

Veritas FlashSnap™ Agent for Symmetrix Installation Guide

Solaris

5.0

Veritas FlashSnap Agent for Symmetrix Installation Guide

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Veritas FlashSnap™ Agent 5.0 for Symmetrix

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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 | Installing and Configuring Veritas FlashSnap Agent for Symmetrix | |
| | Getting help | 9 |
| | Unique message number | 9 |
| | Symantec product licensing | 9 |
| | Preinstallation instructions | 10 |
| | Installation tasks | 10 |
| | VxFAS packages | 10 |
| | VxFAS prerequisites | 11 |
| | Installing FlashSnap Agent for Symmetrix | 12 |
| | Installing VxFAS using the pkgadd command | 12 |
| | Veritas installation utility | 15 |
| | Loading the software from CD | 15 |
| | Installing VxFAS using the Veritas product installer | 16 |
| | Installing VxFAS using the installsf script | 16 |
| | Installing language packages | 23 |
| | VxFAS Japanese language packages | 23 |
| | Installing VxFAS language packages using pkgadd command | 24 |
| | Installing VxFAS language packages using install_lp script | 24 |
| | Upgrading to VxFAS 5.0 | 25 |
| | Removing the binary package | 26 |
| | Binary package VRTSvxtf 4.0 | 26 |
| | Binary package VRTSfas 4.0 | 27 |
| | Unconfiguring VxFAS | 27 |
| | Coexisting with Storage Foundation for Databases | 28 |
| | Configuring VxFAS on a host where Storage Foundation for Databases is installed | 28 |
| | Unconfiguring VxFAS on a host where Storage Foundation for Databases is installed | 29 |
| | Uninstalling VxFAS software | 29 |
| | Uninstalling using the uninstallsf script | 29 |
| | Uninstalling using the pkgrm command | 31 |
| | Verifying VxFAS installation | 32 |
| | Using VxFAS | 32 |

Installing and Configuring Veritas FlashSnap Agent for Symmetrix

This guide provides information on installing and configuring the Veritas FlashSnap Agent for Symmetrix (VxFAS). VxFAS includes the following product packages:

- Veritas FlashSnap Agent for Symmetrix
- Veritas Cluster Server Agents for Veritas FlashSnap Agent for Symmetrix

For more information on installing the Cluster Server agents, see the Veritas Cluster Server Agents for Veritas FlashSnap Agent for Symmetrix Installation and Configuration Guide. Topics in this guide include:

- [Getting help](#)
- [Symantec product licensing](#)
- [Preinstallation instructions](#)
- [Installing FlashSnap Agent for Symmetrix](#)
- [Installing language packages](#)
- [Upgrading to VxFAS 5.0](#)
- [Unconfiguring VxFAS](#)
- [Coexisting with Storage Foundation for Databases](#)
- [Uninstalling VxFAS software](#)
- [Verifying VxFAS installation](#)

- [Using VxFAS](#)

Getting help

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.

Diagnostic tools are also available to assist in troubleshooting problems associated with the product. These tools are available on disc or can be downloaded from the Veritas FTP site. See the `README.VRTSspt` file in the `/support` directory for details.

For information on purchasing product documentation, visit <http://webstore.veritas.com>.

Unique message number

If you encounter a product error message, record the unique message number preceding the text of the message. When contacting Symantec Technical Support, either by telephone or by visiting the Technical Support website, be sure to provide the relevant message number. Technical Support will use this message number to quickly determine if there are TechNotes or other information available for you.

A unique message number is an alpha-numeric string beginning with the letter “V”. For example, in the message number:

```
V-3-20750: cannot perform log replay
```

the “V” indicates that this is a Veritas product error message. The text of the error message follows the unique message number.

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 procedure (“[Installing FlashSnap Agent for Symmetrix](#)” on page 12) includes instructions on how to activate the key. If you encounter problems while licensing this product, visit the licensing support website at:

<http://www.veritas.com/buy/vLicense/vLicenseHome.jhtml>

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.

Preinstallation instructions

For information on how to install the other Symantec products included with the FlashSnap Agent for Symmetrix, see the respective product installation guides. You can install VxFAS using the Veritas product installer, using the `installsf` script, or using the `pkgadd` command. Follow the installation procedure for Veritas Volume Manager (VxVM) and Veritas File System (VxFS) as described in the *Storage Foundation Installation Guide*.

Note: Only users with superuser privileges can install the Symantec products.

Installation tasks

To install the FlashSnap Agent for Symmetrix:

- 1 Obtain a license key.
- 2 Review preinstallation requirements and make any necessary modifications.
- 3 Install or upgrade the FlashSnap Agent for Symmetrix.
- 4 Initialize the FlashSnap Agent for Symmetrix.

If a previous version of any Symantec product is installed, see “[Upgrading to VxFAS 5.0](#)” on page 25.

VxFAS packages

The Symantec software disc contains the following FlashSnap Agent for Symmetrix packages:

- VRTSfas—Veritas FlashSnap Agent for Symmetrix

- `VRTSfasag`—Veritas Cluster Server Agents for Veritas FlashSnap Agent for Symmetrix
- `VRTSfasdc`—Veritas FlashSnap Agent for Symmetrix Documentation

See *Veritas FlashSnap Agent for Symmetrix Release Notes* for information about the documentation package.

VxFAS prerequisites

Veritas FlashSnap Agent for Symmetrix 5.0 requires:

- Veritas Volume Manager (VxVM) 5.0.
- Veritas File System (VxFS) 5.0.
- Veritas Cluster Server (VCS) 5.0. VCS is required for VxFAS recovery support in a high availability environment.
- Veritas Array Providers (`VRTSvail`) Version 4.4.x.x .
- Solaris 8, or Solaris 9 32-bit or 64-bit operating system.
- Symmetrix Command Line Interface (SYMCLI), EMC Solutions Enabler kit V5.2 or above.
- Symmetrix disk array firmware 5x66 or above.
- EMC PowerPath V3.0 or above. If a PowerPath version prior to 3.0 is installed, upgrade to the current version.
- A SYMCLI license is required to perform TimeFinder operations.
- Ensure that there are enough semaphores configured on your system; one semaphore is required for VxFAS operations.
- Confirm that your system has enough free disk space to install VxFAS. 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 VxFAS for the required and optional packages:

Table 1-1 Approximate disk space used by VxFAS (in kilobytes)

| | <code>/ (root)</code> | <code>/opt</code> | <code>/usr</code> | <code>/var</code> |
|-------------------|-----------------------|-------------------|-------------------|-------------------|
| Required Packages | 100 | 15000 | 3000 | 50 |
| Optional Packages | 2200 | 2000 | 0 | 100 |

The VxVM, VxFS, VCS packages and the Veritas array providers package are part of the Veritas Storage Foundation, and must be installed before installing VxFAS packages. See the *Storage Foundation Installation Guide* for more information.

Installing FlashSnap Agent for Symmetrix

The following sections describe how to install VxFAS using the `pkgadd` command, using the Veritas installation utility, and by invoking the installation script from the command line.

Note: The `VRTSvail` package should be installed before you install any VxFAS packages. See the installation guide for Veritas Storage Foundation for information on installing the `VRTSvail` package.

Installing VxFAS using the `pkgadd` command

Symantec product packages are compressed using GNU compression utilities before writing them to distribution media. Symantec provides the `gunzip` utility on the Symantec software discs so that you can decompress the packages before installing VxFAS using the `pkgadd` command.

The commands used to install these utilities are in the `/sbin` and `/usr/sbin` directories. Add these directories to your `PATH` environment variable. For example, if you are using a Bourne Shell (`sh`) use the command:

```
# PATH=/sbin:/usr/sbin:$PATH
# export PATH
```

If you are using a Korn Shell (`ksh`), use the command:

```
# export PATH=/sbin:/usr/sbin:$PATH
```

If you are using a C shell (`csh` or `tcsh`) use the command:

```
% setenv PATH /sbin:/usr/sbin:${PATH}
```

- 1 After mounting the Symantec software disc that contains the VxFAS packages, move to a directory on your system and copy the compressed VxFAS packages from the `storage_foundation/pkgs` directory:

```
# cp -r
/cdrom/cdrom0/storage_foundation/pkgs/VRTSfas.tar.gz .
# cp -r
/cdrom/cdrom0/storage_foundation/pkgs/VRTSfasag.tar.gz .
# cp -r
/cdrom/cdrom0/storage_foundation/pkgs/VRTSfasdc.tar.gz .
```

- 2 Uncompress the compressed packages:

```
#
/cdrom/cdrom0/storage_foundation/scripts/install/gunzip *.gz
```

- 3 Extract each archived package that you want to install:

```
# tar xv package_name.tar
```

- To install `VRTSfas` using `pkgadd`, install the license package and the Veritas FlashSnap Agent for Symmetrix packages in the order shown.

```
# pkgadd -d . VRTSvlic VRTSfas
```

Follow the instructions displayed the screen.

- Answer **yes** when `pkgadd` prompts about installing the conflicting file `/usr/lib/libarray.so`. The original file is restored when VxFAS is uninstalled.
 - Answer **configure** to the following prompt if you want to use VxFAS:
Do you want to Configure/Unconfigure/Skip VxFAS configuration for system host1 [c,u,s] (s) [?] c
 - Answer **yes** to the following prompt if you want to use VxFAS rules:
Do you want to enable optional EMC configuration rules (y,n)?
- Configuration makes VxFAS registry entries in the VEA Registry file, installs the real `libarray`, and adds the Symmetrix provider under `StorageAgent` and removes it from `VAILAgent`. Restart `StorageAgent` after configuration completes by issuing the following commands:

```
/opt/VRTSobc/pal33/bin/vxpalctrl -a StorageAgent  
-c restart
```
 - Symbolic links to the VxFAS commands and the online manual pages are installed in the `/opt/VRTS/bin` directory and the `/opt/VRTS/man` directory, respectively. Be sure to add the command directory to the end of your `PATH` environment variable, and the manual page directory to your `MANPATH` environment variable.
 - You can now install the `VRTSfasag` package if you have the Veritas Cluster Server installed and you want the VxFAS operation recovery support in your VCS environment.

```
# pkgadd -d . VRTSfasag
```
 - Install the `VRTSfasdc` package if you want the documentation for VxFAS available locally on your system.

```
# pkgadd -d . VRTSfasdc
```
 - Before using VxFAS, you must enter a license key. Enter the license installation command:

```
# vxlicinst
```
 - The system responds with a prompt for the license key. Enter a valid key as shown in the following example:

```
VERITAS License Manager vxlicinst utility version  
3.02.001  
Copyright (C) VERITAS Software Corp 2003. All Rights reserved.
```

Please enter your key: **ABCD-EFGH-IJKL-MNOP-QRS-TU**

License key installed successfully for VERITAS Storage
Foundation Enterprise HA

- 11** If you are installing VxFAS on a host where Storage Foundation for Databases is installed and you are using the deep mapping feature, see [“Coexisting with Storage Foundation for Databases”](#) on page 28 for instructions to ensure coexistence.

Veritas installation utility

Veritas products distributed by Symantec have an automated installation and licensing procedure that lets you install packages using the product installer, or invoke installation scripts from the command line. Alternatively, you can install VxFAS using the `pkgadd` command.

Loading the software from CD

To prepare to install

- 1 Log in as superuser.
- 2 Place the Symantec software disc into a CD-ROM drive connected to your system.

Note: Products are listed on the disc label. VxFAS is part of the Storage Foundation product.

- 3 If Solaris volume management software is running on your system, the CD automatically mounts as `/cdrom/cdrom0`.
- 4 If Solaris volume management software is not available to mount the CD, you must mount it manually. After inserting the CD, enter:

```
# mount -F hfs -o ro /dev/dsk/c0t6d0s2 /cdrom
```

where `c0t6d0s2` is the default address for the CD-ROM drive.

Installing VxFAS using the Veritas product installer

To start the product installer, move to the `cdrom0` directory and enter the `installer` command:

```
# cd /cdrom/cdrom0
# ./installer
```

The installer guides you through the procedure. The steps are similar to those described under “[Installing VxFAS using the installsf script](#)” below.

Note: To function correctly, VxFAS requires that SYMCLI be installed. If SYMCLI is not installed on the host, the VxFAS packages will not be installed by the product installer. To install the VxFAS packages, first install the SYMCLI software from EMC, then run the product installer to install VxFAS packages again.

If you are installing VxFAS on a host where Storage Foundation for Databases is installed and you are using the deep mapping feature, see “[Coexisting with Storage Foundation for Databases](#)” on page 28 for instructions to ensure coexistence.

Installing VxFAS using the installsf script

To install `VRTSfas` using `installsf`

- 1 Move to the `storage_foundation` directory:

```
# cd /cdrom/cdrom0/storage_foundation
```

- 2 Run the Storage Foundation installation script:

```
# ./installsf
```

```
Veritas Storage Foundation 5.0 Installation Program
```

```
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```

```
.  
. .  
. .
```

- 3 The installation program prompts for a system name. Enter one or more system names, separated by a space, on which to install Storage Foundation. For example, `host1`:

```
Enter the system names separated by spaces on which to
```



```
install SF: host1
.
.
.
```

4 The system responds with a prompt for the license key. Enter a valid key as shown in the following example:

```
SF Licensing Verification:
Checking SF license key on host1 ..... not
licensed
Enter a SF license key for
host1:[?] 9999-9999-9999-9999-9999-99
Registering Storage Foundation Enterprise HA SITE key on
host1
Do you want to enter another license key for host1?
[y,n,q,?] (n)
SF licensing completed successfully.
Press [Return] to continue:
```

5 Next you can install the optional packages:

SF can be installed without optional packages to conserve disk space.

- 1) Required Veritas Storage Foundation packages-961 MB required
 - 2) All Veritas Storage Foundation packages-1192 MB required
- Select the packages to be installed on all systems? [1-2,q,?]
(2) 2

Veritas Storage Foundation 5.0 Installation Program

```
installsf will install the following SF packages:
VRTSvlic      Veritas Licensing
VRTSperl     Veritas Perl 5.8.6 Redistribution
VRTSicsco    Symantec Common Infrastructure
VRTSspbx     Symantec Private Branch Exchange
VRTSat       Symantec Product Authentication Service
VRTSobc33    Veritas Enterprise Administrator Core Service
VRTSob       Veritas Enterprise Administrator Service
VRTSobgui    Veritas Enterprise Administrator
VRTSccg      Veritas Enterprise Administrator Central Control
Grid
VRTSmh       Veritas Centralized Management for Storage
Foundations - Managed Host
VRTSaa       Veritas Enterprise Administrator Action Agent
VRTSspt      Veritas Software Support Tools
VRTSvxvm     Veritas Manager Binaries
VRTSdsa      Veritas Datacenter Storage Agent
VRTSfspro    Veritas File System Management Services Provider
VRTSvmman    Veritas Volume Manager Manual Pages
VRTSvmdoc    Veritas Volume Manager Documentation
VRTSdcli     Veritas Distributed Command Line Interface
```

VRTSalloc Veritas Volume Manager Intelligent Storage
Provisioning

Press [Return] to continue:

...continued:

VRTSvmpro Veritas Volume Manager Management Services Provider
VRTSvsvc Veritas Volume Server and Client Provider
VRTSvdid Veritas Device Identification API
VRTSddlpr Veritas Device Discovery Layer Services Provider
VRTSvrpro Veritas Volume Replicator Client Extension and
Provider for
Veritas Enterprise Administrator
VRTSvcsvr Veritas Cluster Server Agents for VVR
VRTSjre Veritas Java Runtime Environment Redistribution
VRTSjre15 Veritas Java Runtime Environment Redistribution
VRTSweb Veritas Java Web Server
VRTSvrw Veritas Volume Replicator Web Console
VRTSvrdoc Veritas Volume Replicator Documentation
VRTSvxfs Veritas File System
VRTSfsman Veritas File System Manual Pages
VRTSfsdoc Veritas File System Documentation
VRTSfssdk Veritas File System Software Developer Kit
VRTSfsmnd Veritas File System Software Developer Kit Manual
Pages
VRTSllt Veritas Low Latency Transport
VRTSgab Veritas Group Membership and Atomic Broadcast
VRTSvxfen Veritas I/O Fencing
VRTSvcs Veritas Cluster Server

Press [Return] to continue:

...continued:

VRTSvcsmsg Veritas Cluster Server Message Catalogs
VRTSvcsag Veritas Cluster Server Bundled Agents
VRTSvcsmn Veritas Cluster Server Man Pages
VRTSvcsdc Veritas Cluster Server Documentation
VRTScutil Veritas Cluster Utilities
VRTScscw Veritas Cluster Server Configuration Wizards
VRTScscm Veritas Cluster Server Cluster Manager
VRTScssim Veritas Cluster Server Simulator
VRTSacclib Veritas ACC Library
VRTScmcs Veritas Cluster Management Console (Single Cluster
Mode)
VRTScmccc Veritas Cluster Management Console Cluster
Connector
VRTSvail Veritas Array Integration Layer
VRTSfas Veritas FlashSnap Agent for Symmetrix
VRTSfasag Veritas Cluster Server Agents for Veritas FlashSnap
Agent for Symmetrix
VRTSfasdc Veritas FlashSnap Agent for Symmetrix Documentation
VRTScpi VERITAS Cross Product Installation Framework

Press [Return] to continue:

Note: VRTSfasag is an optional package.

- 6 The program checks the system and Storage Foundation installation requirements, asks whether you want to do configuration after installation, and installs the packages. Answer yes to the following prompt if you want to use VxFAS:

```
Checking for any AP driver issues
..... None
```

It is possible to install SF packages without performing configuration.

It is optional to configure SF now. If you choose to configure SF later, you can either do so manually or run the `installsf -configure` command.

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

Veritas Storage Foundation 5.0 Installation Program

Installing SF:

- 7 The program asks whether you want to configure VxFAS and whether you want to enable optional EMC configuration rules. Volume Manager has rules and guidelines to ensure that it works with intelligent storage hardware in an EMC Symmetrix environment. Most of the rules apply to Volume Manager tasks, such as creating a disk group, adding disks to a disk group, and allocating storage for a volume. If rules are enabled, warnings display when configurations with objects that cannot be administered by VxFAS are encountered, or there are potential incompatibilities between objects, or there is a possibility of performance loss. For more information, see the *Veritas FlashSnap Agent for Symmetrix Administrator's Guide*:

```
Do you want to Configure/Unconfigure/Skip VxFAS configuration
for system host1 [c,u,s] (s) [?] c
```

Answer configure if you want to use VxFAS (default is skip). Configuration makes VxFAS registry entries in the VEA Registry file, installs the real libarray, and adds the Symmetrix provider under StorageAgent and removes it from VAILAgent.

```
Do you want to enable optional VxFAS EMC configuration rules?
[y,n,q,?] (y) y
```

Answer yes if you want to use the EMC configuration rules.

8 The program asks whether you want to install as a stand alone host or a centrally managed host. Specify **y or **n**:**

```
    Querying fully qualified domain name of host "host1"  
    ..... ok
```

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

Veritas Storage Foundation 5.0 Installation Program

Installation can be one of the following two types:

- * Centrally managed host (Recommended)
- * Standalone host

Pre-requisites for Centrally managed host:

- * A Centralized Management Server (SFMS) is configured
- * SFMS should be currently running.
- * Authentication Broker that is used by SFMS should be running.

The following information would be requested during configuration:

- * The fully qualified host name of the SFMS
- * Root Authentication Broker administrative password
- * Previously set SFMS agent account password

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

Enable this mode if there are multiple hosts with Storage Foundations in the environment. Centralized management allows for seamless management of multiple deployments through a single web based console.

```
Enable Centralized Management? [y,n,q] (y) y
```

```
Enter the Central Management Server hostname, or 'QUIT' to quit  
install.
```

```
Enter Central Management server hostname: [?] host2
```

```
    Querying fully qualified domain name of host "host2"  
    ..... ok
```

```
Is the fully qualified hostname of system "host2" =  
"host2.vxindia.veritas.com"? [y,n,q] (y) y
```

Veritas Storage Foundation 5.0 Installation Program

Register Management Agent:

Centrally managed hosts and the Central Management Server (SFMS) communicate using a pre-created SFMS agent account, `vea_agent`. This account was created as part of the SFMS installation.

Enter the '`vea_agent`' password, or 'QUIT' to quit install.

Verifying '`vea_agent`' password
..... ok

Contacting Central Management Server at host2
..... ok

Configure VEA in MANAGED mode on host1
..... ok

Configuring gridnode on host1
..... ok

Registering gridnode on host1
..... ok

Stopping gridnode on host1
..... ok

Registering StorageAgent on host1
..... ok

Configuring gridnode on host1
..... ok

Stopping gridnode on host1
..... ok

Adding VxFAS provider to Enterprise Administrator Service registry file...

Adding VxFAS provider client extension entries...

Adding VxFAS provider message catalog entries...

Installing real libarray

Enabling symrule.

Configuring Symmetrix provider.

VxFAS provider configuration and installation complete.
To use VxFAS, you must start the Veritas StorageAgent.

```
If Storage Foundations for Databases is installed, and you want
to use Deep mapping, see Veritas Array Configuration Guide for
reconfiguring Symmetrix provider under StorageAgent.
Do you want to start Veritas Storage Foundation processes now?
[y,n,q] (y) y
```

9 The program displays the following summary after completing the installation:

```
Restoring the VxVM configuration on host1; you cannot reset the
default disk group.
```

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

```
/opt/VRTS/install/logs/installsf-TmNCKL
```

```
Reboot all systems on which VxFS was installed or upgraded.
shutdown -y -i6 -g0
```

```
See the Veritas File System Administrators Guide for information
on using VxFS.
14:50:46.
```

- 10** Symbolic links to the VxFAS commands and the online manual pages are installed in the `/opt/VRTS/bin` directory and the `/opt/VRTS/man` directory, respectively. Be sure to add the command directory to end of your `PATH` environment variable, and the manual page directory to your `MANPATH` environment variables (see [“Verifying VxFAS installation”](#) on page 32 for information on other VxFAS command path names).
- 11** If you are installing VxFAS on a host where Storage Foundation for Databases is installed and you are using the deep mapping feature, see [“Coexisting with Storage Foundation for Databases”](#) on page 28 for instructions to ensure coexistence.

Installing language packages

If you are installing a language version, install the language packages required by the packages you have installed.

VxFAS Japanese language packages

The following are the Japanese language packages for VxFAS:

- `VRTSjafas`— Japanese Veritas FlashSnap Agent for Symmetrix
- `VRTSjafag`— Japanese Veritas Cluster Server Agents for Veritas FlashSnap Agent for Symmetrix
- `VRTSjafad`— Japanese Veritas FlashSnap Agent for Symmetrix Documentation

To install these language packages:

- 1 The Veritas Enterprise Administrator (VEA) service must not be running. If it is running, stop it by entering the command:

```
# /opt/VRTSdsa/config/startup.sh stop
```

- 2 Insert the Language CD into the CD-ROM drive. The Solaris volume-management software automatically mounts the CD as `/cdrom/cdrom0`.
- 3 Install the language packages using either `pkgadd` (“[Installing VxFAS language packages using pkgadd command](#)” on page 24) or the language package installation script (“[Installing VxFAS language packages using install_lp script](#)” on page 24).

- 4 Restart the VEA service:

```
# /opt/VRTSdsa/config/startup.sh start
```

- 5 To display the state of the VEA service, type:

```
# /opt/VRTSobc/pal33/bin/vxpalctrl -a StorageAgent -c status
```

Installing VxFAS language packages using pkgadd command

To use pkgadd

- 1 Move to the `storage_foundation/pkgs` directory:

```
# cd /cdrom/cdrom0/ja/storage_foundation/pkgs
```
- 2 Install the language packages

```
# pkgadd -d . VRTSjafas VRTSjafag VRTSjafad
```

Note: Install the `VRTSjafag` package only if you previously installed the `VRTSfasag` package for high availability support.

- 3 In addition to the VxFAS language packages, you must also install the language packages for VxVM and Veritas Array Providers. See the *Veritas Storage Foundation Installation Guide* for more information.

Installing VxFAS language packages using install_lp script

For the following procedure, the `install_lp` command must use the `ssh` or `rsh` commands as root on all systems in the cluster (see the `ssh(1)` and `rsh(1)` manual pages for more information). Make sure that permissions are granted for the system on which `install_lp` is run.

To use install_lp

- 1 Move to the `cdrom0` directory:

```
# cd /cdrom/cdrom0
```
- 2 Enter the installer command:

```
# ./install_lp
```

This command installs the language packages required by Symantec products.

Upgrading to VxFAS 5.0

If a previous version of the Veritas Utilities *for TimeFinder* (Version 4.0) or Veritas FlashSnap Agent for Symmetrix (Version 4.0) is already installed with or without the maintenance patches, you can upgrade to the VxFAS 5.0 release. VxVM version 4.1 must be installed before upgrading to FlashSnap Agent for Symmetrix.

To upgrade

- 1 If an older version of VxFS is installed, upgrade to VxFS 4.1 before upgrading VxVM. See the *Veritas Storage Foundation Installation Guide* for instructions on how to upgrade VxFS.
- 2 Upgrade VxVM to Volume Manager version 4.1. See the *Veritas Storage Foundation Installation Guide* for instructions on how to upgrade to Volume Manager Release 4.1. Make sure the `VRTSvmpro 4.1` package is installed.
- 3 Upgrade to EMC Solutions Enabler kit V5.2 or above.
- 4 Upgrade to EMC PowerPath V3.0 or above.
- 5 Remove the old packages. See “[Removing the binary package](#)” on page 26 for instructions.
- 6 If an older version of VRTSvail is installed, upgrade to VRTSvail 4.4.*
- 7 Add the `VRTSfas 5.0` package. See “[Installing FlashSnap Agent for Symmetrix](#)” on page 12 for instructions.

Note: The release of VxFAS 4.1 and later requires the Veritas Array Providers (`VRTSvail`) package to be installed before any VxFAS packages are installed. So, you will need to install the required version of `VRTSvail` package even if you are upgrading to VxFAS 5.0 in both mixed and EMC Symmetrix-only SAN environment. After installing the `VRTSvail` package, you will be able to use the performance statistics and deep mapping features provided by `VRTSvail` for EMC Symmetrix and other supported storage arrays.

- 8 If you want HA functionality, install the `VRTSfasag 4.1` package. To recreate the HA configuration, see the “Guidelines for Creating Service Groups and Resources” section of the Veritas Cluster Server Agents for Veritas FlashSnap Agent for Symmetrix Installation and Configuration Guide.

Note: The existing resource configuration for VxTF 4.0 or VxFAS 4.0 resource types can be reused for the VxFAS 4.1 cluster resource configuration.

Removing the binary package

This section contains instructions for removing different versions of the binary package.

Binary package VRTSvxtf 4.0

To remove the VRTSvxtf 4.0 package

- 1 Recover any unprocessed log (/etc/vx/emc.d/vxsymlog.txt). Type:
vxsymrecover
- 2 Remove the VRTStfag package if it is installed.
pkgrm VRTStfag
- 3 Remove the VRTSvxtf package:
pkgrm VRTSvxtf
- 4 Remove the VRTSv1sp package:
pkgrm VRTSv1sp

Binary package VRTSfas 4.0

To remove the VRTSfas 4.0 package.

- 1 Recover any unprocessed log (/etc/vx/emc.d/vxsymlog.txt). Type:

```
# vxsymrecover
```
- 2 It is advisable to stop the Veritas Enterprise Administrator Service (vxsvc) before you uninstall the VxFAS software. To stop the vxsvc server, type:

```
# /opt/VRTSdsa/config/startup.sh stop
```
- 3 Remove the Japanese language packages for VxFAS if you have installed them:

```
# pkgrm VRTSjafas VRTSjafag VRTSjafad
```
- 4 Remove the VxFAS packages using the pkgrm command, starting with the optional package VRTSfasag.

```
# pkgrm VRTSfasag VRTSfas VRTSfasdc
```

Follow the instructions displayed on the screen.
- 5 After the uninstall completes, remove the directory /etc/vx/emc.d if it exists.

```
# rm -r /etc/vx/emc.d
```

Unconfiguring VxFAS

To unconfigure VxFAS

- 1 Follow the instructions in “[To prepare to install](#)” on page 15.
- 2 Move to the storage_foundation directory:

```
# cd /cdrom/cdrom0/storage_foundation
```
- 3 Run the Storage Foundation installation script:

```
# ./installsf -configure
```

The following question is displayed:

```
Do you want to Configure/Unconfigure/Skip VxFAS
configuration for system host1 [c,u,s] (s) [?]
```
- 4 Enter **u** to unconfigure VxFAS. Unconfiguring VxFAS removes VxFAS registry entries from the VEA Registry file, installs the stub libarray, and removes the Symmetrix provider from StorageAgent and adds it under VAILAgent.
- 5 Issue the following to restart StorageAgent after unconfiguration completes:

```
/opt/VRTSobc/pal33/bin/vxpalctrl -a StorageAgent
-c restart
```

- 6 If VxFAS is installed on a host where Storage Foundation for Databases is installed, continue at [“Unconfiguring VxFAS on a host where Storage Foundation for Databases is installed”](#) on page 29.

Coexisting with Storage Foundation for Databases

If VxFAS is installed on a host where Storage Foundation for Databases is installed and you are using deep mapping, follow the instructions in this section to ensure coexistence.

Configuring VxFAS on a host where Storage Foundation for Databases is installed

After VxFAS is configured, remove the Symmetrix provider from all agents except StorageAgent

- 1 If the Symmetrix provider is running under an agent other than StorageAgent, determine whether the other agent is running. Issue the following:

```
/opt/VRTSobc/pal33/bin/vxpalctrl -a OtherAgentName -c status
```
- 2 Remove the Symmetrix provider from the agent by issuing the following:

```
/opt/VRTSvail/bin/vaildiag /removearrayprovider -agentname AgentName -provider vx_emc_symmetrix
```
- 3 If you determined, in step 1, that the agent from which you removed the Symmetrix provider was running, do one of the following
 - If other providers are configured under the agent, issue the following to restart the agent:

```
/opt/VRTSobc/pal33/bin/vxpalctrl -a AgentName -c restart
```
 - If no other providers are configured under the agent, issue the following to stop the agent:

```
/opt/VRTSobc/pal33/bin/vxpalctrl -a AgentName -c stop
```
- 4 Repeat steps 1-3 for each agent, other than StorageAgent, where the Symmetrix provider is configured.

Unconfiguring VxFAS on a host where Storage Foundation for Databases is installed

If you want to continue to use deep mapping after unconfiguring VxFAS, start or restart the VAILAgent or configure the Symmetrix provider to run under a different agent.

To start the VAILAgent

- ◆ Issue the following:

```
/opt/VRTSobc/pal33/bin/vxpalctrl -a VAILAgent -c start
```

To restart the VAILAgent

- ◆ Issue the following:

```
/opt/VRTSobc/pal33/bin/vxpalctrl -a VAILAgent -c  
restart
```

To configure the Symmetrix provider to run under a different agent

- ◆ Issue the following:

```
/opt/VRTSvail/bin/vaildiag /addarrayprovider -agentname  
AgentName -provider vx_emc_symmetrix
```

Uninstalling VxFAS software

You can uninstall the Veritas FlashSnap Agent for Symmetrix using the `uninstallsf` script or using the `pkgrm` command.

It is advisable to stop the Veritas Enterprise Administrator Service (`vxsvc`) before you uninstall the VxFAS software. To stop the `vxsvc` server, type:

```
# /opt/VRTSdsa/config/startup.sh stop
```

Continue with either “[Uninstalling using the uninstallsf script](#)” or “[Uninstalling using the pkgrm command](#).”

Uninstalling using the uninstallsf script

To use uninstallsf

- 1 Perform recovery of any crashed VxFAS operation if required:

```
# vxsymrecover
```

- 2 Mount the Storage Foundation software disc (see “[Loading the software from CD](#)” on page 15) and move to the `storage_foundation` directory:

```
# cd /cdrom/cdrom0/storage_foundation
```

- 3 Run the Storage Foundation uninstall script:

```
# ./uninstallsf
```

- 4 The `uninstallsf` script prompts for a system name. Enter one or more system names, separated by a space, from which to uninstall Storage Foundation. For example, `host1`:

```
Enter the system names separated by spaces from which to  
uninstall SF: host1
```

- 5 After the uninstall completes, remove the directory `/etc/vx/emc.d` if it exists.

```
# rm -r /etc/vx/emc.d
```

Uninstalling using the `pkgrm` command

To use `pkgrm`

- 1 Remove the Japanese language packages for VxFAS if you have installed them:

```
# pkgrm VRTSjafas VRTSjafag VRTSjafad
```

- 2 Remove the VxFAS packages using the `pkgrm` command, starting with the optional package `VRTSfasag`. Do not remove the license packages `VRTSvlic` or `VRTSllic` if there are other products installed.

```
# pkgrm VRTSfasag VRTSfas VRTSfasdc
```

Follow the instructions displayed on the screen.

- 3 After the uninstall completes, remove the directory `/etc/vx/emc.d` if it exists.

```
# rm -r /etc/vx/emc.d
```

Note: If you are not using the Veritas Array Providers with any other product like Veritas Storage Foundation for Oracle, then you can remove the packages `VRTSjaap` and `VRTSvail`. Do not remove these packages unless you are sure that these were being used with VxFAS only.

Verifying VxFAS installation

The Veritas FlashSnap Agent for Symmetrix package consists of commands for VxFAS operations. The VxFAS commands are installed in following directories:

| | |
|--------------------------------|---|
| <code>/etc/vx/emc.d/bin</code> | Contains the VxFAS helper utilities and <code>vxtfexplorer</code> script. |
| <code>/usr/sbin</code> | Contains the VxFAS command line utilities. |
| <code>/opt/VRTS/bin</code> | Contains symbolic links to the VxFAS commands installed in the above directory. |

Determine whether these subdirectories are present:

```
# ls /etc/vx/emc.d
# ls /usr/sbin
# ls /opt/VRTSvxtf
# ls /opt/VRTS/bin
```

Add only the symbolic link directory at the end of your PATH environment variable to make all Symantec product commands accessible as shown in the following Korn Shell example:

```
PATH=$PATH:/opt/VRTS/bin:/etc/vx/emc.d/bin; export PATH
```

The VxFAS VCS Agents are installed with the `VRTSfasag` package in directory:

| | |
|-------------------------------|--|
| <code>/opt/VRTSvcs/bin</code> | Contains the <code>VxSymDevGrp</code> , <code>VxSymLog</code> , and <code>VxSymRecover</code> agent. |
|-------------------------------|--|

Using VxFAS

After you have installed VxFAS software, you can configure any VxVM disk groups having EMC Symmetrix disks for snapshot operations. See the *Veritas FlashSnap Agent for Symmetrix Administrator's Guide* for information about using VxFAS.