# VERITAS Foundation Suite™ and Foundation Suite HA 3.5

## Release Notes

**Solaris**

VERITAS

# VERITAS Foundation Suite Release Notes

This guide provides information on the VERITAS Foundation Suite™ and Foundation Suite HA release 3.5. The 3.5 release of Foundation Suite (FST) and Foundation Suite HA (FST HA) operates on the following Solaris operating systems:

Solaris 2.6

Solaris 7 (32-bit and 64-bit)

Solaris 8 (32-bit and 64-bit)

Solaris 9 (32-bit and 64-bit)

The Foundation Suite is comprised of the following products:

VERITAS Volume Manager™ ¹ (VxVM)

VERITAS File System™ ¹ (VxFS)

VERITAS SANPoint Control™ (SPC) QuickStart

Foundation Suite HA is comprised of the above products and:

VERITAS Cluster Server™ (VCS)

There is also a limited-feature version of FST called VERITAS Foundation Suite QuickStart.

The following feature is automatically licensed with FST/FST HA:

VERITAS QuickLog

The following separately licensable features are installed with FST/FST HA:

VERITAS Volume Replicator™

VERITAS FlashSnap™

VERITAS Storage Mapping

Review this entire document before installing VERITAS Foundation Suite components. Also read the individual product release notes for important information, such as required patches and software issues, specific to those products (see "Component Product Release Notes" on page 13).

Topics in this guide include:

- Getting Help
- Installing FST/ FST HA
    - Component Product Licensing
    - VERITAS Licensing Commands
- Foundation Suite
- Foundation Suite HA
- Foundation Suite QuickStart
- SANPoint Control QuickStart
- Separately Licensable Features
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    - FST, FST HA, and Foundation Suite QuickStart Documentation
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    - Volume Replicator Documentation
    - Component Product Release Notes
- Software Issues for VERITAS FST/FST HA

# Getting Help

For assistance with any of the VERITAS products, contact VERITAS Technical Support:

◆ U.S. and Canadian Customers: 1-800-342-0652

◆ International: +1-650-527-8555

◆ Email: support@veritas.com

For license information:

◆ Phone: 1-925-931-2464

◆ Email: license@veritas.com

◆ Fax: 1-925-931-2487

For software updates:

◆ Email: swupdate@veritas.com

For information on purchasing VERITAS products:

◆ Phone: 1-800-258-UNIX (1-800-258-8649) or 1-650-527-8000

◆ Email: vx-sales@veritas.com

For additional information about VERITAS and VERITAS products, visit the website at:

http://www.veritas.com

For software updates and additional technical support information, such as TechNotes, product alerts, and hardware compatibility lists, visit the VERITAS Technical Support website at:

http://support.veritas.com

# The VRTSexplorer Diagnostic Program

The VRTSexplorer program is available to assist VERITAS Customer Support engineers in diagnosing technical problems associated with VERITAS products. You can download this program from the VERITAS FTP site or install it from the VERITAS CD. For more information about the VRTSexplorer program, consult the README file located in the support directory.

## Downloading VRTSexplorer from the Web

1. Use a web browser or the ftp program to download the VRTSexplorer program from the following URL:

   ftp://ftp.veritas.com/pub/support/vxexplore.tar.Z

   Save the file to a temporary directory, such as /tmp, as shown in the example session below.

2. Log in as root on the system that is experiencing the problem. Extract the contents of the downloaded file to the directory /tmp/VRTSexplorer:

   ```
   # cd /tmp
   # zcat vxexplore.tar.Z | tar xvf -
   ```

3. Run the VRTSexplorer program located in the VRTSexplorer directory:

   ```
   # /tmp/VRTSexplorer/VRTSexplorer
   ```

4. When VRTSexplorer prompts for a destination directory for the information that it collects, press Return to accept the default directory /tmp, or enter an alternative path name of your own choice. VRTSexplorer writes the results of its analysis to a compressed tar file named VRTSexplorer_*casenumber_hostname*.tar.Z in the specified directory.

5. Use the file upload facility of your web browser, or the ftp program, to transfer the VRTSexplorer output file to the VERITAS Customer Support anonymous FTP site:

   ftp://ftp.veritas.com/incoming

6. Telephone VERITAS Technical Support at the number listed under "Getting Help" on page 3. Tell them that you have run VRTSexplorer and provide the name of the file that you transferred to the FTP site.

   Alternatively, if you have already been assigned a call ID number by Customer Support, send email to support@veritas.com and include your case ID number in the subject line.

## Installing VRTSexplorer from the VERITAS Software Disc

The file VRTSspt package is included on the VERITAS CD under the /support directory. To load the software from the software disc:

1. Log in as superuser.

2. Place the VERITAS software VERITAS software disc into a CD-ROM drive connected to your system.

3. If Solaris volume management software is running on your system, when you insert the VERITAS software disc it is automatically mounted as /cdrom/cdrom0.

4. If Solaris volume management software is not available to mount the VERITAS software disc automatically, you must mount it manually. After inserting the disc, enter:

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

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

5. Move to the support directory and install the VRTSspt package:

   ```
   # cd /cdrom/cdrom0/foundation_suite/support
   # pkgadd -d . VRTSspt
   ```

6. The program is installed in the /opt/VRTSspt directory and takes approximately 500 KB of disk space. To run the program, enter:.

   ```
   # /opt/VRTSspt/VRTSexplorer/VRTSexplorer
   ```

7. Use the file upload facility of your web browser, or the ftp program, to transfer the VRTSexplorer output file to the VERITAS Customer Support anonymous FTP site:

   ```
   ftp://ftp.veritas.com/incoming
   ```

8. Telephone VERITAS Customer Support at the number listed under "Getting Help" on page 3. Tell them that you have run VRTSexplorer and provide the name of the file that you transferred to the FTP site.

   Alternatively, if you have already been assigned a call ID number by Customer Support, send email to support@veritas.com and include your case ID number in the subject line.

9. To remove the VRTSspt package, enter:

   ```
   # pkgrm VRTSspt
   ```

# Installing FST/ FST HA

There are multiple software discs in the VERITAS product distribution. Foundation Suite is on *VERITAS Storage Solutions 3.5 for Solaris* Disc 2. VERITAS Cluster Server, which provides the high availability functionality of FST HA, is on *VERITAS Storage Solutions 3.5 for Solaris* Disc 1.

The VERITAS software discs have an automated installation and licensing procedure that lets you install packages using an Installation Menu instead of installing from the command line. The *Product License and Installation Guide*, included with the VERITAS software disc, provides complete information on using the Installation Menu. Review the *Product License and Installation Guide* before installing FST or FST HA.

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**Note** Because the Foundation Suite packages and VERITAS Cluster Server packages are on different software discs, using the Installation Menu to install the FST HA product requires that you remove the disc with Foundation Suite and insert the disc with VCS, then provide the path to the `cluster_server` directory to complete the FST/HA installation (see "Using the Installation Menu to Install Products from Two Discs" on page 14).

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Alternatively, you can go to the `foundation_suite/pkgs` directory on VERITAS software disc 2 and install the individual FST component products using the `pkgadd` command. Go to the `cluster_server/pkgs` directory on disc 1 to install the FST HA functionality using the command line.

Review the individual product installation guides before starting the installation.

## Component Product Licensing

A Foundation Suite key licenses VxVM, VxFS, and SPC QuickStart.

A Foundation Suite HA key licenses VxVM, VxFS, SPC QuickStart, and VCS.

A Foundation Suite QuickStart key licenses a limited version of VxVM and VxFS.

During an individual product installation, you are prompted for the license key. When you enter a Foundation Suite or Foundations Suite HA key, it automatically licenses the other products. This means you do not have to re-enter a license key when you install another Foundation product.

The Foundation Suite QuickStart product allows upgrading to the full feature set with the addition of an FST license key.

Some Foundation Suite products require a separate license key (see "Separately Licensable Features" on page 10).

## VERITAS Licensing Commands

The VERITAS licensing commands are provided in the `VRTSvlic` package. You must install `VRTSvlic` for the licensing process to work. There are three licensing commands:

`vxlicinst`—Installs a VERITAS license key.

`vxlicrep`—View currently installed licenses.

`vxlictest`—Retrieves features that are encoded in a license key along with their descriptions.

You can review the descriptions and available options for these commands in the online manual pages installed with the `VRTSvlic` package.

# Foundation Suite

The Foundation Suite consists of the VERITAS File System, VERITAS Volume Manager, and the SANPoint Control QuickStart products, plus the VERITAS QuickLog feature. A Foundation Suite key licenses VxFS, VxVM, SPC QuickStart, and the QuickLog feature.

VxFS is a quick-recovery, journaling file system that provides the high performance and online management capabilities.

VxVM is a storage management tool that manages physical disks as logical device volumes, removing the limitations of physical disk storage partitions.

The QuickLog feature enhances file system performance for metadata intensive applications such as mail serving. Although QuickLog can improve file system performance, VxFS does not require QuickLog to operate effectively.

See "SANPoint Control QuickStart" on page 9 for information on SPC QuickStart.

# Foundation Suite HA

Foundation Suite HA adds the application failover support provided by the VERITAS Cluster Server. A Foundation Suite HA key licenses VCS in addition to VxFS, VxVM, SPC QuickStart, and the QuickLog feature.

# Foundation Suite QuickStart

Foundation Suite QuickStart is a limited feature set of VERITAS File System and VERITAS Volume Manager functionality. Foundation Suite QuickStart provides high performance and data integrity for environments with less stringent availability and management requirements. FST QuickStart uses the same binaries as FST, so upgrading to the full functionality of VERITAS Foundation Suite requires only the installation of an FST license key—no product installation or reboot is needed. To enable Foundation Suite options, such as FlashSnap and VERITAS Storage Mapping, you must first upgrade to VERITAS Foundation Suite.

The features listed below are available in Foundation Suite, but are not included with Foundation Suite QuickStart.

**VERITAS Base File System Features (not available in FST QuickStart)**

◆ Online file system resize

◆ Online file system defragment

◆ Online disk layout upgrade

◆ Snapshot file systems

◆ Group quotas

◆ Forced unmount

◆ DMAPI (Data Management API, used with hierarchical storage management (HSM)

◆ Space reservation and setting extent sizes

◆ Caching advisories

◆ The `mount` command options remount, mincache and convosync (including direct and Discovered Direct I/O, and I/O error handling

**VERITAS Base Volume Manager Features (not available in FST QuickStart)**

◆ Striping

◆ Mirroring of user-data disks (QuickStart does include root mirroring)

◆ Striping + mirroring (RAID 0+1)

◆ Mirrored stripes (RAID 1+0)

◆ RAID-5

◆ RAID-5 with logging

◆ Log-based mirror recovery (dirty region logging)

◆ SmartSync (Oracle resilvering)

◆ Hot-sparing/hot relocation

◆ Dynamic multipathing (DMP)

◆ Online data migration

◆ Snapshots

◆ Task monitoring

◆ Online relayout

# SANPoint Control QuickStart

SANPoint Control lets you monitor and visualize Storage Area Network configurations. SANPoint Control QuickStart is a limited feature set of SPC.

**VERITAS Base SANPoint Control Features (not available in SANPoint Control QuickStart)**

◆ Disk array management (LUN masking and array port binding)

◆ Switch management (zone and zone alias creation/modification)

◆ Policy-based management (performance graphs/reports)

◆ SANPoint Control Server command line interface

# Separately Licensable Features

The following features are installed with FST/FST HA, but require a separate product license key.

VERITAS Volume Replicator (VVR) is a data-replication software designed to contribute to an effective disaster recovery plan by maintaining an exact or consistent copy of application data at one or more remote locations.

VERITAS FlashSnap provides various point-in-time copy applications on enterprise systems. FlashSnap implements flexible solutions to efficiently manage multiple point-in-time copies of data and reduce resource contention on critical data servers.

VERITAS Storage Mapping enables applications to visualize the storage virtualization stack—through VxFS and VxVM—from a VxFS file down to the physical disk drive. VERITAS Storage Mapping does not provide visualization itself, but supplies an interface for other applications, such as VERITAS SANPoint Control, to do so.

# Documentation

The VERITAS Foundation Suite documentation is on VERITAS software disc 2 under the `foundation_suite/`docs directory. The VERITAS Cluster Server documentation, describing the high availability functionality of FST HA is on VERITAS software disc 1 under the `cluster_server/`docs directory. After the installation procedure is complete, documents are available online under the `/opt/VRTS`*package_name*`/doc` directories. Documents are provided as Adobe Portable Document Format (PDF) files. To view or print PDF documents, you must have the Adobe Acrobat Reader installed.

## FST, FST HA, and Foundation Suite QuickStart Documentation

VRTSfsdoc—VERITAS File System documentation.

*VERITAS File System Installation Guide* (includes QuickLog information)

*VERITAS File System Administratrator's Guide*

VRTSvmdoc—VERITAS Volume Manager documentation.

*VERITAS Volume Manager Installation Guide*

*VERITAS Volume Manager Administratrator's Guide*

*VERITAS Volume Manager User's Guide – VERITAS Enterprise Administrator*

*VERITAS FlashSnap Point-In-Time Copy Solutions Administrator's Guide*

*VERITAS Volume Manager Troubleshooting Guide*

*VERITAS Volume Manager Migration Guide*

*VERITAS Volume Manager Hardware Notes*

## Foundation Suite HA Documentation Only

VRTSvcsdc—VERITAS Cluster Server documentation.

*VERITAS Cluster Server User's Guide*

*VERITAS Cluster Server Installation Guide*

*VERITAS Cluster Server Bundled Agents Reference Guide*

*VERITAS Cluster Server Agent Developer's Guide*

*VERITAS Cluster Server Application Note: Sun StorEdge 3x00 Disk Array*

*VERITAS Cluster Server Application Note: Sun StorEdge 5000 Disk Array*

*VERITAS Cluster Server Application Note: Sun Enterprise 10000 Dynamic Reconfiguration*

*VERITAS Cluster Server Application Note: Replicated Data Cluster for VCS*

## SANPoint Control QuickStart Documentation

`VRTSspc`—The SANPoint Control 3.5 manuals distinguish between topics that apply to the full version of SANPoint Control and SANPoint Control QuickStart.

*Administering SANPoint Control*

*The Architecture of VERITAS SANPoint Control*

*Getting an Overview of SANPoint Control*

*Configuring Your SAN and Installing SANPoint Control*

*Monitoring and Resolving Problems on the SAN With SANPoint Control*

*Provisioning SAN Resources With SANPoint Control*

*Analyzing SAN Inventory and Performance With SANPoint Control*

*SANPoint Control HW/ SW Support Matrix*

*Troubleshooting SANPoint Control*

*Viewing Your SAN With SANPoint Control*

## Volume Replicator Documentation

`VRTSvrdoc`—VERITAS Volume Replicator documentation

*Volume Replicator Administrator s Guide*

*Volume Replicator Configuration Notes*

*Volume Replicator Web Console Administrator s Guide*

## Component Product Release Notes

The VERITAS Foundation Suite and Foundation Suite HA product release notes are located under the `foundation_suite/release_notes` directory of VERITAS software disc 2 or the `cluster_server/release_notes` directory of VERITAS software disc 1. It is important that you read the relevant product release notes before installing FST, FST HA, or FST QuickStart:

*VERITAS File System Release Notes* (`vxfs_notes.pdf`)

*VERITAS Volume Manager Release Notes* (`vxvm_notes.pdf`)

*VERITAS Cluster Server Release Notes* (`vcs_notes.pdf`)

*VERITAS SANPoint Control Release Notes* (`spc_notes.pdf`)

*VERITAS Cluster Server Enterprise Agent for Volume Replicator Release Notes* (`vcsvvr_notes.pdf`)

*VERITAS Volume Replicator Web Console Release Notes* (`vrw_notes.pdf`)

*VERITAS Volume Replicator Release Notes* (`vvr_notes.pdf`)

Because product release notes are not installed by any packages, VERITAS recommends that you copy them to the `/opt/VRTSproduct_name/doc` directory after the product installation so that they are available for future reference.

# Software Issues for VERITAS FST/FST HA

▼ **Solaris 2.6 EOSL**

Sun Microsystems has announced the End of Support Life for Solaris 2.6. Contact Sun customer support for more information.

▼ **Cannot Mirror Root Disk Using the VERITAS Enterprise Administrator GUI**

If a system is licensed only for Foundation Suite QuickStart, the VEA GUI cannot be used to mirror the root disk The alternative is to run the Volume Manager `vxdiskadm` command from the command line. The `vxdiskadm` command invokes a menu-driven interface. Select Option 6, `Mirror volumes on a disk`, to perform the root disk mirroring procedure.

▼ **Using the Installation Menu to Install Products from Two Discs**

The procedure for installing products that have binary packages on two different VERITAS installation discs may be unclear. When you install HA products using the Installation Menu, use the following procedure.

1. Insert the *VERITAS Storage Solutions 3.5 for Solaris* Disc 2 into the CD-ROM drive and invoke the installer:

   ```
   # /cdrom/cdrom0/installer
   ```

2. Choose `Foundation Suite (QuickStart, HA & FlashSnap)` from the list of products.

3. After the first part of the installation completes, answer `Yes` when prompted to install VCS. The following message displays:

   ```
   Cluster Server packages are not on this CDROM
   Please insert the CDROM that contains the Cluster Server
   packages, or change to a path with Cluster Server packages.
   Press:
     <enter> if you have inserted the CDROM with Cluster Server
     <a> to enter an alternate location
     <q> to quit
   ```

4. If you can open another window, eject the CD:

   ```
   # eject
   ```

5. Insert the *VERITAS Storage Solutions 3.5 for Solaris* Disc 1 into the CD-ROM drive and press the Enter key in the Installer window to continue the installer script.

6. If you cannot open a second window, enter `q` to quit.

7. Eject the CD:

   ```
   # eject
   ```

8. Insert the *VERITAS Storage Solutions 3.5 for Solaris* Disc 1 into the CD-ROM drive and run the installer command again:

   ```
   # /cdrom/cdrom0/installer
   ```

9. Choose `Cluster Server` from the list of products to install. This will complete the installation.

10. Reboot the system:

    ```
    # reboot
    ```