously active paths are not removed. If the nodes in a cluster are all rebooted at the same time, then the cluster will not start due to a "Preexisting split brain" message.

**Workaround:** Use the `vxfcntlclearpre` script to remove the keys from the coordinator disks as well as from the data disks.

### Stopping vxfen when the fencing module is being configured

Trying to stop the vxfen driver when the fencing module is being configured results in the following error.

```
VCS FEN vxfenconfig ERROR V-11-2-1013 Unable to unconfigure vxfen
VCS FEN vxfenconfig ERROR V-11-2-1022 Active cluster is currently
fencing.
```

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

### Fencing configuration fails if fencing module is running on another node

The `vxfenconfig -c` command fails if any of the following commands are running on other nodes in the cluster:

```
vxfenconfig -U
vxfenconfig -c
```

### Some vxfenadm options do not work with DMP paths

Some options of the vxfenadm utility do not work well with DMP paths such as `/dev/vx/rdmp/sdt3`.

**Workaround:** Use the `-a` option to register keys instead of `-m` option for DMP paths.

## Issues related to VCS bundled agents

### Problem in failing over the IP resource

When a system panics, the IP address remains plumbed to the system for a while. In such a case, VCS may not succeed in failing over the IP resource to another system. This can be observed when a system panics during I/O Fencing.

**Workaround:** Increase the value of the `OnlineRetryLimit` attribute for the IP resource type.

### Notifier agent becomes unstable if multiple entries are used for SmtplibRecipients

If you set multiple recipients using the `SmtplibRecipients`, the Notifier agent may become unstable. [617965]

### DiskReservation might fault Mount resources

When the `DiskReservation` resource is brought online, the agent also does a `BLKRRPART ioctl` on the disks. This causes the block subsystem to see new block devices. Consequently, the OS launches the block hotplug agent to handle the events. The hotplug agent, as part of its work, unmounts any stale entries.

Because the hotplug agents are asynchronous, it is difficult to find whether all the hotplug agents have finished processing. So, the `DiskReservation` resource goes `ONLINE` even while the hotplug agents are running, which is fine with SCSI reservation as the disks are reserved. However, when the `DiskReservation` resource goes `ONLINE`, a dependent `Mount` resource could also come up. And it is possible that the hotplug agent does its unmount *after* the `Mount` agent does its mount and a monitor cycle. If the `Monitor` entry point of the `Mount` resource is called after the unmount, VCS will never see the `Mount` resource as online. If the `Monitor` is called before the unmount, the resource goes `ONLINE`, and then in the next `Monitor` cycle, goes to `FAULTED` state.

**Workaround:** To avoid this, the `DiskReservation` agent is hard coded so that the `Monitor` entry point of the `DiskReservation` resource is called `HOTPLUG_DELAY` seconds after the `Online` entry point of the `DiskReservation` resource completes. `HOTPLUG_DELAY` is hard-coded to 5 seconds so that the first monitor happens 5 seconds after the `DiskReservation` resource is brought online.

If the hotplug agent cannot complete within the default `HOTPLUG_DELAY` time, set the `OnlineRetryLimit` and `RestartLimit` of the `Mount` type to 1.

## **NFS Lock recovery is not supported on RHEL4 and SLES9**

For more information, refer to the following bugzillas/issues:

- RHEL4: issue 79602
- SLES9: bugzilla 148009

## **No support for NFSv4 on SLES9**

VCS does not support NFS v4 on SLES9.

## **NFS cannot handle minor number greater than 255**

NFS cannot handle minor numbers greater than 255.[143897]

**Workaround:** Ensure that minor number of the VxVM diskgroup is not greater than 255.

## **The NFS security feature of RHEL4/SLES9 does not work in a VCS environment.**

The NFSSecurity attribute is reserved for future use.

## Issues related to Cluster Manager (Java Console)

### Cluster Manager (Java Console) hangs on Linux

The Cluster Monitor may hang while adding a new cluster panel and may fail to refresh the GUI. [527301]

**Workaround:** Kill the VCSGui process and restart the 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.

### Java Console errors in a localized environment

When connected to cluster systems using locales other than English, the Java Console does not allow importing resource types or loading templates from localized directories. [585532]

**Workaround:** The workaround is to copy the types files or templates to directories with english names and then perform the operation.

### Printing to file from the VCS Java Console throws exception

VCS Java Console and Help throw an exception while printing to a file from a system that does not have a printer configured. Also, the content is not written to the file.

**Workaround:** Before printing, make sure at least one printer is configured on the system where the VCS Java Console is launched.

## Issues related to VCS Simulator

### Importing resource types fails on Simulator on Windows systems

When you try to import a resource type, the following error is displayed [616580]:

```
This application has failed to start because MFC70U.DLL was not found. Re-installing the application may fix this problem.
```

**Workaround:** Do not use the file browser to select the .cf file. Enter the fully qualified path of the file in the File Name field.

### Simulator does not stop in some situations (598476)

If you have a service group with the name ClusterService online on the last running node on the cluster, then the `hasim -stop` command appears to hang. [598476]

**Workaround:** Take the ClusterService group offline before running the `hasim -stop` command.

## Issues related to Cluster Management Console

### Install scripts not copied to cluster nodes

When you install VCS, the scripts to install and remove cluster connector are not installed on cluster nodes. [847885]

**Workaround:** Run the scripts to install and remove cluster connector from the installer media. The `installcmc` script is located the following path on the disc:

```
/cluster_management_console/installcmc.
```

### Remote configuration of cluster connector fails

Installing the cluster connector from a remote system fails. [847746]

**Workaround:** Run the `vssat setuptrust` command to manually set up trust between the two authentication brokers. For example to establish trust between the authentication brokers:

```
/opt/VRTSat/bin/vssat setuptrust --broker <SYS2> --securitylevel high --hash <ROOT HASH FROM SYS2>.
```

To retrieve the root hash:

```
/opt/VRTSat/bin/vssat showbrokerhash
```

## Cluster connector installation requires Symantec Product Authentication Service 4.3.x

You must install cluster connector from a system that has Symantec Product Authentication Service 4.3.x, or at least the authentication broker installed. You can also install cluster connector from a cluster node, provided that you are installing cluster connector on nodes that are part of the same cluster. [611353]

## Cluster Management Console controls not immediately active

In some versions of Internet Explorer, you may need to click a GUI control (buttons, drop-down menus, radio buttons, and so on) once before the control becomes active. [603415]

This happens only with flash screens, pop-ups or wizards. Controls that require this activating click show the following message when you roll over them with your mouse pointer:

```
Press SpaceBar or Click to activate this Control
```

## Login screen may not display after inactivity timeout

If your Cluster Management Console is inactive and the session times out, your next action in the console should return you to the login screen. However, if your next action is to request a sort or a new page, the console does not sort the data or load the page.

**Workaround:** Use the browser refresh feature to display the login screen.

# Documentation Errata

The *Veritas Cluster Server Bundled Agents Reference Guide* provides incorrect information about the FSType attribute associated with the Mount agent. FSType is a required attribute and has no default value associated with it.

# Software limitations

The following limitations apply to this release.

## System names in VCS

Systems specified in the VCS configuration file, `main.cf`, and in the files `/etc/nodename` and `/etc/llhosts`, must be consistent. The names cannot include periods and thus must not be in the fully qualified form. If you create the file `/etc/VRTSvcs/conf/sysname` to contain system names used by `main.cf`, VCS uses the file to verify the names.

## Systems in a cluster must have same system locale setting

VCS does not support clustering of systems with different system locales. All systems in a cluster must be set to the same locale.

## No support for NIC names larger than 8 characters

VCS does not support NIC names that are longer than eight characters. [605163]

## GAB panics the systems while VCS gets diagnostic data

On receiving a SIGABRT signal from GAB, VCS engine forks off `vcs_diag` script. When VCS engine fails to heartbeat with GAB, often due to heavy load on the system, the `vcs_diag` script does a `sys req` to dump the stack trace of all processes in the system to collect diagnostic information. The dump of stack trace is intended to give useful information for finding out which processes puts heavy load. However, the dumping puts extra load on the system that causes GAB to panic the system in such heavy loads. See *VERITAS Cluster Server User's Guide* for more information.

**Workaround:** Disable the `vcs_diag` script. To disable, rename the file `/opt/VRTSvcs/bin/vcs_diag` to `/opt/VRTSvcs/bin/vcs_diag.backup`.

## Using agents in NIS

Programs using networked services (for example, NIS, NFS, RPC, or a TCP socket connection to a remote host) can hang if the host is disconnected from the network. If such a program is used as an agent entry point, a network disconnect can cause the entry point to hang and possibly time out. For example, if the host is configured to use NIS maps as a client, basic commands such as `ps -ef` can hang if there is network disconnect. Symantec recommends creating users locally and configuring `/etc/nsswitch.conf` to reflect local users.

## Manually removing VRTSat package erases user credentials

Symantec recommends saving user credentials before manually removing the VRTSat package. If you need the credentials again, you can restore them to their original locations.

### To save user credentials

- 1 Run the `vssat showbackuplist` command. The command displays the data files and backs them up into the SnapShot directory `/var/VRTSatSnapShot`. Output resembles the following:

```
# vssat showbackuplist
B| /var/VRTSat/.VRTSat/profile/VRTSatlocal.conf
B| /var/VRTSat/.VRTSat/profile/certstore
B| /var/VRTSat/RBAAuthSource
B| /var/VRTSat/ABAAuthSource
B| /etc/vx/vss/VRTSat.conf
Quiescing ...
Snapshot Directory :/var/VRTSatSnapShot
```

- 2 Move the credentials to a safe location. Preserving the directory structure makes restoring the files easier.

### To restore user credentials

- 1 Navigate to the SnapShot directory or the safe location where you previously saved credentials:

```
cd /var/VRTSatSnapShot/profile
```

- 2 Restore the files:

```
cp ABAAuthSource /var/VRTSat/
cp RBAAuthSource /var/VRTSat/
cp VRTSat.conf /etc/vx/vss
cd /var/VRTSatSnapShot/
cp -r profile /var/VRTSat/.VRTSat
```



## Using the KDE desktop

Some menus and dialog boxes on Cluster Manager (Java Console) may appear misaligned or incorrectly sized on a KDE desktop. To ensure the proper appearance and functionality of the console on a KDE desktop, use the Sawfish window manager. You must explicitly select the Sawfish window manager even if it is supposed to appear as the default window manager on a KDE desktop.

## NFS locking

Due to RHEL 4 Update 2, update 3, and SLES 9 SP3 issues, lock recovery is not yet supported. Refer to issue 73985 for RHEL issues and bugzilla id 64901 for SLES 9 issues.

## System reboot after panic

If the VCS kernel module issues a system panic, a system reboot is required. The supported Linux kernels do not automatically halt (CPU) processing. Set the Linux “panic” kernel parameter to a value other than zero to forcibly reboot the system. Append the following two lines at the end of the `/etc/sysctl.conf` file:

```
# force a reboot after 60 seconds
kernel.panic = 60
```

## Bundled agent limitations

### Volume agent clean may forcibly stop volume resources

When the attribute `FaultOnMonitorTimeouts` calls the Volume agent `clean` entry point after a monitor time-out, the `vxvol -f stop` command is also issued. This command forcibly stops all volumes, even if they are still mounted.

### NFS failover

This issue occurs on SLES 9 systems.

If the NFS share is exported to the world (\*) and the NFS server fails over, NFS client displays “Permission denied” error.

**Workaround:** To resolve this problem on SLES 9 systems, upgrade `nfs-utils` to the package version `nfs-utils-1.0.6-103.28`.

### False concurrency violation when using PidFiles to monitor application resources

The PID files created by an application contain the PIDs for the processes that are monitored by Application agent. These files continue to exist even after a node running the application crashes. On restarting the node, the operating system may assign the PIDs listed in the PID files to other processes running on the node.

Thus, if the Application agent monitors the resource using the `PidFiles` attribute *only*, the agent may discover the processes running and report a false concurrency violation. This could result in some processes being killed that are not under VCS control.

### Networking agents do not support IPv6 protocol

The bundled IP, NIC, IPMultiNIC, MultiNICA, IPMultiNICB, and MultiNICB agents for VCS 5.0 do not support the IPv6 enhanced IP protocol.

### VCS does not provide a bundled agent for volume sets

VCS 5.0 does not provide a bundled agent to detect Volume Manager volume sets. Problems with volumes and volume sets can only be detected at the `DiskGroup` and `Mount` resource levels.

**Workaround:** Set `StartVolumes` and `StopVolumes` attributes of the `DiskGroup` resource that contains volume set to 1. If a file system is created on the volume set, use a `Mount` resource to mount the volume set.

## Mount agent

The Mount agent mounts a block device at only one mount point on a system. After a block device is mounted, the agent cannot mount another device at the same mount point.

## Share agent

To ensure proper monitoring by the Share agent, verify that the `/var/lib/nfs/etab` file is clear upon system reboot. Clients in the Share agent must be specified as fully qualified host names to ensure seamless failover.

## Driver requirements for DiskReservation agent

The DiskReservation agent has a reserver module in the kernel mode that reserves disks persistently. Any driver that works correctly with the `scsiutil` utility shipped with the VRTSvcsdr package is supported. Refer to the manual page for `scsiutil` functionality.

## Cluster Manager (Java console) limitations

### Use the VCS 5.0 Java Console to manage clusters

Cluster Manager (Java Console) from previous VCS versions cannot be used to manage VCS 5.0 clusters. Symantec recommends using the latest version of Cluster Manager. See the *Veritas Cluster Server 5.0 Installation Guide* for instructions on upgrading Cluster Manager.

### Run Java Console on a non-cluster system

Symantec recommends not running Cluster Manager (Java Console) for an extended period on a system in the cluster. The Solaris version of the Java Virtual Machine has a memory leak that can gradually consume the host system's swap space. This leak does not occur on Windows systems.

### Cluster Manager and wizards do not work if the hosts file contains IPv6 entries

VCS Cluster Manager and Wizards fail to connect to the VCS engine if the `/etc/hosts` file contains IPv6 entries.

**Workaround:** Remove IPv6 entries from the `/etc/hosts` file.

### **VCS Simulator does not support I/O fencing**

When running the Simulator, be sure the UseFence attribute is set to the default, "None."

### **Undocumented commands, command options, and libraries**

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

# Documentation

Product guides are available on the documentation disc in PDF and HTML formats. We recommend copying pertinent information, such as installation guides and release notes, from the disc to your system directory `/opt/VRTS/docs` for reference.

## VCS 5.0 documentation set

VCS 5.0 includes the following documents.

Title	File Name
<i>Veritas Cluster Server Installation Guide</i>	<code>vcs_install.pdf</code>
<i>Veritas Cluster Server Release Notes</i>	<code>vcs_notes.pdf</code>
<i>Veritas Cluster Server User's Guide</i>	<code>vcs_users.pdf</code>
<i>Veritas Cluster Server Bundled Agents Reference Guide</i>	<code>vcs_bundled_agents.pdf</code>
<i>Veritas Cluster Server Agent Developer's Guide</i>	<code>vcs_agent_dev.pdf</code>

The manual pages for `VRTSvcs` are installed in `/opt/VRTS/man`. Manual pages are divided into sections 1, 1m, 3n, and 4. Edit the `man(1)` configuration file `/etc/man.config` to view these pages.

### To edit the `man(1)` configuration file

- 1 If you use the `man` command to access manual pages, set `LC_ALL` to "C" in your shell to ensure that the pages are displayed correctly.

```
# export LC_ALL=C
```

See incident 82099 on the Red Hat Linux support website for more information.

- 2 Add the following line to `/etc/man.config`:

```
MANPATH /opt/VRTS/man
```

where other man paths are specified in the configuration file.

- 3 Add new section numbers. Change the line:

```
MANSECT      1:8:2:3:4:5:6:7:9:tcl:n:l:p:o
```

to

```
MANSECT      1:8:2:3:4:5:6:7:9:tcl:n:l:p:o:3n:1m
```

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## Java 2 Runtime Environment

## Java Access Bridge

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