# Veritas™ Volume Replicator Installation Guide

Linux on IBM System p

5.0

# Veritas Volume Replicator Installation Guide



Veritas Volume Replicator 5.0



Symantec Corporation
20330 Stevens Creek Blvd.
Cupertino, CA 95014
www.symantec.com

# Third-party legal notices

Third-party software may be recommended, distributed, embedded, or bundled with this Veritas product. Such third-party software is licensed separately by its copyright holder. All third-party copyrights associated with this product are listed in the accompanying release notes.

Linux is a registered trademark of Linus Torvalds.

## Licensing and registration

Veritas Volume Replicator is a licensed product. See the *Veritas Volume Replicator Installation Guide* for license installation instructions.

## Technical support

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

# Contents

Chapter 1

# Preinstallation instructions

This chapter explains the steps to perform before installing or upgrading Veritas™ Volume Replicator (VVR). Before installing VVR, read the *Veritas Volume Replicator Release Notes* and the *Getting Started Guide*.

You must also obtain a license key for Veritas Volume Replicator before installing VVR. Note that even if you have already obtained a Veritas Volume Manager license key, you must obtain a separate license key for VVR.

## Symantec product licensing

This product includes a License Key certificate. The certificate specifies the product keys and the number of product licenses purchased. A single key lets you install the product on the number and type of systems for which you purchased the license. A key may enable the operation of more products than are specified on the certificate; however, you are legally limited to the number of product licenses purchased.

The product installation procedures (see "Installing Veritas Volume Replicator" on page 15) describe how to activate the key. If you encounter problems while licensing this product, visit the Symantec licensing support website at:

https://licensing.symantec.com/

The VRTSvlic package enables product licensing. After the VRTSvlic is installed, the following commands and their manual pages are available on the system:

| | |
|---|---|
| vxlicinst | Installs a license key for a Symantec product |
| vxlicrep | Displays currently installed licenses |
| vxlictest | Retrieves features and their descriptions encoded in a license key |

Even though other products are included on the enclosed software discs, you can only install the Symantec software products for which you have purchased a license.

# Planning your VVR configuration

Planning is the key to successfully configuring VVR. To set up an optimum Veritas Volume Replicator configuration, you must understand how the various VVR components interact with each other. In addition, you must consider the factors that are specific to your environment while planning your VVR configuration. When planning your VVR configuration, refer to the following VVR documents:

- *Veritas Volume Replicator Planning and Tuning Guide*
  The *Veritas Volume Replicator Planning and Tuning Guid*e describes the importance of factors such as network bandwidth in planning your configuration. It helps you determine the characteristics of your VVR environment, such as the appropriate size of the Storage Replicator Log (SRL), and which mode of replication to use. This guide also provides information about performance considerations, including the VVR parameters that are tunable and that affect performance.
- *Veritas Volume Replicator Advisor User's Guide*
  VRAdvisor is a tool that helps you evaluate your network and application characteristics so that you can set up an optimal VVR configuration. You must understand the concepts explained in the *Veritas Volume Replicator Planning and Tuning Guid*e before using VRAdvisor.

These documents are available on the documentation disc. For more information on the documentation disc, see the *Getting Started Guide*. After you have installed VVR and have determined the requirements for your configuration, you are ready to set up VVR and start replication. See “Interfaces of Veritas Volume Replicator” on page 28.

## Centralized management considerations

Veritas Storage Foundation Management Server by Symantec ties together the Storage Foundation product offerings to ensure that the hosts in your data center use storage as efficiently as possible. You can use it to centrally monitor, visualize, and manage Storage Foundation hosts and generate reports about the hosts and the storage resources they consume.

The central console seamlessly integrates a wide range of management tasks like monitoring and reporting.

SF Management Server also offers customizable policy-based management that helps you automate:

- Notification
- Recovery
- Other user-definable actions

SF Management Server is not available on the Storage Foundation and High Availability Solutions release and must be obtained separately. For information on ordering SF Management Server, visit:

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

# Preinstallation planning

This installation guide describes installing VVR. Before installing VVR:

- ✔ Confirm that your system has enough free disk space to install VVR.
- ✔ Make sure you have root permissions. You must have root permissions to perform the install procedures.

For a detailed explanation of the VVR tunables, see *Veritas Volume Replicator Planning and Tuning Guide*. For information about how to change the value of the tunables, see the *Veritas Volume Replicator Administrator's Guide*. These documents are available on the documentation disc. For more information on the documentation disc, see the *Getting Started Guide*.

## Planning a VEA installation

- ✔ The Veritas Enterprise Administrator (VEA) server must be installed on the hosts on which VVR is installed.
- ✔ The VEA providers must be installed on the hosts on which VVR is installed, not on the client.
- ✔ If you plan to run the VEA client on a machine other than the machine to be administered, install the VEA client on the machine where the client will run. Refer to the *Veritas Storage Foundation Installation Guide* for instructions on installing VEA clients.
- ✔ To use the VVR functionality in VEA, the Veritas Volume Replicator Management Services Provider package, `VRTSvrpro`, must be installed on all hosts in the Replicated Data Set (RDS).
- ✔ For `VRTSvrpro` to function, the Veritas Volume Manager Management Services Provider package, `VRTSvmpro`, must be installed on your system.
- ✔ To use the functionality for receiving SNMP notifications and email notifications, the Veritas Action Agent package, `VRTSaa` must be installed.

# Compatibility considerations

Refer to the *Veritas Volume Replicator Release Notes*.

# Mounting the 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.

# Location of the VVR packages

You can find the VVR packages on the Veritas software disc under the `volume_replicator/rpms` directory and the *Veritas Volume Replicator Release Notes* in the `volume_replicator/release_notes` directory. Refer to "List of packages for VVR" on page 13 for a list of the VVR packages.

This manual refers to the location of the Veritas software disc as `/disc_path`. For example, if the Veritas software disc is mounted at `/cdrom/VERITAS`, then the location of the VVR packages is given as `/disc_path/volume_replicator/rpms`.

# Disk space requirements

Confirm that your system has enough free disk space to install VVR. Use the `precheck` option of the product installer to determine whether there is sufficient space. The following table shows the approximate disk space used by VVR for the required and optional packages:

| English | / (root) | /opt | /usr | /var |
|---|---|---|---|---|
| Required Packages | 170 MB | 60 MB | 85 MB | 0.5 MB |
| Optional Packages | 240 MB | 256 MB | 85 MB | 0.5 MB |
| All Packages | 410 MB | 316 MB | 170 MB | 1 MB |

# List of packages for VVR

The following list shows the software packages for VVR:

| | |
|---|---|
| VRTSvlic | Veritas Licensing Utilities. |
| VRTSvxvm-common<br>VRTSvxvm-platform | Veritas Volume Manager and Veritas Volume Replicator. |
| VRTSob | Veritas Enterprise Administrator Service. |
| VRTSvmpro | Veritas Virtual Disk Management Services Provider. (requires VRTSob and VRTSobgui) |
| VRTSvrpro | Veritas Volume Replicator Management Services Provider.<br>(requires VRTSvmpro) |
| VRTSalloc | Veritas Volume Manager: Veritas Intelligent Storage Provisioning |
| VRTSvcsvr | Veritas Cluster Server Agents for Veritas Volume Replicator. |
| VRTSperl | Veritas Perl Redistribution |
| VRTSjre15 | Veritas JRE Redistribution. |
| VRTSweb | Symantec Web Server. |
| VRTSvrw | Veritas Volume Replicator Web Console. |
| VRTSobgui | Veritas Enterprise Administrator. |
| VRTSvmdoc | Veritas Volume Manager documentation. |
| VRTSvrdoc | Veritas Volume Replicator documentation. |

The following list shows the software packages for Volume Replicator Advisor (VRAdv):

| | |
|---|---|
| VRTSvradv.msi | Windows client for Veritas Volume Replicator Advisor |

For more information about Veritas Volume Replicator Advisor, refer to the *Veritas Volume Replicator Advisor User's Guide* (vvr_advisor_users.pdf), which is located in the directory volume_replicator/tools/vradvisor/docs.

# Accessing manual pages and documentation directories

Manual pages are installed in the `/opt/VRTS/man` directories. Add the directory to your MANPATH environment variable to make them accessible.

If you are using a shell such as `sh` or `bash`, do the following:

```
# MANPATH=$MANPATH:/opt/VRTS/man
# export MANPATH
```

If you are using a shell such as `csh` or `tcsh`, do the following:

```
# setenv MANPATH ${MANPATH}:/opt/VRTS/man
```

On a Red Hat system, also include the `1m` manual page section in the list defined by your MANSECT environment variable.

If you are using a shell such as `sh` or `bash`, do the following:

```
# MANSECT=$MANSECT:1m
# export MANSECT
```

If you are using a shell such as `csh` or `tcsh`, do the following:

```
# setenv MANSECT ${MANSECT}:1m
```

Installation of the documentation packages copies PDF files into the `/opt/VRTS/docs` directory.

Chapter 2

# Installing Veritas Volume Replicator

This chapter explains how to install Veritas Volume Replicator (VVR). You can install the Veritas Volume Replicator using one of the following methods:

✔ Installing VVR using the product installer

**Note:** The Veritas product installer ensures package compatibility and proper license installation, and is the recommended method for installation.

✔ Installing VVR packages using the installvvr script

✔ Installing VVR when VxVM is already installed

To use the VCS Agents for VVR, you must install and configure VCS. For instructions, refer to the *Veritas Cluster Server Installation Guide*. Installing VVR includes installing the VCS Agents for VVR package. After installing VVR, you need to configure the VCS agents for VVR. For details, refer to the *Veritas Cluster Server Agents for Veritas Volume Replicator Configuration Guide*.

**Note:** If this release of Veritas Volume Manager (VxVM) or Veritas Storage Foundation is already installed on your system, you can start using VVR by installing the VVR license and configuring VVR. For information, see "Configuring Veritas Volume Replicator" on page 23.

## Installing VVR using the product installer

The Veritas software disc provides a product installer, which is the recommended method to license and install the product.

The *Getting Started Guide*, included with the Veritas software disc, provides complete information on using the product installer.

### To install VVR using the product installer

1. Start the product installer:

```
# cd disc_path
# ./installer
```

2. Select Install/Upgrade a Product.
3. Select the appropriate product name:
   - If you are installing VVR only, use the Veritas Volume Replicator option.
   - If you are installing multiple Veritas products, select the appropriate option in the product installer to install all of the Veritas products at the same time. Refer to the appropriate installation guide for detailed instructions.

---

**Note:** If you have multiple Veritas products, we strongly recommend using the option to install the entire product suite rather than installing each product individually. This ensures that installation steps are done in the proper order and interdependencies are met.

---

4. Follow the prompts to install VVR.
5. The product installer provides an option to configure VVR. If you choose to configure now, select yes when the following prompt is displayed:

```
Are you ready to configure VVR? [y,n,q] (y)
```

6. Follow the prompts to configure VVR.
   If you choose not to configure now, you must configure VVR and start the VVR processes after installing VVR. For details, see "Configuring VVR and starting VVR processes" on page 23.
   If you installed VVR as a standalone host, you can now use VVR from the command line.
   To use VVR Web GUI on a standalone host, perform step 7 through step 8 to install the Web Server for Storage Foundation Host Management.
7. Start the product installer as described in step 1 through step 2.
8. Select Web Server for Storage Foundation Host Management. Follow the prompts to install.

   After installing the Web Server, use the VVR Web GUI to manage VVR by pointing your Web browser to the VVR host. Refer to the *Veritas Volume Replicator Web GUI Administrator's Guide* for details.

# 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.

# 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.

# Installing VVR packages using the installvvr script

You can also install the Veritas Volume Replicator packages using the `installvvr` script by running this script from the command line. The script provides an option to configure VVR. If you choose to configure now, select yes when the following prompt is displayed:

```
Are you ready to configure VVR? [y,n,q] (y)
```

Follow the prompts to configure VVR.

If you choose not to configure now, you must configure VVR and start the VVR processes after installing VVR. For details, see “Configuring VVR and starting VVR processes” on page 23.

## Options for the installation script

Table 2-1 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 such as `installvvr` or the product installer. For an initial install or upgrade, options are not typically required.

**Table 2-1** Product installer command line options

| Command Line Option | Function |
|---|---|
| *system1 system2...* | 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 *encryption_key_file* | See the `-responsefile` and the `-encrypt` options. |
| –encrypt *password* | Encrypts *password* 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 *ssh_key_file* | Specifies a key file for secure shell (SSH) installs. This option passes `-i ssh_key_file` to every SSH invocation. |
| –license | Registers or updates product licenses on the specified systems. |
| –logpath *log_path* | 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. |
| –nolic | Allows installation of product packages without entering a license key. Licensed features cannot be configured, started, or used when this option is specified. |

**Table 2-1** Product installer command line options

| Command Line Option | Function |
|---|---|
| –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 *patch_path* | 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 *package_path* | 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 `installpkgs` option. |
| –responsefile *response_file* [–enckeyfile *encryption_key_file*] | Automates installation and configuration by using system and configuration information stored in a specified file instead of prompting for information. The *response_file* must be a full path name. If not specified, the response file is automatically generated as `installerer`*number*`.response`.*number* is random. You must edit the response file to use it for subsequent installations. Variable field definitions are defined within the file.<br><br>The `–enckeyfile` option and *encryption_key_file* name are required with the `–responsefile` option when the response file contains encrypted passwords. |

**Table 2-1** Product installer command line options

| Command Line Option | Function |
|---|---|
| –rootpath *root_path* | Specifies an alternative root directory on which to install packages.<br>On Solaris operating systems, `-rootpath` passes `-R path` to `pkgadd`.<br>On HP-UX operating systems, `-rootpath` passes `-I path` to `swinstall`.<br>The `-rootpath` option is not supported on AIX or Linux operating systems. |
| –rsh | Specify this option when you want to use RSH and RCP for communication between systems instead of the default SSH and SCP. The `-rsh` option requires that systems be preconfigured so that commands between systems execute without prompting for passwords or confirmations. |
| –tmppath *tmp_path* | Specifies a directory other than `/var/tmp` 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. |

## Installing the VVR license

Use the previously obtained license key to install the license. To display a list of all licenses on the system, use the `vxlicrep` command. To verify that the license is permanent and has not expired, use the `vxlictest` command.

**To install a new VVR license**

```
# vxlicinst
```

Follow the prompts.

# Installing VVR when VxVM is already installed

If this release of Veritas Volume Manager (VxVM) is already installed on your system, you can start using VVR by installing the VVR license. After the VVR license is installed, follow the procedure “Installing VVR using the product installer” on page 15. This installs VVR-specific components and configures VVR.

If a previous version of Veritas Volume Manager (VxVM) is already installed on your system, you must upgrade to this release of VxVM. In some cases, this requires upgrading the operating system (OS) version to the latest version. For details on the supported operating system versions, see *Veritas Volume Replicator Release Notes*. To upgrade to this release of VxVM, see *Veritas Storage Foundation Installation Guide*. After VxVM is upgraded, follow the procedure provided in the section "Installing VVR using the product installer" on page 15. This installs VVR-specific components and configures VVR.

To use the new features of VVR 5.0, upgrade the version of each disk group by entering the following command:

```
# vxdg upgrade diskgroup
```

Chapter 3

# Configuring Veritas Volume Replicator

This chapter explains how to configure Veritas Volume Replicator (VVR). The Configuration Worksheet enables you to plan your VVR environment before going on to configuring VVR.

## Configuring VVR and starting VVR processes

After you have purchased a VVR license, use the Veritas product installer to configure and start VVR.

1. Start the Veritas product installer. The *Getting Started Guide*, included with the Veritas products disc, provides complete information on using the product installer.
2. Select the Configure an Installed Product option.
3. At the prompt, enter the name of the system or systems on which you want to configure VVR.

   ```
   Enter the system names separated by spaces on which to configure
   VVR: seattle london
   ```
4. The script performs an initial system check. The script confirms success by displaying information, such as the OS version, whether the communication is established with the remote hosts, and whether the required VVR packages are installed. When the initial system check completes, the following message is displayed:

   ```
   Initial system check completed successfully.
   ```
5. Press **Return** to continue. The script proceeds to verify whether the required licenses are installed. If a valid license for VVR is not present, the script prompts you to enter a license. The script validates whether the license entered enables VVR. If you need a license, refer to “Symantec product

licensing" on page 7. You cannot proceed until you enter a valid VVR license. If a valid VVR license is present on the system, the script provides the option to add additional licenses.

The following message displays when the license check is complete:

```
VVR licensing verified successfully.
```

6 Press **Return** to continue. The script prompts you to configure VVR.

```
Are you ready to configure VVR? [y,n,q] (y)
```

7 Press **Return** to continue. The script enables you to choose whether you want to use enclosure-based naming. If you enter **Y** to the enclosure-based naming question, the script decides whether the system is eligible for enclosure-based naming. If it is eligible, you will be asked to confirm that you want to go ahead. For more information about enclosure-based naming, refer to the Veritas Volume Manager documentation.

```
Do you want to set up the enclosure-based naming scheme?
[y,n,q,?] (n)
```

8 The script displays the default ports that will be used by VVR. Follow the instructions on the screen if you want to change the VVR ports.

```
Do you want to change any of the VVR ports on seattle? [y,n,q]
(n)
Do you want to use the same port settings on all systems?
[y,n,q] (y)
```

9 Change the VRAS log size if required.

```
The maximum size of the VRAS debug log on seattle is set to 30
MB.
Do you want to change this ? [y,n,q] (n)
Do you want to use the same setting on all systems? [y,n,q] (y)
```

10 Change the frequency of online stats collection, if required.

```
The frequency of online stats collection on seattle is set to
per 10 seconds.
Do you want to change the frequency of online stats collection
on seattle ? [y,n,q] (n)
```

11 Change the maximum number of days that online stats are retained, if required.

```
The maximum number of days for which online stats can be
retained is set to 3 on seattle

Do you want to change the maximum number of days for online
stats ? [y,n,q] (n)
```

12 Configure the VVR tunables if required. For more information about the VVR tunables, refer to the *Veritas Volume Replicator Tuning and Planning Guide*.

Starting with VVR 4.0, a new tunable, `vol_rvio_maxpool_sz`, serves the same purpose as the `voliomem_maxpool_sz` tunable.

If you set the `voliomem_maxpool_sz` tunable in a prior release, you must set the `vol_rvio_maxpool_sz` tunable for this release.

```
Do you want to view or modify VVR tunables on any of the hosts?
[y,n,q,?] (n)
```

The script displays a message indicating whether the configuration is successful. Press **Return** to continue.

13 To start the VVR processes (`vradmind`, `vxnetd`, and `vxrsyncd`), press **Return**.

```
Do you want to start VERITAS Volume Replicator processes now?
[y,n,q] (y)
```

14 Confirm whether you want to set up default disk groups. The script determines whether the systems are eligible.

After setting up default disk groups and starting the VVR processes, the script displays the following messages:

```
VERITAS Volume Replicator was started successfully.
Configuration of VERITAS Volume Replicator 5.0 has completed
successfully.
```

The script also displays the location of the log files which were created in the configuration process.

# Configuration worksheet

The configuration worksheet helps you plan the layout of a Replicated Data Set. Use one copy of the worksheet for each RVG on each host of the RDS, that is, one Primary and as many Secondaries as required. For example, for one Primary and two Secondaries you need three worksheets.

Note that VVR provides the planning tool Veritas Volume Replicator Advisor (VRAdvisor) to help you determine an optimum VVR configuration that suits your business needs. For more information about VRAdvisor, see the *Veritas Volume Replicator Advisor User's Guide*.

### Configuration worksheet

| **Primary/Secondary (choose one):** | | | |
|---|---|---|---|
| Hostname: | Aliases: | | |
| IP Addresses: | | | |
| Disk Group: | | | |
| RVG: | | | |
| (If this is the Primary host, repeat the RLINK information for each Secondary host in the configuration.) | | | |
| RLINK: | | | |
| Remote Host: | Remote DG: | | |
| Remote RLINK: | | | |
| Synchronous (off/override/fail): | | | |
| Latencyprot (off/override/fail): | | | |
| Srlprot (autodcm/off/override/fail/dcm): | | | |
| SRlog: | | | |
| Volume: | Plex: | Disk: | Size: |
| Data Volumes: | | | |
| Volume: | Plex: | Disk: | Size: |
| Volume: | Plex: | Disk: | Size: |

| Primary/Secondary (choose one): | | | |
|---|---|---|---|
| Volume: | Plex: | Disk: | Size: |
| Volume: | Plex: | Disk: | Size: |
| (Repeat the “Data Volumes:” information for each Data Volume in the configuration.) | | | |

# Interfaces of Veritas Volume Replicator

You can configure, administer, and monitor Veritas Volume Replicator (VVR) using one of the following interfaces:

- Command-Line Interface (CLI)
  You can use the command-line interface of VVR to configure, administer, and monitor VVR in a distributed environment. For more information, see the *Veritas Volume Replicator Administrator's Guide*.
- VVR VEA--Java-based desktop GUI
  Veritas Enterprise Administrator (VEA) is a Java-based Graphical User Interface (GUI) that can be used to configure and manage storage objects. VVR VEA enables you to configure, monitor, and administer VVR in a distributed environment. For more information, see Chapter 8, "Administering VVR Using VVR VEA" in the *Veritas Volume Replicator Administrator's Guide*.
- Veritas Volume Replicator Web GUI (VRW)--Web-based GUI
  Veritas Volume Replicator Web GUI (VRW) is the Web-based Graphical User Interface of VVR. For information on configuring and administering VVR using VRW, see the *Veritas Volume Replicator Web GUI Administrator's Guide*.

Chapter 4

# Uninstalling Veritas Volume Replicator

This chapter explains how to uninstall Veritas Volume Replicator (VVR). Uninstalling Volume Replicator involves removing the Replicated Data Set (RDS) and uninstalling Veritas Volume Manager.

## Uninstalling the VCS agents for VVR

If VCS Agents for VVR are not installed on your system, go to "Uninstalling Veritas Volume Replicator (VVR)" on page 30. To uninstall the VCS Agents for VVR, you must first disable the agents.

### Disabling the agents on a system

This section explains how to disable a VCS agent for VVR on a system. To disable an agent, you must change the service group containing the resource type of the agent to an OFFLINE state. Then, you can stop the application or switch the application to another system.

#### To disable the agents

1. Check whether any service group containing the resource type of the agent is online by typing the following command:

   ```
   # hagrp -state service_group -sys system_name
   ```

   If none of the service groups is online, skip to step 3.

2. If the service group is online, take it offline by using one of the following commands:

   To take the service group offline on one system and online it on another system, use the `-switch` option:

   ```
   # hagrp -switch service_group -to system_name
   ```

To take the service group offline without bringing it online on any other system in the cluster, enter:

```
# hagrp -offline service_group -sys system_name
```

3 Stop the agent on the system by entering:

```
# haagent -stop agent_name -sys system_name
```

When you get the message `Please look for messages in the log file`, check the file `/var/VRTSvcs/log/engine_A.log` for a message confirming that each agent has stopped.

You can also use the `ps` command to confirm that the agent is stopped.

4 Now, remove the system from the `SystemList` of the service group. If you disable the agent on all the systems in the `SystemList`, you can also remove the service groups and resource types from the VCS configuration. For instructions, see the chapter on administering VCS from the command line in the *Veritas Cluster Server User's Guide*.

Continue with "Uninstalling Veritas Volume Replicator (VVR)" on page 30. This removes the VCS agents for VVR package.

# Uninstalling Veritas Volume Replicator (VVR)

**Note:** If you are upgrading Veritas Volume Replicator, do not remove the Replicated Data Set, but only remove the VVR packages as described in "Removing the VVR packages" on page 31.

Uninstalling Veritas Volume Replicator (VVR) involves performing the following tasks in the order presented below:

✔ Removing the Replicated Data Set

✔ Removing the VVR packages

For more information on the commands used in this chapter, see *VERITAS Volume Replicator Administrator's Guide*.

## Removing the Replicated Data Set

This section gives the steps to remove a Replicated Data Set (RDS) when the application is either active or stopped.

### To remove the Replicated Data Set

1 Verify that all RLINKs are up-to-date:

```
# vxrlink -g diskgroup status rlink_name
```

If the Secondary is not required to be up-to-date, proceed to step 2 and stop replication using the `-f` option with the `vradmin stoprep` command.

2 Stop replication to the Secondary by issuing the following command on any host in the RDS:

The `vradmin stoprep` command fails if the Primary and Secondary RLINKs are not up-to-date. Use the `-f` option to stop replication to a Secondary even when the RLINKs are not up-to-date.

```
# vradmin -g diskgroup stoprep local_rvgname sec_hostname
```

The argument `local_rvgname` is the name of the RVG on the local host and represents its RDS.

The argument `sec_hostname` is the name of the Secondary host as displayed in the output of the `vradmin printrvg` command.

3 Remove the Secondary from the RDS by issuing the following command on any host in the RDS:

```
# vradmin -g diskgroup delsec local_rvgname sec_hostname
```

The argument *local_rvgname* is the name of the RVG on the local host and represents its RDS.

The argument *sec_hostname* is the name of the Secondary host as displayed in the output of the `vradmin printrvg` command.

4 Remove the Primary from the RDS by issuing the following command on the Primary:

```
# vradmin -g diskgroup delpri local_rvgname
```

When used with the `-f` option, the `vradmin delpri` command removes the Primary even when the application is running on the Primary.

The RDS is removed. Go on to uninstalling Volume Manager to uninstall VVR.

5 If you want to delete the SRLs from the Primary and Secondary hosts in the RDS, issue the following command on the Primary and all Secondaries:

```
# vxedit -r -g diskgroup rm srl_name
```

6 To uninstall the VVR packages, see "Removing the VVR packages" on page 31.

## Removing the VVR packages

**To remove the VVR packages**

1 Insert the software disc, mount it, and enter the following commands:

```
# cd /disc_path/pkgs
# ./installer
```

2 Select Uninstall from the menu.

3 Select VVR. This calls the `uninstallvvr` script.

The program prompts you to confirm whether you want to remove the packages that are being used by other Veritas products.

4 Answer the set of questions depending on your requirements. Note that if you uninstall the VRTSvxvm package you will not be able to use the Veritas Volume Manager functionality.

The program asks you to confirm that you want to remove VVR and then removes all the packages except the infrastructure packages. If open volumes exist, the program prompts you to stop the open volumes and unmount the file systems.

The output is similar to the following:

```
uninstallvvr is now ready to uninstall VVR packages.
All VVR processes that are currently running will be stopped.
Are you sure you want to uninstall VVR packages? [y,n,q] (y)
```

5 Press **Return** to continue. The output is similar to the following:

```
Uninstalling VERITAS Volume Replicator packages on seattle:
Uninstalling VRTStep 1.20.025 on seattle ....Done 1 of 10 steps
Uninstalling VRTSap 2.00.015 on seattle .....Done 2 of 10 steps
Uninstalling VRTSvmman 5.0 on seattle .......Done 3 of 10 steps
Uninstalling VRTSvrdoc 5.0 on seattle .......Done 4 of 10 steps
Uninstalling VRTSvrw 5.0 on seattle .........Done 5 of 10 steps
Uninstalling VRTSweb 5.0 on seattle .........Done 6 of 10 steps
Uninstalling VRTSjre 1.4 on seattle .........Done 7 of 10 steps
Uninstalling VRTSvcsvr 5.0 on seattle .......Done 8 of 10 steps
Uninstalling VRTSvrpro 5.0 on seattle .......Done 9 of 10 steps
Uninstalling VRTSvmpro 5.0 on seattle .......Done 10 of 10 steps
VERITAS Volume Replicator package uninstall completed
successfully.

Uninstallation of VERITAS Volume Replicator has completed
successfully.
The uninstallation summary is saved at:
/opt/VRTS/install/logs/uninstallvvr819160807.summary
The uninstallvvr log is saved at:
/opt/VRTS/install/logs/uninstallvvr819160807.log
```

6 Confirm the packages have been removed.

```
rpm -qa | grep VRTS
```

If you do not have any other Veritas products installed on the system, you can remove the /etc/vx directory, the /usr/lib/vxvm directory, and the /opt/VRTS* directories.

Appendix A

# Configuring the Symantec License Inventory Agent

This appendix includes the following topics:



The Symantec License Inventory Manager installation disc is available separately. For information on how to order the full product, see "How to order the Symantec License Inventory Manager license and media kit" on page 37. The installation media provides online documentation with details on all topics discussed in this appendix.

Read the following Technical Support TechNote for the latest information on updates, patches, and software issues regarding this product:

http://support.veritas.com/docs/282183

You can also download the *Symantec License Inventory Agent 4.1 Release Notes*, from this website.

# About the Symantec License Inventory Manager

The Symantec License Inventory Manager (license inventory manager) is an enterprise asset management tracking tool that inventories Symantec Information Availability products in your network and consolidates critical information on the deployment of these products to facilitate license management and compliance tracking. Using the information provided by the license inventory manager, you can:

- Determine all the Symantec software products and licenses being used in your enterprise
- Achieve easier license self-compliance management
- Know your Enterprise License Agreement deployment status
- Reduce administrative overhead for managing license compliance
- Renew support and maintenance based on the licenses you have deployed
- Gain more control over your Symantec software usage
- Manage department chargebacks based on actual software usage
- Use more flexible licensing and pricing models
- Exploit detailed deployment data to perform return on investment analyses for purchased software

The license inventory manager is a three-tiered system that consists of a server tier, access point tier, and an agent tier. The server tier is the Symantec License Inventory Server, which consolidates and stores information that it gathers from the agents and access points.

The optional access point tier includes Symantec License Inventory Access Points and serves as a consolidation layer between the agents and server.

The agent tier includes Symantec License Inventory Agents, which are deployed on individual hosts in a network. Each agent gathers product information on the supported Symantec products that are installed on the agent's host, then sends the information to an access point or the server.

# When the Symantec License Inventory Agent is installed

The Symantec product installer installs or upgrades the agent on the host with the Symantec product. The agent is installed in the following directory:

`/opt/SYMClma`

The agent is installed with a default configuration that minimizes its impact on a running system. The minimum configuration prevents remote communication with the agent to keep its data and interfaces secure.

# When the server and access points are installed

The server and access points are not installed automatically. If you want to use the Symantec License Inventory Manager, you must manually install the server and, optionally, the access points. After you install the server and access points, the agents can gather information and you can create inventory reports.

You can install the server and access points from the Symantec License Inventory Manager installation disc.

# What you can do with the agent after it is installed

If you are already participating in a Symantec sales program that requires the use of the agent, or if you want to order and deploy the Symantec License Inventory Manager, you can use the agent to track Symantec products on the systems on which it was installed. To use the agent, however, you must manually configure it to enable remote communication between the agent and its server or access point.

Complete instructions for reconfiguring the agent are provided in the *Symantec License Inventory Manager 4.1 Release Notes*. You can download this document from the following website:

http://support.veritas.com/docs/282183

# How to remove the agent

If you do not want to use the Symantec License Inventory Manager, you can remove the agent using the operating system package removal commands to remove the agent packages, which include SYMClma and VRTSsmf.

The server and access point also use the VRTSsmf package. If the server or access point is installed on this host with the agent, you can remove the SYMClma package, but not the VRTSsmf package. If neither the server nor the access point is installed on this host, you can remove both the SYMClma and VRTSsmf packages.

If you remove both packages, remove the SYMClma package first.

Table A-1 lists the commands required to remove these packages on the supported platforms.

**Table A-1** Package removal commands required to remove the agent

| Platform | Package removal command |
|---|---|
| AIX | `installp -u VRTSlma`<br>`installp -u VRTSsmf` |
| HP-UX | `swremove SYMClma`<br>`swremove VRTSsmf` |
| Linux | `rpm evv SYMClma`<br>`rpm evv VRTSsmf` |
| Solaris | `pkgrm VRTSlma`<br>`pkgrm VRTSsmf` |

Later, you can reinstall the agent with the Symantec License Inventory Manager installation disc. This disc is available in the Symantec License Inventory Manager kit.

# How to order the Symantec License Inventory Manager license and media kit

To order a Symantec License Inventory Manager license and media kit, contact your Symantec sales representative.

The installation media provides online documentation for the Symantec License Inventory Manager. You can contact your sales representative to order printed copies of the documentation. The documents you can order include:

- *Symantec License Inventory Manager Installation and Configuration Guide*
- *Symantec License Inventory Manager Administrator's Guide*
- *Symantec License Inventory Manager User's Guide*

# Index

## W