

# Symantec™ Storage Foundation and High Availability Solutions Getting Started Guide

Linux for IBM System p

5.0

# Symantec Storage Foundation and High Availability Solutions

## Getting Started Guide

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Storage Foundation and High Availability Solutions 5.0

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## Licensing and registration

Veritas Storage Foundation and High Availability Solutions are licensed products. See the product installation guides for information on product licensing and license installation instructions.

## Technical support

For technical assistance, visit [http://www.symantec.com/enterprise/support/assistance\\_care.jsp](http://www.symantec.com/enterprise/support/assistance_care.jsp). Select a product to use the Knowledge Base Search feature to access resources such as TechNotes, product alerts, software downloads, hardware compatibility lists, and the customer email notification service. If you encounter an error when using a product, include the error number preceding the message when contacting Technical Services. You can also use the error number to search for information in TechNotes or documents on the website.



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# Getting Started

## Storage Foundation and High Availability Solutions

Veritas Storage Foundation and High Availability Solutions are a group of products used for enterprise data management and protection, failover and high availability, and backup applications. This guide provides an overview of the products in this release and the contents of the product software discs. It also explains how to obtain a product license and describes the methods for installing Veritas products.

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**Note:** A PDF version of this guide ([getting\\_started.pdf](#)) is available at the top level of each Storage Foundation and High Availability Solutions product software disc. Before you install any Veritas product, read this entire document.

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Veritas Storage Foundation and High Availability Solutions includes the following products. After reading the licensing and installation methods sections, go to the indicated page for product information.

- [Veritas Cluster Server](#) on page 23
- [Veritas Storage Foundation](#) on page 24 (includes Veritas File System and Veritas Volume Manager)
- [Veritas Storage Foundation for Sybase](#) on page 26

## What's included

To familiarize yourself with a Veritas product and its installation procedure, do the following:

- Read “[How to license Symantec products](#)” on page 9. You must obtain a license key before installing any Veritas product.
- Read “[Installation methods](#)” on page 12 for instructions on installing your Veritas product.
- The Symantec products contained in this kit are listed under “[Storage Foundation and High Availability Solutions](#)” on page 7. Go to the section describing your product to find the location of the product release notes and installation guide. Read the release notes and installation guide before installing a product.
- Review “[Known issues](#)” on page 32 before installing any product for information on software issues that may affect all products in this release.
- Read “[Additional product information](#)” on page 21 for a description of other features in the Storage Foundation and High Availability Solutions product kit.

## How to license Symantec products

To register and receive a software license key, go to the Symantec Licensing Portal at the following location:

<https://licensing.symantec.com>

Make sure you have your Software Product License document. You need information in this document to retrieve and manage license keys for your Symantec product. After you receive the license key, you can install the product.

Click the Help link at this site to access the *License Portal User Guide* and FAQ.

## Operating system requirements

The Veritas 5.0 release operates on the architectures and operating systems listed below. Veritas supports only those kernel binaries distributed by Red Hat and SUSE:

- Red Hat Enterprise Linux 4 (RHEL 4) with Update 3 or 4 (2.6.9-34, 42 kernels) on IBM System p servers (using IBM POWER5 processors).
- SUSE Linux Enterprise Server 9 (SLES 9) with SP3 (2.6.5-7.244, 252, 276 kernels) on IBM System p servers (using IBM POWER5 processors).

---

**Note:** If your system is running an older version of Red Hat Enterprise Linux or SUSE Linux Enterprise Server, you must upgrade it before installing Veritas software. Consult the Red Hat or SUSE documentation for information on

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Veritas 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. Read this TechNote *before* installing any Veritas product.

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

## Software disc contents

The Veritas Storage Foundation and High Availability Solutions media kit includes multiple software discs. The contents of each disc is shown on the disc label.

The location of the installation guide and release notes for each product is given in the corresponding product sections listed under “[Storage Foundation and High Availability Solutions](#)” on page 7. Read the installation guide and release notes for your product before beginning an installation procedure.

---

**Note:** You can install only the Symantec software products for which you have purchased a license, even though other products are included on the enclosed software discs.

---

Veritas Disc	Contents
Product disc	Veritas Cluster Server Veritas Cluster Server Central Management Console Veritas Storage Foundation (includes Veritas File System and Veritas Volume Manager) Veritas Storage Foundation for Sybase
Documentation disc	The Veritas documentation disc provides searchable, HTML documentation for each product in this release. All documentation is organized by product groups. Printable PDF documents are also included on the disc under the product directories. You can view and print selected PDF files using Acrobat Reader.  If you insert the documentation disc in a Microsoft Windows system drive, the autorun feature displays the page with information on how to search. To use the documentation disc on a Linux system, mount the disc (see <a href="#">Mounting a software disc</a> on page 12). Review the documentation disc README in the top-level directory.
Maintenance Pack disc	<b>Note:</b> Not available in every release.  If you have a Veritas Storage Foundation and High Availability Solutions maintenance release, the kit contains a disc with software patches or updated packages. After installing the product, mount the maintenance software disc. Read the Maintenance Pack Getting Started Guide ( <code>mp_getting_started.pdf</code> at the top level of the disc) to direct you to the appropriate product directory and release notes for upgrade instructions.

---

## Mounting a software disc

Veritas software is provided on a DVD format disc.

### To mount the software disc

- 1 Log in as superuser.
- 2 Place the Veritas software disc into a DVD drive connected to your system.
- 3 After inserting the software disc, type the following command:  

```
# mount -o ro /dev/cdrom /media/cdrom
```
- 4 Change to the appropriate Linux distribution directory and product subdirectory to view the product release notes and installation guides.

## Installation methods

There are two ways to install Veritas products:

- Using the product installer
- Invoking product installation scripts from the command line

See the product installation guides for information on the other installation methods.

---

**Note:** Do not make `/opt` a VxFS file system.

---

There are also two installation modes:

- Single node local
- Multiple remote target systems

You install products remotely using SSH or RSH. For shell configuration information, see “[Configuring SSH or RSH before installing products](#)” on page 27.

## Using the product installer

The product installer displays a menu that simplifies the selection of installation and upgrade options. It is the recommended installation method. Selecting a product to install or upgrade from the menu invokes that product's installation script.

---

**Note:** If you are using the Veritas Enterprise Administrator (VEA) GUI on your system, stop the VEA service before performing a new installation, an uninstall, or an upgrade. To stop the VEA service, on each system type the following command:

```
# /opt/VRTS/bin/vxsvcctl stop
```

---

### To use the product installer

- 1 Locate the name of the product to install on the product software disc. Insert the disc into a drive attached to your system and mount it (see [Mounting a software disc](#) on page 12).
- 2 To change to the `cdrom` directory, type the following command:  

```
# cd /mountpoint/cdrom
```
- 3 From the `cdrom` directory, do one of the following. To invoke the installer script using SSH (recommended), type the following command:  

```
# ./installer
```

To invoke the installer script using RSH, type the following command:  

```
# ./installer -rsh
```

- 4 The product installer displays a list of products and their installation and licensing status as shown in the example below. A list of tasks to perform follows the product status:

```
Storage Foundation and High Availability Solutions 5.0

Symantec Product                Version Installed  Licensed
-----
Veritas Cluster Server          no                no
Veritas File System             no                no
Veritas Volume Manager          no                no
Veritas Storage Foundation      no                no
Veritas Storage Foundation for Sybase no                no

I) Install/Upgrade a Product    C) Configure an Installed Product
L) License a Product            P) Perform a Preinstallation Check
U) Uninstall a Product          D) View a Product Description
Q) Quit                          ?) Help
```

Enter a Task: [I,C,L,P,U,D,Q,?] i

Select a task. Enter (?) to display option descriptions.

It is highly recommended that you run the preinstallation check for all systems before installing a product.

- 5 If you select I, the list of products and options to install is displayed:

```
Storage Foundation and High Availability Solutions 5.0
1) Veritas Cluster Server
2) Veritas Storage Foundation
3) Veritas Storage Foundation for Sybase
4) Veritas Cluster Management Console
5) Web Server for Storage Foundation Host Management
b) Back to previous menu

Select a product to install: [1-5,b,q] q
```

Select **“b”** (“back”) to return to a previous section of an installation procedure. This feature is context-sensitive, so it returns to the beginning of a grouped section of questions. If an installation procedure hangs, use **Control-c** to stop and exit the program.

- 6 Enter the number of the product to install and press Return. Follow the instructions described in your product installation guide.

## Installation options

The installer provides three installation options:

- Install required packages
- Install required and optional packages
- Install additional packages to allow easy upgrade to higher product level

### **Install required packages**

This option installs only the packages required to operate the licensed product.

### **Install required and optional packages**

This option also installs optional packages, such as documentation and client features, that are not required to operate the licensed product.

### **Install additional packages**

This option installs all packages of higher product level. For example, if you install Storage Foundation for Oracle, you can install additional packages for Storage Foundation for Oracle RAC. This enables you to upgrade simply by entering an additional product license key. Even though the extra packages are installed, only the selected product and its licensed options are configured. This is the default option.

## Command line installation

You can also install Veritas products by running the following installation scripts from the command line:

<code>installfs</code>	Veritas File System
<code>installsf</code>	Veritas Storage Foundation
<code>installsfsyb</code>	Veritas Storage Foundation for Sybase
<code>installvcs</code>	Veritas Cluster Server
<code>installvm</code>	Veritas Volume Manager

Before you begin an installation using a command-line script, read the product release notes and installation guide.

## Command line options

Table 3-1 lists the options available when using the product installation script. Installation script command usage takes the following form:

```
installation_script [ system1 system2... ] [ options ]
```

*installation\_script* can be any product installation script or the product installer. For an initial install or upgrade, options are not typically required.

**Table 3-1** Product installer command line options

Command Line Option	Function
<i>system1 system2...</i>	Specifies the systems on which to run the installation options. A system name is required for all options. If not specified, the command prompts for a system name.
-configure	Configures the product after installing using the -installonly option.
-enckeyfile <i>encryption_key_file</i>	See the -responsefile and the -encrypt options.
-encrypt <i>password</i>	Encrypts <i>password</i> using the encryption key provided with the -enckeyfile option so that the encrypted password can be stored in response files.
-installpkgs	Displays all product packages in correct installation order. Output can be used to create scripts for command line installs, or for installations over a network. See the requiredpkgs option.
-installonly	Installs packages, but does not configure the product.
-keyfile <i>ssh_key_file</i>	Specifies a key file for secure shell (SSH) installs. This option passes -i <i>ssh_key_file</i> to every SSH invocation.
-license	Registers or updates product licenses on the specified systems.
-logpath <i>log_path</i>	Specifies a directory other than /opt/VRTS/install/logs as the location where installer log files, summary files, and response files are saved.
-noextrapkgs	Additional packages can be installed so that you can upgrade to another Symantec product simply by installing a new license. The -noextrapkgs option bypasses installation of extra product packages to simplify future maintenance updates.

**Table 3-1** Product installer command line options

Command Line Option	Function
-nolic	Allows installation of product packages without entering a license key. Licensed features cannot be configured, started, or used when this option is specified.
-nooptionalpkgs	Bypasses installation of optional product packages such as user documentation and manual pages.
-nostart	Bypasses startup of the product following installation and configuration.
-patchpath <i>patch_path</i>	Designates the path of a directory that contains all patches to install. The directory is typically an NFS-mounted location and must be accessible all specified installation systems.
-pkgpath <i>package_path</i>	Designates the path of a directory that contains all packages to install. The directory is typically an NFS-mounted location and must be accessible all specified installation systems.
-precheck	Performs a preinstallation check to determine if systems meet all installation requirements. Symantec recommends doing a precheck before installing a product.
-requiredpkgs	Displays all required product packages in correct installation order. Optional packages are not listed. Output can be used to create scripts for command line installs, or for installations over a network. See <code>installpkgs</code> option.
-responsefile <i>response_file</i> [-enckeyfile <i>encryption_key_file</i> ]	Automates installation and configuration by using system and configuration information stored in a specified file instead of prompting for information. The <i>response_file</i> must be a full path name. If not specified, the response file is automatically generated as <code>installerer.number.response.number</code> is random. You must edit the response file to use it for subsequent installations. Variable field definitions are defined within the file.  The <code>-enckeyfile</code> option and <i>encryption_key_file</i> name are required with the <code>-responsefile</code> option when the response file contains encrypted passwords.

**Table 3-1** Product installer command line options

Command Line Option	Function
<code>-rootpath <i>root_path</i></code>	<p>Specifies an alternative root directory on which to install packages.</p> <p>On Solaris operating systems, <code>-rootpath</code> passes <code>-R path</code> to <code>pkgadd</code>.</p> <p>On HP-UX operating systems, <code>-rootpath</code> passes <code>-I path</code> to <code>swinstall</code>.</p> <p>The <code>-rootpath</code> option is not supported on AIX or Linux operating systems.</p>
<code>-rsh</code>	<p>Specify this option when you want to use RSH and RCP for communication between systems instead of the default SSH and SCP. The <code>-rsh</code> option requires that systems be preconfigured so that commands between systems execute without prompting for passwords or confirmations.</p>
<code>-tmppath <i>tmp_path</i></code>	<p>Specifies a directory other than <code>/var/tmp</code> as the working directory for the installation scripts. This destination is where initial logging is performed and where packages are copied on remote systems before installation.</p>

## Log files

After every product installation, the installer creates three text files:

- Installation log file
- Response file
- Summary file

The name and location of each file is displayed at the end of a product installation, and are always located in the `/opt/VRTS/install/logs` directory. It is recommended that you keep the files for auditing, debugging, and future use.

### Using the installation log file

The installation log file contains all commands executed during the procedure, their output, and errors generated by the commands. This file is for debugging installation problems and can be used for analysis by Veritas Support.

### **Using the response file**

The response file contains the configuration information that you entered during the procedure. You can use the response file for future installation procedures by invoking an installation script with the `responsefile` option. The response file passes arguments to the script to automate the installation of that product. You can edit the file to automate installation and configuration of additional systems.

### **Using the summary file**

The summary file contains the output of the product installation scripts. This file shows the products that were installed, the location of the log and response files related to a particular installation, and messages displayed at the end of installation. You can use the summary file to prepare for running Veritas software following installation.

## Additional product information

The following sections contain important information about Veritas Storage Foundation and High Availability Solutions products.

### Locating and displaying documentation

Symantec documents are in Adobe Portable Document Format (PDF) on the enclosed discs. You can access product documentation in the following ways:

- Mount the appropriate product software disc and go to the *product\_name/release\_notes* for release notes or the *product\_name/docs* directory for installation guides.

---

**Note:** Release notes and installation guides are not installed with the documentation packages. Symantec recommends that you copy them to the */opt/VRTS/docs* directory so that they are available for future reference.

---

- After a product documentation package is installed, access the user and administration guides under the */opt/VRTS/docs* directory.
- Mount the “[Documentation disc](#),” which contains all product guides and release notes.

### Documentation feedback

Email comments about this guide to:  
[sf\\_docs@symantec.com](mailto:sf_docs@symantec.com).

## About Veritas products by Symantec

The following sections describe the products and component software available in this Veritas Storage Foundation and High Availability Solutions release.

### Component software

#### **Cluster Management Console**

The Veritas Cluster Server Cluster Management Console enables administration and analysis of all clusters in an enterprise from a single console using any supported web browser. Review the following guide for installation information:

*[distribution/cluster\\_server/docs/vcs\\_install.pdf](#)*

#### **Web Server for Storage Foundation Host Management**

Web Server for Storage Foundation Host Management provides web-based management capabilities for Storage Foundation products. After installing the web server, you can remotely administer Storage Foundation products without requiring a client-side installation.

## Veritas Cluster Server

Before you install this product, review “[Mounting a software disc](#)” on page 12 and “[Installation methods](#)” on page 12.

### Installation overview

Before you start the installation, read the Cluster Server release notes and installation guide:

- *distribution/cluster\_server/release\_notes/vcs\_notes.pdf*
- *distribution/cluster\_server/docs/vcs\_install.pdf*

---

**Note:** Cluster Server is included in all Veritas high availability (HA) products. If you have purchased a Veritas product suite that includes Cluster Server, it is installed and updated as part of that product suite. Do not install or update it as an individual component.

---

### About this product

Veritas Cluster Server by Symantec (VCS) is an open systems clustering solution that eliminates downtime, facilitates server consolidation and failover, and effectively manages a wide range of applications in heterogeneous environments.

## Veritas Storage Foundation

Before you install this product, review “[Mounting a software disc](#)” on page 12 and “[Installation methods](#)” on page 12.

### Installation overview

Before you start the installation, read the component product release notes and installation guides:

- *distribution/storage\_foundation/release\_notes/sf\_notes.pdf*
- *distribution/storage\_foundation/docs/sf\_install.pdf*
- *distribution/storage\_foundation/release\_notes/vcs\_notes.pdf* (for HA installations)
- *distribution/storage\_foundation/docs/vcs\_install.pdf* (for HA installations)

### About this product

Veritas Storage Foundation by Symantec includes Veritas File System by Symantec (VxFS) and Veritas Volume Manager by Symantec (VxVM) with varying feature levels.

Veritas File System is a high performance journaling file system that provides easy management and quick-recovery for applications. Veritas File System delivers scalable performance, continuous availability, increased I/O throughput, and structural integrity.

Veritas Volume Manager removes the physical limitations of disk storage so that you can configure, share, manage, and optimize storage I/O performance online without interrupting data availability. Veritas Volume Manager also provides easy-to-use, online storage management tools to reduce downtime.

You add high availability functionality to Storage Foundation HA by installing Veritas Cluster Server software.

---

**Note:** VxFS and VxVM are included in all Veritas Storage Foundation products. If you have purchased a Veritas Storage Foundation product, VxFS and VxVM are installed and updated as part of that product. Do not install or update them as individual components.

---

Veritas Storage Foundation has the following two offerings:

- Storage Foundation Standard
- Storage Foundation Standard HA

[Table 3-2](#) lists the Veritas products and optionally licensed features available with each Storage Foundation version.

**Table 3-2** Storage Foundation offerings

Storage Foundation version	Products and features
Storage Foundation Standard	Veritas File System Veritas Volume Manager
Storage Foundation Standard HA	Veritas File System Veritas Volume Manager Veritas Cluster Server

## Veritas Storage Foundation for Sybase

Before you install this product, review “[Mounting a software disc](#)” on page 12 and “[Installation methods](#)” on page 12.

### Installation overview

Before you start the installation, read the product release notes and installation guides:

- `storage_foundation/release_notes/sf_notes.pdf`
- `storage_foundation/docs/sf_install.pdf`
- `storage_foundation/release_notes/vcs_notes.pdf` (for HA installations)
- `storage_foundation/docs/vcs_install.pdf` (for HA installations)

### About this product

Veritas Storage Foundation for Sybase® by Symantec is an integrated set of system software enhancements and configuration guidelines that combine to help Sybase database administrators configure a database system with high performance, availability, manageability, and the reliability provided by Veritas software products.

You add high availability functionality to Storage Foundation for Sybase HA by installing Veritas Cluster Server software.

# Configuring SSH or RSH before installing products

You can install Veritas products to remote systems using either secure shell (SSH) or remote shell (RSH). SSH is the default and recommended method of installation.

## Enabling SSH

The SSH program lets you log into and execute commands on a remote system. SSH enables encrypted communications and an authentication process between two untrusted hosts over an insecure network. SSH is the preferred method of remote communication because it provides a greater level of security than the RSH suite of protocols. Veritas recommends configuring a secure shell environment before installing any Veritas product. The following is an example SSH setup procedure.

---

**Note:** Read the SSH documentation and online manual pages before enabling SSH. Visit the OpenSSH website for more information. Contact your OS support provider for issues regarding SSH configuration.

---

### To enable SSH

- 1 Log in as root on the source system from which you want to install the Veritas product.
- 2 To generate a DSA key pair on the source system, type the following:  

```
# ssh-keygen -t dsa
```

System output similar to the following is displayed:  
Generating public/private dsa key pair.  
Enter file in which to save the key (/root/.ssh/id\_dsa):
- 3 Press Enter to accept the default location of /root/.ssh/id\_dsa. System output similar to the following is displayed:  
Enter passphrase (empty for no passphrase):
- 4 Do not enter a passphrase. Press Enter:  
Enter same passphrase again:  
Press Enter again.

- 5 Even if the host system is a target for the installation, do the following to complete the SSH configuration. Append the file `/root/.ssh/id_dsa.pub` to `/root/.ssh/authorized_keys` on the each target system by invoking the secure file transfer program:

```
# sftp target_sys
```

If you are performing this step for the first time on this system, output similar to the following is displayed:

```
Connecting to target_sys...
The authenticity of host 'target_sys (10.182.00.00)'
can't be established. DSA key fingerprint is
fb:6f:9f:61:91:9d:44:6b:87:86:ef:68:a6:fd:88:7d.
Are you sure you want to continue connecting (yes/no)?
yes
```

- 6 Enter `yes`. Output similar to the following is displayed:

```
Warning: Permanently added 'target_sys,10.182.00.00'
(DSA) to the list of known hosts.
root@target_sys password:
```

- 7 Enter the root password.

- 8 At the `sftp` prompt, type the following command:

```
sftp> put /root/.ssh/id_dsa.pub \
      /root/.ssh/authorized_keys
```

The following output is displayed:

```
Uploading /.ssh/id_dsa.pub to /id_dsa.pub
```

- 9 To quit the SFTP session, type the following command:

```
sftp> quit
```

- 10 When installing from a source system that is also an installation target, add the local system `id_dsa.pub` key to the local `/root/.ssh/authorized_keys` file. The installation can fail if the installation source system is not authenticated.

- 11 Run the following commands on the source installation system. These commands bring the private key into the shell environment and makes the key globally available for the user `root`:

```
# exec /usr/bin/ssh-agent $SHELL
# ssh-add
```

```
Identity added: /root/.ssh/id_dsa
```

This is a shell-specific step and is valid only while the shell is active. You must execute the procedure again if you close the shell during the session.

- 12 To verify that you can connect to the target system, type the following command:

```
# ssh -l root target_sys uname -a
```

The commands should execute on the remote system without the system requesting a passphrase or password.

## Enabling RSH

The following section describes how to enable remote shell. Veritas recommends configuring a secure shell environment for Veritas product installations. See the operating system documentation for more information on configuring remote shell.

- 1 To ensure that the `rsh` and `rsh-server` packages are installed, type the following command:  

```
# rpm -qa | grep rsh
rsh-server-0.17-25.3
rsh-0.17-25.3
```
- 2 If it is not already in the file, type the following command to append the line “`rsh`” to the `/etc/securetty` file:  

```
# echo "rsh" >> /etc/securetty
```
- 3 In the `/etc/pam.d/rsh` file, change the “`auth`” type from “`required`” to “`sufficient`” for “`pam_rhosts_auth.so`”:  

```
auth      sufficient      pam_rhosts_auth.so
```
- 4 To enable the RSH server, type the following command:  

```
# chkconfig rsh on
```
- 5 Modify the `.rhosts` file. Each line of the `.rhosts` file contains a fully qualified domain name or IP address for each remote system, and the name of a user having access to the local system. For example, if the root user must remotely access `system1` from `system2`, add an entry for `system2.companyname.com` to the `.rhosts` file on `system1` by typing the following command:  

```
# echo "system2.companyname.com" >> $HOME/.rhosts
```
- 6 Install the Veritas product.
- 7 Remove the “`rsh`” entry in the `/etc/securetty` file.
- 8 Disable the RSH server by typing the following command:  

```
# chkconfig rsh off
```
- 9 After completing an installation procedure, delete the `.rhosts` file from each user’s `$HOME` directory to ensure security:  

```
# rm -f $HOME/.rhosts
```

## Disc directory structure

[Table 3-3](#) and [Table 3-4](#) on page 31 list the directory and contents of the Veritas Storage Foundation and High Availability Solutions 5.0 discs.

**Table 3-3** Storage Foundation and High Availability Solutions Disc 1 directories

Directory name	Contents—Red Hat Enterprise Linux 4.0 (RHEL 4)
getting_started.pdf	This document
rhel4_ppc64	For IBM POWER5 systems
<b>rhel4_ppc64 subdirectories:</b>	
cluster_management_console	Veritas Cluster Server Centralized Management Console packages and scripts
cluster_server	Veritas Cluster Server packages, scripts, and documentation
file_system	Veritas File System packages and scripts
installer	Product installation script
perl	Perl language binaries and library functions
storage_foundation	Veritas Storage Foundation, Veritas File System, and Veritas Volume Manager packages, scripts, and documentation
storage_foundation_for_sybase	Veritas Storage Foundation for Sybase packages, scripts, and documentation
volume_manager	Veritas Volume Manager packages and scripts
windows	VCS Windows installers

**Table 3-4** Storage Foundation and High Availability Solutions Disc 1 directories

Directory name	Contents—SUSE Enterprise Linux 9 (SLES 9)
getting_started.pdf	This document
sles9_ppc64	For IBM POWER5 systems
<b>sles9_ppc64 subdirectories:</b>	
cluster_management_console	Veritas Cluster Server Centralized Management Console packages and scripts
cluster_server	Veritas Cluster Server packages, scripts, and documentation
file_system	Veritas File System packages and scripts
installer	Product installation script
perl	Perl language binaries and library functions
storage_foundation	Veritas Storage Foundation, Veritas File System, and Veritas Volume Manager packages, scripts, and documentation
storage_foundation_for_sybase	Veritas Storage Foundation for Sybase packages, scripts, and documentation
volume_manager	Veritas Volume Manager packages and scripts
windows	VCS Windows installers

## Known issues

### Latest Veritas Product Information

Before you install any product, read the following Veritas Technical Support TechNote for the latest information on updates, patches, and software issues regarding this release:

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

To find information on supported hardware, see the hardware compatibility list (HCL) in the following TechNote:

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