

Veritas Storage Foundation™ and High Availability Solutions Getting Started Guide

Linux

5.0 Release Update 1



Veritas Storage Foundation™ Release Notes

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Product overview

This chapter includes the following topics:

- [Veritas Storage Foundation product suites](#)
- [About Veritas Storage Foundation and High Availability products](#)

Veritas Storage Foundation product suites

Veritas Storage Foundation and High Availability Solutions 5.0 Release Update 1 adds support for SuSE Linux Enterprise Server 11 and includes cumulative updates for 5.0 MP3 RP1 and RP2. The *Veritas Storage Foundation and High Availability Solutions Getting Started Guide* and *Veritas Storage Foundation Release Notes* are updated for this 5.0 RU1 release.

Refer to the Veritas Storage Foundation 5.0 MP3 documentation set for all other information.

The 5.0 MP3 documentation is available at the following URL:

<http://www.symantec.com/business/support/overview.jsp?pid=15107>

The following table lists the Symantec products and optionally licensed features available with each Veritas Storage Foundation product suite.

Table 1-1 Contents of Veritas Storage Foundation products

Storage Foundation version	Products and features
Storage Foundation Basic	Veritas File System Veritas Volume Manager

Table 1-1 Contents of Veritas Storage Foundation products (*continued*)

Storage Foundation version	Products and features
Storage Foundation Standard	Veritas File System Veritas Volume Manager Optionally licensed features: Veritas Volume Replicator
Storage Foundation Standard HA	Veritas File System Veritas Volume Manager Veritas Cluster Server Optionally licensed features: Veritas Volume Replicator
Storage Foundation Enterprise	Veritas File System Veritas Volume Manager Veritas Storage Checkpoint option Optionally licensed features: Veritas Volume Replicator
Storage Foundation Enterprise HA	Veritas File System Veritas Volume Manager Veritas Storage Checkpoint option Veritas Cluster Server Optionally licensed features: Veritas Volume Replicator
Storage Foundation Cluster File System	Veritas File System Veritas Volume Manager Veritas Storage Checkpoint option Veritas Storage Mapping option Optionally licensed features: Veritas Volume Replicator

Table 1-1 Contents of Veritas Storage Foundation products (*continued*)

Storage Foundation version	Products and features
Storage Foundation Cluster File System HA	Veritas File System Veritas Volume Manager Veritas Cluster Server Veritas Storage Checkpoint option Veritas Storage Mapping option Optionally licensed features: Veritas Volume Replicator

About Veritas Storage Foundation and High Availability products

The following sections describe the products and component software available in this Veritas Storage Foundation and High Availability Solutions 5.0 RU1 release.

Component software

The following component software is in this Veritas Storage Foundation and High Availability Solutions 5.0 RU1 release.

Symantec Product Authentication Service

The Symantec Product Authentication Service is a common Symantec feature. This feature validates the identities that are based on existing network operating system domains (such as NIS and NT) or private domains. The authentication service protects communication channels among Symantec application clients and services through message integrity and confidentiality services.

Before you install the authentication service, read the Storage Foundation and High Availability Solutions appendix in the *Symantec Product Authentication Service Installation Guide*.

This documentation is part of the 5.0 MP3 documentation available at the following URL:

<http://www.symantec.com/business/support/overview.jsp?pid=15107>

Before you select this method of setting up the authentication service, also read the product installation guide and release notes.

Storage Foundation Manager

Storage Foundation Manager (SFM) provides a centralized management console for Veritas Storage Foundation products. You can use SFM to monitor, visualize, and manage storage resources and generate reports about those resources. SFM simplifies and improves management of complex data center resources and reduces planned and unplanned downtime.

You are prompted to set up an optional SFM managed host during every Storage Foundation product installation. To configure the system as an SFM managed host during SF installation, enable centralized management by downloading SFM 2.0 from:

<http://www.symantec.com/sfm>

See the Veritas Storage Foundation Manager Installation Guide for more information.

For more information about SFM, visit the following URL:

<http://www.symantec.com/enterprise/sfms>

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, complete the following tasks:

- Read the product release notes.
- Review the preliminary information.
- Follow the instructions in the *Veritas Cluster Server Installation Guide*.

This documentation is part of the 5.0 MP3 documentation available at the following URL:

<http://www.symantec.com/business/support/overview.jsp?pid=15107>

The 5.0 RU1 release media contains the following documentation:

`<distribution>/cluster_server/docs/vcs_notes.pdf`

`<distribution>/storage_foundation/docs/sf_notes.pdf`

where `<distribution>` is the architecture directory such as, `sles11_x86_64`.

Installation overview

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 provides the following benefits:

- Eliminates the downtime
- Facilitates the consolidation and the failover of servers
- Effectively manages a wide range of applications in heterogeneous environments

Veritas Volume Replicator

Before you install this product, complete the following tasks:

- Read the product release notes.
- Review the preliminary information.
- Follow the instructions in the *Storage Foundation Installation Guide*.

This documentation is part of the 5.0 MP3 documentation available at the following URL:

<http://www.symantec.com/business/support/overview.jsp?pid=15107>

The 5.0 RU1 release media contains the following documentation:

```
<distribution>/storage_foundation/docs/sf_notes.pdf  
<distribution>/storage_foundation/getting_started.pdf
```

where *<distribution>* is the architecture directory such as, `sles11_x86_64`.

About this product

Veritas Volume Replicator by Symantec is an optional, separately-licensable feature of Veritas Volume Manager. Volume Replicator is a fully integrated component of Veritas Volume Manager. This component replicates data to remote locations over any standard IP network to provide continuous data availability.

The Volume Replicator option is available with Veritas Storage Foundation Standard and Enterprise products.

Veritas Storage Foundation

Before you install this product, complete the following tasks:

- Read the product release notes.
- Review the preliminary information.
- Follow the instructions in the *Storage Foundation Installation Guide*.

This documentation is part of the 5.0 MP3 documentation available at the following URL:

<http://www.symantec.com/business/support/overview.jsp?pid=15107>

The 5.0 RU1 release media contains the following documentation:

```
<distribution>/storage_foundation/docs/sf_notes.pdf  
<distribution>/storage_foundation/getting_started.pdf
```

where *<distribution>* is the architecture directory such as, `sles11_x86_64`.

For HA installations, also read the following documents.

```
<distribution>/cluster_server/docs/vcs_notes.pdf
```

where *<distribution>* is the architecture directory such as, `sles11_x86_64`.

Veritas Storage Foundation Basic

Veritas Storage Foundation Basic by Symantec (SF Basic) is a special product that is available on a separate Storage Foundation Basic disc. It is also available by download from the Symantec Web site. SF Basic is not part of the Storage Foundation and High Availability Solutions product suite. For complete information on ordering this product, licensing, and technical support, visit the following URL:

www.symantec.com/enterprise/sfbasic

Use SF Basic with Veritas Storage Foundation Management Server to set up a centrally managed host to monitor, visualize, and manage storage resources across multiple installations. SF Management Server is a separately available product. For information on ordering SF Management Server, visit the following Symantec Web site:

www.symantec.com/enterprise/sfms

About this product

Storage Foundation Basic supports all Storage Foundation Standard features, however, there are deployment, licensing, and technical support limitations.

Limited deployment

Storage Foundation Basic has a limited set of configurations.

SF Basic deployment is limited to the following configurations:

- Maximum four VxVM volumes per physical server (excludes the system volumes that are required for starting root disks)
- Maximum four VxFS file systems per physical server (excludes root file systems)
- Maximum server capacity of two CPU sockets

Licensing

Storage Foundation Basic includes a limited-use license. Customers must comply with the terms stated in the End-User License Agreement.

Technical support

Technical support is self-service only, available from the Veritas Support Web site. You can purchase additional support corresponding to the terms of the Storage Foundation Basic license.

To access the self-service knowledge base, go to the following location:

<http://entsupport.symantec.com>

When contacting Support with questions about Storage Foundation Basic, be prepared to provide your product license key. You can determine your currently installed license by running the Veritas license report utility as shown in the following example:

```
# vxlicrep
....
License Key      = WXYZ-9999-WXY7-WXYZ-WXYZ-WX3
Product Name    = Veritas Storage Foundation Basic
```

Installation overview

The Veritas Storage Foundation software is on the Veritas Storage Foundation Basic disc. You cannot install Storage Foundation Basic if another Veritas Storage Foundation product is installed unless that product is first removed from the system.

Before you install this product, complete the following tasks:

- Read the product release notes.

- Review the preliminary information.
- Follow the instructions in the release documents.

`<distribution>/storage_foundation/docs/sf_notes.pdf`

`<distribution>/storage_foundation/docs/getting_started.pdf`

where `<distribution>` is the architecture directory such as, `sles11_x86_64`.

Storage Foundation Cluster File System

Before you install this product, complete the following tasks:

- Read the product release notes.
- Review the preliminary information.
- Follow the instructions in the *Storage Foundation Installation Guide*.

The 5.0 RU1 release media contains the following documentation:

`<distribution>/storage_foundation/docs/sf_notes.pdf`

`<distribution>/storage_foundation/getting_started.pdf`

`<distribution>/cluster_server/docs/vcs_notes.pdf`

where `<distribution>` is the architecture directory such as, `sles11_x86_64`.

About Veritas Storage Foundation Cluster File System

Veritas Storage Foundation Cluster File System by Symantec extends Veritas File System and Veritas Volume Manager to support shared data in a storage area network (SAN) environment. Using Storage Foundation Cluster File System, multiple servers can concurrently access shared storage and files transparently to applications.

Storage Foundation Cluster File System HA adds the failover functionality of Veritas Cluster Server. This functionality can protect everything from a single critical database instance to very large multiple-application clusters in networked environments. Veritas Storage Foundation Cluster File System also provides increased automation and intelligent management of availability and performance.

The Veritas Volume Replicator feature, which replicates data to remote locations over an IP network, can also be licensed with this product.

How the discs are organized

This chapter includes the following topics:

- [Contents of the software discs in the media kit](#)
- [Disc directory structure](#)

Contents of the software discs in the media kit

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.

Find the location of the Getting Started Guide and Release Notes for each product in the corresponding product sections. Read the Getting Started guide and release notes for your product before you begin an installation procedure.

You can install only the Symantec software products for which you have purchased a license. Other products are included on the enclosed software discs but are not available.

Contents of the product disc

The following products are on the product disc:

- Veritas Cluster Server
- Veritas File System
- Veritas Volume Manager
- Veritas Volume Replicator
- Veritas Storage Foundation
- Veritas Storage Foundation Cluster File System
- Symantec Product Authentication Service

Contents of the 5.0 RU1 disc

For the Veritas Storage Foundation and High Availability Solutions 5.0 RU1 release, the media kit contains a disc with software updates for SuSE Linux Enterprise Server 11. After installing the product, mount the release update software disc. Go to the appropriate product directory and review the release notes.

Disc directory structure

Table 2-1 Storage Foundation and High Availability Solutions Disc 1 directories

Directory name	Contents—SuSE Linux Enterprise Server 11
sles11_x86_64	For x86 64-bit systems
sles11_x86_64 subdirectory:	
authentication_service	Symantec Authentication Services packages and documentation
cluster_server	Veritas Cluster Server Centralized Management Console packages and scripts
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_cluster_file_system	Veritas Storage Foundation Cluster File System packages, scripts, and documentation
volume_manager	Veritas Volume Manager packages and scripts
volume_replicator	Veritas Volume Replicator packages, scripts, and documentation

Table 2-1 Storage Foundation and High Availability Solutions Disc 1 directories
(continued)

Directory name	Contents—SuSE Linux Enterprise Server 11
windows	Volume Replicator advisor Windows clients, VCS Windows installers, VCS Cluster Server Centralized Management installers, Symantec Product Authentication Services installer

Installation overview

This chapter includes the following topics:

- [Documentation references, before you install](#)
- [Performing preinstallation checks and configuration](#)
- [Configuring secure shell \(ssh\) or remote shell before installing products](#)
- [Mounting a software disc](#)
- [Downloading the Storage Foundation and High Availability software](#)
- [Copying and unzipping the downloaded release](#)
- [Installing and configuring Storage Foundation using the common product installer](#)

Documentation references, before you install

Before you install this product, become familiar with the following 5.0 RU1 documentation:

- Review the product release notes and getting started guide
- Review the preliminary information
- Follow the instructions in the *Storage Foundation Installation Guide*. This document is part of the 5.0 MP3 release documentation available from: <http://www.symantec.com/business/support/overview.jsp?pid=15107>

The 5.0 RU1 release media contains the following documents:

```
<distribution>/storage_foundation/docs/sf_notes.pdf
```

```
<distribution>/storage_foundation/getting_started.pdf
```

where *<distribution>* is the architecture directory such as, `sles11_x86_64`.

Performing preinstallation checks and configuration

This installation guide is designed for system administrators who already have a knowledge of basic UNIX system and network administration. Basic knowledge includes commands such as `tar`, `mkdir`, and simple shell scripting. Also required is basic familiarity with the specific platform and operating system where Storage Foundation is installed.

Only users with superuser privileges can install and initialize Storage Foundation.

Review the preinstallation requirements and system requirements. Install the operating system, before installing the Veritas software.

The product documentation is available on the web at the following location:

<http://www.symantec.com/business/support/index.jsp>

To produce a report of the preinstallation requirements, run the installer with the `precheck` option.

```
# ./installer -precheck
```

If patches to the Linux operating system are required, the patches should be applied prior to installing the Veritas products. Patches may be required to resolve Linux kernel, product performance, or other issues.

The system should be in a quiescent state before adding patches.

See the product *Release Notes* for last minute information on recommended patches.

For remote installation, or installation on multiple systems, set up `rsh` or `ssh`.

See “[Configuring secure shell \(ssh\) or remote shell before installing products](#)” on page 23.

Mount the Veritas software disc, or download and uncompress the Storage Foundation software.

See “[Mounting a software disc](#)” on page 29.

See “[Downloading the Storage Foundation and High Availability software](#)” on page 30.

Configuring secure shell (ssh) or remote shell before installing products

Establishing communication between nodes is required to install Veritas software from a remote system, or to install and configure a cluster. The node from which the installation utility is run must have permissions to run `rsh` (remote shell) or `ssh` (secure shell) utilities. These utilities must run as `root` on all cluster nodes or remote systems.

You can install products to remote systems using either secure shell (ssh) or remote shell (rsh). ssh is the preferred method of remote communication because it provides a greater level of security than the rsh suite of protocols.

This section contains an example of how to set up ssh password free communication. The example sets up ssh between a source system (system1) that contains the installation directories, and a target system (system2). This procedure also applies to multiple target systems.

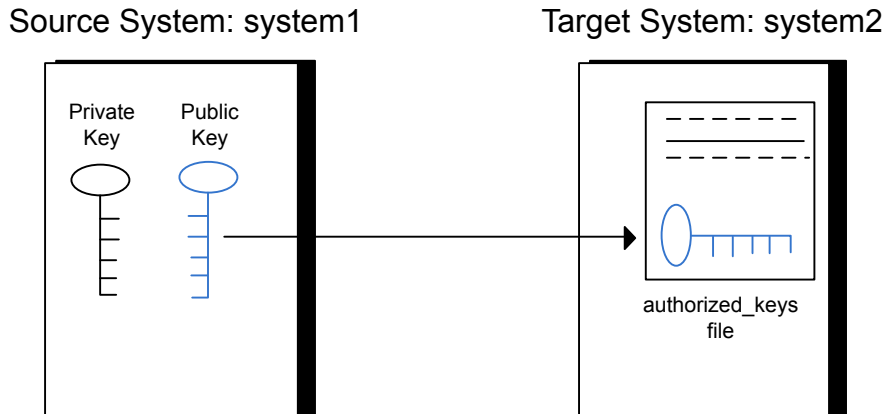
Configuring and enabling ssh

The ssh program enables you to 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.

In this procedure, you first create a DSA key pair. From the key pair, you append the public key from the source system to the `authorized_keys` file on the target systems.

[Figure 3-1](#) illustrates this procedure.

Figure 3-1 Creating the DSA key pair and appending it to target systems



Read the ssh documentation and online manual pages before enabling ssh. Contact your operating system support provider for issues regarding ssh configuration.

Visit the OpenSSH website that is located at: <http://openssh.org> to access online manuals and other resources.

To create the DSA key pair

- 1 On the source system (system1), log in as root, and navigate to the root directory.

```
system1 # cd /
```

- 2 To generate a DSA key pair on the source system, type the following command:

```
system1 # 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`.

- 4 When the program asks you to enter the passphrase, press the Enter key twice.

```
Enter passphrase (empty for no passphrase):
```

Do not enter a passphrase. Press Enter.

```
Enter same passphrase again:
```

Press Enter again.

- 5 Output similar to the following lines appears.

```
Your identification has been saved in /root/.ssh/id_dsa.
Your public key has been saved in /root/.ssh/id_dsa.pub.
The key fingerprint is:
1f:00:e0:c2:9b:4e:29:b4:0b:6e:08:f8:50:de:48:d2 root@system1
```

To append the public key from the source system to the authorized_keys file on the target system, using secure file transfer

- 1 From the source system (system1), move the public key to a temporary file on the target system (system2).

Use the secure file transfer program.

In this example, the file name `id_dsa.pub` in the root directory is the name for the temporary file for the public key.

Use the following command for secure file transfer:

```
system1 # sftp system2
```

If the secure file transfer is set up for the first time on this system, output similar to the following lines is displayed:

```
Connecting to system2 ...
The authenticity of host 'system2 (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)?
```

- 2 Enter `yes`.

Output similar to the following is displayed:

```
Warning: Permanently added 'system2,10.182.00.00'
(DSA) to the list of known hosts.
root@system2 password:
```

Configuring secure shell (ssh) or remote shell before installing products

- 3 Enter the root password of system2.
- 4 At the `sftp` prompt, type the following command:

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

The following output is displayed:

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

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

```
sftp> quit
```

- 6 Add the `id_dsa.pub` keys to the `authorized_keys` file on the target system. To begin the `ssh` session on the target system (system2 in this example), type the following command on system1:

```
system1 # ssh system2
```

Enter the root password of system2 at the prompt:

```
password:
```

Type the following commands on system2:

```
system2 # cat /root/id_dsa.pub >> /root/.ssh/authorized_keys
system2 # rm /root/id_dsa.pub
```

- 7 When you install from a source system that is also an installation target, also add the local system `id_dsa.pub` key to the local `authorized_keys` file. The installation can fail if the installation source system is not authenticated.

To add the local system `id_dsa.pub` key to the local `authorized_keys` file, enter the following command:

```
system1 # cat /root/.ssh/id_dsa.pub >> /root/.ssh/authorized_keys
```

- 8 Run the following commands on the source installation system. If your ssh session has expired or terminated, you can also run these commands to renew the session. These commands bring the private key into the shell environment and make the key globally available for the user `root`:

```
system1 # exec /usr/bin/ssh-agent $SHELL
system1 # ssh-add

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

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

To verify that you can connect to a target system

- 1 On the source system (system1), type the following command:

```
system1 # ssh -l root system2 uname -a
```

where `system2` is the name of the target system.

- 2 The command should execute from the source system (system1) to the target system (system2) without the system requesting a passphrase or password.
- 3 Repeat this procedure for each target system.

Restarting ssh

After you complete this procedure, ssh can be restarted in any of the following scenarios:

- After a terminal session is closed
- After a new terminal session is opened
- After a system is restarted
- After too much time has elapsed, to refresh ssh

To restart ssh

- 1 On the source installation system (system1), bring the private key into the shell environment.

```
system1 # exec /usr/bin/ssh-agent $SHELL
```

- 2 Make the key globally available for the user `root`

```
system1 # ssh-add
```

Enabling rsh for Linux

The following section describes how to enable remote shell.

Veritas recommends configuring a secure shell environment for Veritas product installations.

See [“Configuring and enabling ssh”](#) on page 23.

See the operating system documentation for more information on configuring remote shell.

To enable rsh

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

```
# rpm -qa | grep -i rsh
rsh-0.17-706.16
rsh-server-0.17-706.16
```

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
```

- 2 In the `/etc/pam.d/rsh` file, change the `"auth"` type from `"required"` to `"sufficient"`:

```
auth    sufficient
```

- 3 To enable the rsh server, type the following command:

```
# chkconfig rsh on
```

- 4 Modify the `.rhosts` file. Each line of the `.rhosts` file contains a fully qualified domain name or IP address for each remote system. This file also contains 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
```

- 5 Install the Veritas product.
- 6 Remove the "rsh" entry in the `/etc/securetty` file.
- 7 Disable the rsh server by typing the following command:

```
# chkconfig rsh off
```

- 8 After you complete an installation procedure, delete the `.rhosts` file from each user's `$HOME` directory to ensure security:

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

Mounting a software disc

Veritas software is provided on a DVD format disc. If you have the media kit, then get the software disc from the media kit.

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 Insert the disc and type the following command:

```
# mount -o ro /dev/cdrom /mnt/cdrom
```

- 4 Change to the appropriate distribution directory and product subdirectory to view the product release notes and installation guides, or install the products.

Downloading the Storage Foundation and High Availability software

One method of obtaining the Storage Foundation and High Availability software is to download it to your local system from the Symantec Web site.

If you download a stand-alone Veritas product, the single product download files do not contain the general product installer. Use the installation script for the specific product to install the product.

To download the software

- 1 Verify that you have enough space on your filesystem to store the downloaded software.

The estimated space that is needed for download, gunzip, and tar extract is 5 GB.

If you plan to install the software on the same system, make sure that you also have enough space for the installed software.

- 2 To see the space available, you can use the `df` command with the name of the local file system where you intend to download the software.

```
# df -k filesystem
```

Caution: When you select a location to download files, do not select a directory that contains Veritas products from a previous release or maintenance pack. You must download the Veritas 5.0 software and the Veritas 5.0 RU1 software into separate directories.

- 3 Download the software, specifying the file system with sufficient space for the file.

Copying and unzipping the downloaded release

Before you can install the release, you must unzip the downloaded file, and extract the installation and products from the downloaded file.

To unzip the release

- 1 Create a new directory on a file system with sufficient space to store the installation software after the files are uncompressed. Let *parent_directory* be the name of the new directory to store the files for this release.

This directory must be clean, with no files present from previous installations or versions of any products.

```
# mkdir /parent_directory/install
```

- 2 Copy the compressed files from your download area to the installation directory as needed. This copy might be necessary if the area into which releases are downloaded is not on the system or area used for installations.
- 3 Go to the installation directory and unzip the compressed files.

```
# cd /parent_directory/install
# gunzip *.gz
```

To untar the downloaded file

- ◆ Untar the downloaded file to your new installation directory.

```
# cd /parent_directory/install
# tar xf filename1.tar
# tar xf filename2.tar
# tar xf filename3.tar
.
.
```

Installing and configuring Storage Foundation using the common product installer

The Veritas product installer is the recommended method to license and install Storage Foundation.

The following sample procedure is based on the installation of Storage Foundation on a single system.

To install Storage Foundation

- 1 To install on multiple systems, set up the systems so that commands between systems execute without prompting for passwords or confirmations.

See [“Configuring secure shell \(ssh\) or remote shell before installing products”](#) on page 23.

- 2 Load and mount the software disc.

See [“Mounting a software disc”](#) on page 29.

- 3 Move to the top-level directory on the disc.

- 4 From this directory, type the following command to install on the local system only. Also use this command to install on remote systems using the secure shell (ssh) utilities:

```
# ./installer
```

If you use the remote shell utilities to install on remote systems, additionally specify the `-rsh` option:

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

The sample installation assumes that ssh is used.

- 5 Enter `I` to install and press Return.
- 6 When the list of available products is displayed, select Veritas Storage Foundation, enter the corresponding number, and press Return.
- 7 You are prompted to enter the system names (in the following example, "host1") on which the software is to be installed. Enter the system name or names and then press Return.

```
Enter the system names separated by spaces on which to  
install SF: host1
```

- 8 Enter the product license information.

Each system requires a product license before installation. License keys for additional product features should also be added at this time.

```
Enter a SF license key for host1:
```

```
XXXX-XXXX-XXXX-XXXX-XXXX-XXXX-X
```

```
XXXX-XXXX-XXXX-XXXX-XXXX-XXXX-X successfully registered on  
host1
```

```
SF license registered on host1
```


- 9** You are prompted to enter additional license information, until all licenses for all systems have been entered. Then reply that you have no additional licenses to enter.

```
Do you want to enter another license key for host1?
[y,n,q] (n) n
```

- 10** You can choose to install required RPMs or all RPMs. Optional RPMs include man pages, for example.

Each option displays the disk space that is required for installation. Select which option you want to install and press Return.

For example, you should see output similar to the following:

- 11** You have the option of specifying the default name of a disk group. If you specify a name, it is used for Veritas Volume Manager commands when a disk group is not specified.

Enter **n** if you do not want to specify the name of the default disk group at this time. You can set the name of the default disk group after installation.

If you specify the name of a default disk group, this step does not create the disk group. After installation, you can use the `vxdiskadm` command to create the disk group.

```
Do you want to set up a default disk group for each
system? [y,n,q,?] (y) y
```

- 12** If you responded **y**, then enter the information for the default disk group name.

```
Specify a default disk group name for system host1. [?] dg001
```

- 13** You are prompted to confirm the default disk group.

Note: If `nodg` is displayed, then the host will be configured to have no default disk group.

```
Is this correct? [y,n,q] (y) y
```

- 14** Verify the fully qualified hostname of the systems.

```
Is the fully qualified hostname of system
"host1" = "host1.domain_name"? [y,n,q] (y) y
```

- 15** Enabling Veritas Storage Foundation Management Server management simplifies and improves management of the complex data center resources, reducing planned and unplanned down time.

This product can be configured in one of the following two ways:

- Veritas Storage Foundation Management Server managed host (Recommended)
- Standalone host

Pre-requisites for Veritas Storage Foundation Management Server managed host:

- Veritas Storage Foundation Management Server (SFM) is configured
- SFM is currently running and fully operational
- The Authentication Broker used by SFM is running

There are no pre-requisites for deploying as a standalone host.

To enable centralized management using Storage Foundation Manager, download Veritas Storage Foundation Management Server from:

[http:// www.symantec.com/sfm](http://www.symantec.com/sfm)

See the *Veritas Storage Foundation Manager Installation Guide* for more information.

- 16** The installation and configuration complete automatically, and the processes are started.

Check the log file, if needed, to confirm the installation and configuration.

Installation log files, summary file, and response file are saved at:

```
/opt/VRTS/install/logs/installer-****
```

Note: If you choose not to use the Veritas product installer, you will need to edit `allow_unsupported_modules` in `/etc/modprobe.d/unsupported-modules`. Please refer to Novell support document 7002793.

Where to find more information

This chapter includes the following topics:

- [Documentation](#)
- [Service and support](#)

Documentation

Veritas Storage Foundation and High Availability Solutions 5.0 Release Update 1 adds support for SuSE Linux Enterprise Server 11 and includes cumulative updates for 5.0 MP3 RP1 and RP2. The *Veritas Storage Foundation and High Availability Solutions Getting Started Guide* and *Veritas Storage Foundation Release Notes* are updated for this 5.0 RU1 release.

Refer to the Veritas Storage Foundation 5.0 MP3 documentation set for all other information.

The 5.0 MP3 documentation is available at the following URL:

<http://www.symantec.com/business/support/overview.jsp?pid=15107>

Veritas documents are in Adobe Portable Document Format (PDF) on the product discs or downloaded software.

You can access product documentation in the following ways:

- The product documentation is available on the Web at the following URL:
<http://www.symantec.com/business/support/index.jsp>
- Purchase hard-copy software guides by contacting your salesperson.

Service and support

To access the self-service knowledge base, go to the following URL:

<http://entsupport.symantec.com>