

# Veritas Storage Foundation™ 6.0.1 Release Notes - Solaris

# Veritas Storage Foundation Release Notes

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# Technical Support

Symantec Technical Support maintains support centers globally. Technical Support's primary role is to respond to specific queries about product features and functionality. The Technical Support group also creates content for our online Knowledge Base. The Technical Support group works collaboratively with the other functional areas within Symantec to answer your questions in a timely fashion. For example, the Technical Support group works with Product Engineering and Symantec Security Response to provide alerting services and virus definition updates.

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## Contacting Technical Support

Customers with a current support agreement may access Technical Support information at the following URL:

[www.symantec.com/business/support/contact\\_techsupp\\_static.jsp](http://www.symantec.com/business/support/contact_techsupp_static.jsp)

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When you contact Technical Support, please have the following information available:

- Product release level
- Hardware information

- Available memory, disk space, and NIC information
- Operating system
- Version and patch level
- Network topology
- Router, gateway, and IP address information
- Problem description:
  - Error messages and log files
  - Troubleshooting that was performed before contacting Symantec
  - Recent software configuration changes and network changes

## Licensing and registration

If your Symantec product requires registration or a license key, access our technical support Web page at the following URL:

[www.symantec.com/business/support/](http://www.symantec.com/business/support/)

## Customer service

Customer service information is available at the following URL:

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Customer Service is available to assist with non-technical questions, such as the following types of issues:

- Questions regarding product licensing or serialization
- Product registration updates, such as address or name changes
- General product information (features, language availability, local dealers)
- Latest information about product updates and upgrades
- Information about upgrade assurance and support contracts
- Information about the Symantec Buying Programs
- Advice about Symantec's technical support options
- Nontechnical presales questions
- Issues that are related to CD-ROMs or manuals

## Support agreement resources

If you want to contact Symantec regarding an existing support agreement, please contact the support agreement administration team for your region as follows:

Asia-Pacific and Japan [customercare\\_apac@symantec.com](mailto:customercare_apac@symantec.com)

Europe, Middle-East, and Africa [semea@symantec.com](mailto:semea@symantec.com)

North America and Latin America [supportolutions@symantec.com](mailto:supportsolutions@symantec.com)

## Documentation

Product guides are available on the media in PDF format. Make sure that you are using the current version of the documentation. The document version appears on page 2 of each guide. The latest product documentation is available on the Symantec website.

<https://sort.symantec.com/documents>

Your feedback on product documentation is important to us. Send suggestions for improvements and reports on errors or omissions. Include the title and document version (located on the second page), and chapter and section titles of the text on which you are reporting. Send feedback to:

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For information regarding the latest HOWTO articles, documentation updates, or to ask a question regarding product documentation, visit the Storage and Clustering Documentation forum on Symantec Connect.

<https://www-secure.symantec.com/connect/storage-management/forums/storage-and-clustering-documentation>

## About Symantec Connect

Symantec Connect is the peer-to-peer technical community site for Symantec's enterprise customers. Participants can connect and share information with other product users, including creating forum posts, articles, videos, downloads, blogs and suggesting ideas, as well as interact with Symantec product teams and Technical Support. Content is rated by the community, and members receive reward points for their contributions.

<http://www.symantec.com/connect/storage-management>

# Storage Foundation Release Notes

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## About this document

This document provides important information about Veritas Storage Foundation (SF) version 6.0.1 for Solaris. Review this entire document before you install or upgrade SF.

The information in the Release Notes supersedes the information provided in the product documents for SF.

This is "Document version: 6.0.1 Rev 5" of the *Veritas Storage Foundation Release Notes*. Before you start, make sure that you are using the latest version of this guide. The latest product documentation is available on the Symantec Web site at:

<https://sort.symantec.com/documents>

## Component product release notes

In addition to reading this Release Notes document, review the component product release notes before installing the product.

Product guides are available at the following location on the software media in PDF formats:

`/docs/product_name`

Symantec recommends copying the files to the `/opt/VRTS/docs` directory on your system.

## About Veritas Storage Foundation

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

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

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

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

Veritas Storage Foundation includes the dynamic multi-pathing functionality.

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

Before you install the product, read the *Veritas Storage Foundation Release Notes*.



To install the product, follow the instructions in the *Veritas Storage Foundation Installation Guide*.

## About Symantec Operations Readiness Tools

**Symantec Operations Readiness Tools (SORT)** is a Web site that automates and simplifies some of the most time-consuming administrative tasks. SORT helps you manage your datacenter more efficiently and get the most out of your Symantec products.

SORT can help you do the following:

- |   |  |
|---|--|
| Prepare for your next installation or upgrade | <ul style="list-style-type: none"><li>■ List product installation and upgrade requirements, including operating system versions, memory, disk space, and architecture.</li><li>■ Analyze systems to determine if they are ready to install or upgrade Symantec products.</li><li>■ Download the latest patches, documentation, and high availability agents from a central repository.</li><li>■ Access up-to-date compatibility lists for hardware, software, databases, and operating systems.</li></ul> |
| Manage risks                                  | <ul style="list-style-type: none"><li>■ Get automatic email notifications about changes to patches, array-specific modules (ASLs/APMs/DDIs/DDLs), and high availability agents from a central repository.</li><li>■ Identify and mitigate system and environmental risks.</li><li>■ Display descriptions and solutions for hundreds of Symantec error codes.</li></ul>   |
| Improve efficiency                            | <ul style="list-style-type: none"><li>■ Find and download patches based on product version and platform.</li><li>■ List installed Symantec products and license keys.</li><li>■ Tune and optimize your environment.</li></ul>  |

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**Note:** Certain features of SORT are not available for all products. Access to SORT is available at no extra cost.

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To access SORT, go to:

<https://sort.symantec.com>

## Important release information

- For important updates regarding this release, review the Late-Breaking News TechNote on the Symantec Technical Support website:  
<http://www.symantec.com/docs/TECH164885>
- For the latest patches available for this release, go to:  
<https://sort.symantec.com/>
- The hardware compatibility list contains information about supported hardware and is updated regularly. For the latest information on supported hardware visit the following URL:  
<http://www.symantec.com/docs/TECH170013>  
Before installing or upgrading Storage Foundation and High Availability Solutions products, review the current compatibility list to confirm the compatibility of your hardware and software.

## Changes introduced in SF 6.0.1

This section lists the changes in Veritas Storage Foundation 6.0.1.

### New versioning process for SFHA Solutions products

Symantec made some changes to simplify the versioning process to ensure that customers have a unified experience when it comes to deploying our different products across Storage, Availability, Backup, Archiving and Enterprise Security products. With this change, all the products will have a 3 digit version. In complying with this approach, the current SFHA Solutions release is available as version 6.0.1.

### New directory location for the documentation on the software media

The PDF files of the product documentation are now located in the `/docs` directory on the software media. Within the `/docs` directory are subdirectories for each of the bundled products, which contain the documentation specific to that product. The `sfha_solutions` directory contains documentation that applies to all products.

### Changes related to installation and upgrades

The product installer includes the following changes in 6.0.1.

## Locally-installed installation and uninstallation scripts now include the release version

When you run local scripts (`/opt/VRTS/install`) to configure Veritas products, the names of the installed scripts now include the release version.

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**Note:** If you install your Veritas product from the install media, continue to run the `installsf` command without including the release version.

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To run the script from the installed binaries, run the `installsf<version>` command.

Where `<version>` is the current release version with no periods or spaces.

For example, to configure the 6.0.1 version of your product, run this command:

```
# /opt/VRTS/install/installsf601 -configure
```

## VxVM private region backup pre-checks for disk groups prior to upgrade

The installer verifies that recent backups of configuration files of all the disk groups in VxVM private region have been saved in the `/etc/vx/cbr/bk` directory prior to doing an upgrade. If not, a warning message is displayed.

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**Warning:** Backup `/etc/vx/cbr/bk` directory.

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## Support for Solaris 11 Automated Installer

You can use the Oracle Solaris Automated Installer (AI) to install the Solaris 11 operating system on multiple client systems in a network. AI performs a hands-free installation (automated installation without manual interactions) of both x86 and SPARC systems. You can also use AI media (AI bootable image, provided by Oracle, which can be downloaded from the Oracle Web site) to install the Oracle Solaris OS on a single SPARC or x86 platform. All cases require access to a package repository on the network to complete the installation.

## Support for tunables file templates

You can use the installer to create a tunables file template. If you start the installer with the `-tunables` option, you see a list of all supported tunables, and the location of the tunables file template.

## Additional installation postcheck options

The `postcheck` option has been enhanced to include additional checks.

You can use the installer's post-check option to perform the following checks:

- General checks for all products.
- Checks for Volume Manager (VM).
- Checks for File System (FS).
- Checks for Cluster File System (CFS).

## Changes related to device support

In this release, Veritas Dynamic Multi-Pathing (DMP) supports Fusion-io devices on Solaris x86\_64.

Veritas Volume Manager (VxVM) operations such as initializing the Fusion-io disks in simple or sliced format, creating a disk group, and creating volumes and file systems are supported on Fusion-io devices.

Fusion-io devices cannot be added to disk groups configured for Cross-platform Data Sharing (CDS). The CDS disk format is not supported on Fusion-io devices.

## Changes related to Veritas Storage Foundation (SF)

Veritas Storage Foundation includes the following changes in 6.0.1:

### Changes related to Veritas Volume Manager

Veritas Volume Manager (VxVM) includes the following changes in 6.0.1:

#### Enhancements to `vxassist` for controlling storage allocations and managing volume intents

In this release, the `vxassist` command has been enhanced to provide more flexibility and control in volume allocations and intent management.

The following list describes the enhancements:

- A rich set of new predefined disk classes.  
The new disk classes cover comprehensive characteristics of the available storage. These disk properties are automatically discovered. You can use these disk classes to select the required type of storage for allocations.
- Ability to define alias names for predefined disk classes.  
For administrative convenience, you can customize alias names that are shorter or more user-friendly.

- Ability to change the precedence order for the predefined disk classes that are supported for mirror or stripe separation and confinement.  
You can now customize the precedence order for the predefined disk classes that are supported for mirror or stripe separation and confinement. The mirror or stripe operation honors the higher priority disk class specified in the custom precedence order.
- Ability to define new disk classes.  
You can associate user-defined properties to disks that satisfy a particular criterion. This functionality enables you to customize device classification or grouping. You can use these custom disk classes to specify storage selections.
- New clauses for precise disk selection.  
The new `use` and `require` clauses enable you to select storage from well-defined sets of intended disk properties. The `require` type of clauses select disks from an intersection set where all specified properties are met. The `use` type of clauses select disks from a union set where at least one of the specified properties is met. The `use` and `require` constraints are made persistent by default, for disk group version 180 and onwards.
- Management commands for the volume intents.  
Use the volume intent management commands to manage the `use` and `require` type of persistent intents. You can set, clear, update, and list the `use` and `require` intents for the volume, after the volume is created.

For more information about `vxassist` and these enhancements, see the *Administrator's Guide* and the `vxassist(1M)` manual page.

### Upgrade for instant snap Data Change Objects (DCOs)

Instant snap Data Change Objects (DCOs), formerly known as version 20 DCOs, support the creation of instant snapshots for VxVM volumes. Starting with release 6.0, the internal format for instant DCOs changed. Upgrade the instant snap DCOs and DCO volumes to ensure compatibility with the latest version of VxVM. The upgrade operation can be performed while the volumes are online.

The upgrade operation does not support upgrade from version 0 DCOs.

See the *Administrator's Guide* and the `vxsnap(1M)` manual page.

### Dynamic Reconfiguration tool

Dynamic Multi-Pathing provides a Dynamic Reconfiguration tool. The Dynamic Reconfiguration tool is an interactive tool to automate dynamic reconfiguration of LUNs or HBAs. Dynamic reconfiguration includes addition, removal or replacement of LUNs, and replacement of certain HBAs, without requiring a reboot. The Dynamic

Reconfiguration tool simplifies the process, so that you do not need a complex set of DMP and operating system related commands.

### **Support for DMP within multiple Solaris I/O Domains**

In this release, DMP metanodes can be directly exported to the guest domains in the Oracle VM server environment. You can enable DMP in the control and alternate I/O domains. For details, see the *Veritas Storage Foundation and High Availability Solutions Virtualization Guide - Solaris*.

### **DMP support for Fusion-io iodrive and iodrive2 cards on Solaris**

This release introduces DMP support for Fusion-io iodrive and iodrive2 cards on Solaris.

## **Changes related to Veritas File System**

Veritas File System includes the following changes in 6.0.1:

### **The `glmstat` command can display GLM cache memory usage information**

You can use the `glmstat -M` command to display GLM cache memory usage information.

For more information, see the `glmstat(1M)` manual page.

### **The `vxfssstat` command can display pinned memory counters information**

You can use the `vxfssstat -m` command to display pinned memory counters information.

For more information, see the `vxfssstat(1M)` manual page.

### **SmartTier can compress or uncompress files**

SmartTier can compress or uncompress files during relocation, or can perform in-place compression or uncompression of an entire tier.

See the *Administrator's Guide*.

## **Changes related to SFDB tools**

The following sections describe the changes related to Storage Foundation for Databases (SFDB) tools in 6.0.1.

### **Support for creation of Golden Image snapshots using FlashSnap for Oracle**

In this release, the SFDB tools support the creation of Golden Image snapshots using FlashSnap for Oracle databases.

Online mode, third-mirror-break-off type snapshot i.e. online FlashSnap snapshot of a database instance contains all the information needed to create a clone of the database instance. It can act as a template for creating clone database instances. You can thus allocate a FlashSnap snapshot that can be used as a master copy for creating one or more clone instances. The clone instances created from a FlashSnap image, termed as the 'golden image', are incremental copies of the master or the golden image. These depend on the FlashSnap image for their operations.

### **Support for Flashsnap at the VVR Secondary site for Oracle**

In this release, the SFDB tools support Flashsnap operation at the VVR Secondary site for Oracle databases.

Online mode snapshots (i.e. traditional, third-mirror-break-off snapshots) are supported in VVR replication environment. Also, support for more than one secondary site is added. For online mode snapshots in VVR environment, IBC (In-Band Control) messages are used to synchronize activities on the Primary and Secondary sites. Snapshot is initiated from VVR Secondary site.

### **Introduction of the Compression Advisor tool for Oracle**

In this release, the SFDB tools provide the Compression Advisor tool for Oracle databases.

Veritas File System (VxFS) provides the `vxcompress` utility that can be used to compress individual files transparent to the underlying applications. An application reading a compressed file automatically receives the uncompressed data that is uncompressed in memory only; the on-disk part of the data remains compressed. If an application writes to a compressed file, parts of the file are uncompressed on disk.

Compression Advisor provides extended compression functionality for Oracle database files in Oracle single instance and Oracle RAC environments. The Compression Advisor command `sfae_comp_adm` resides in the `/opt/VRTS/bin` directory, and it must be run by the DBA user.

## **Changes related to replication**

Veritas Storage Foundation and High Availability Solutions includes the following changes related to replication in 6.0.1:

### **VVR CPU utilization improvements with fine granular locking and optimizations**

CPU usage is reduced due to VVR lock and code optimization. I/O throughput is improved due to faster I/O processing.

### **CPU utilization improvements and memory optimizations in VVR compression engine**

CPU usage is reduced while compression is enabled. The reduced CPU footprint is achieved by memory pre-allocation optimizations, and changing the compression window size and memory levels to provide optimum compression performance.

### **VVR replication performance improvements in TCP protocol**

Overall improvement of replication throughput due to introducing the following:

- An I/O throttling implementation at the VVR layer to improve network bandwidth usage for TCP. (Not applicable to UDP protocol).
- Per RVG read-back memory pool to avoid contention of memory between the RVGs in the SRL read-back.
- A separate read-back thread to read the data from the SRL. This is disabled by default.

### **Improved resiliency in case of VVR data volume failure in clustered storage environments using CVM I/O shipping framework**

In the event of a data volume failure, there may be some writes to the SRL that do not also write to the data volume due to an I/O failure. To make the data consistent, the writes are flushed to the data volume. In previous releases, there was no mechanism to flush the writes from the node with storage connectivity; to avoid data inconsistency, the data volume was detached cluster wide. Using the I/O shipping framework, in flight I/Os (where the I/O finishes on the SRL but does not write to the data volume) are now shipped to the node with storage connectivity and written to the data volume. As a result, the data volume remains consistent and is available on all nodes that have storage connectivity.

## **No longer supported**

The following features are not supported in this release of SF products:

- The `f.sppmk` command is deprecated and can no longer be used to create SmartTier placement policies.

## **Veritas Storage Foundation for Databases (SFDB) tools features which are no longer supported**

The following Storage Foundation for Databases (SFDB) tools features are not supported in this release:

- FlashSnap reverse resync



- Checkpoint policy and Checkpoint quotas
- Interactive modes in clone and rollback

## Cluster Volume Manager (CVM) no longer supported for Sun Clusters

In this release, Cluster Volume Manager (CVM) no longer supports Sun Clusters.

## System requirements

This section describes the system requirements for this release.

### Supported Solaris operating systems

This section lists the supported operating systems for this release of Veritas products. For current updates, visit the Symantec Operation Readiness Tools Installation and Upgrade page: [https://sort.symantec.com/land/install\\_and\\_upgrade](https://sort.symantec.com/land/install_and_upgrade).

Table 1-1 shows the supported operating systems for this release.

**Table 1-1** Supported operating systems

Operating systems	Levels	Chipsets
Solaris 10	Update 8, 9, and 10	SPARC
Solaris 10	Update 8, 9, and 10	x86
Solaris 11	SRU 11.0.x.y.z	SPARC
Solaris 11	SRU 11.0.x.y.z	x86

**Note:** Supported Repository Update (SRU) digits in the table represent Release.Update.SRU.Build.Respin.

## Storage Foundation for Databases features supported in database environments

Storage Foundation for Databases (SFDB) product features are supported for the following database environments:

**Table 1-2** SFDB features supported in database environments

Veritas Storage Foundations feature	DB2	Oracle	Oracle RAC	Sybase	Sybase ASE CE
Oracle Disk Manager	No	Yes	Yes	No	No
Cached Oracle Disk Manager	No	Yes	No	No	No
Quick I/O	Yes	Yes	Yes	Yes	Yes
Cached Quick I/O	Yes	Yes	Yes	Yes	Yes
Concurrent I/O	Yes	Yes	Yes	Yes	Yes
Storage Checkpoints	Yes	Yes	Yes	Yes	Yes
Flashsnap	Yes	Yes	Yes	Yes	Yes
SmartTier	Yes	Yes	Yes	Yes	Yes
Database Storage Checkpoints <b>Note:</b> Requires Enterprise license	No	Yes	Yes	No	No
Database Flashsnap <b>Note:</b> Requires Enterprise license	No	Yes	Yes	No	No
SmartTier for Oracle <b>Note:</b> Requires Enterprise license	No	Yes	Yes	No	No

**Notes:**

- SmartTier is an expanded and renamed version of Dynamic Storage Tiering (DST).
- Storage Foundation for Databases (SFDB) tools Database Checkpoints, Database Flashsnap, and SmartTier for Oracle are supported with an Enterprise product license.

For the most current information on Storage Foundation products and single instance Oracle versions supported, see:

<http://www.symantec.com/docs/DOC4039>

Review the current Oracle documentation to confirm the compatibility of your hardware and software.

## Veritas Storage Foundation memory requirements

Symantec recommends 2 GB of memory over the minimum requirement for the operating system.

## SF: Issues fixed in 6.0.1

This section covers the incidents that are fixed in SF 6.0.1.

### Installation and upgrades: issues fixed in 6.0.1

This section describes the incidents that are fixed related to installation and upgrades in this release.

**Table 1-3** Fixed issues related to installation and upgrades

Incident	Description
2329580	Unable to stop some SFCFSHA processes.
2873102	Perl module error on completion of SFHA installation
2627076	Incorrect server names sometimes display if there is a clock synchronization issue.
2622987	sfmh discovery issue when you upgrade your Veritas product to 6.0.1
2526709	DMP-OSN tunable value not get persistence after upgrade from 5.1SP1 to 6.0.
2088827	During product migration the installer overestimates disk space use.
2618482	Some agents may fail to come online after full upgrade if they were online before the upgrade.

### Installation and upgrades: Issues fixed in 6.0 RP1

There are no new fixed incidents for installation and upgrades in 6.0 RP1.

## Veritas Storage Foundation fixed issues

Issues fixed for Veritas Storage Foundation (SF) includes issues fixed for Veritas File System and Veritas Volume Manager.

See [“Veritas File System: issues fixed in 6.0.1”](#) on page 20.

See [“Veritas Volume Manager: issues fixed in 6.0.1”](#) on page 22.

## Veritas File System: issues fixed in 6.0.1

This section describes the incidents that are fixed in Veritas File System in this release.

**Table 1-4** Veritas File System fixed issues

Incident	Description
2838471	Need to add rstchown mount option to support customer use case.
2764861	Uncompress by vxcompress ignores quota limitation.
2753944	The file creation threads can hang.
2735912	The performance of tier relocation using fsppadm enforce is poor when moving a large amount of files.
2712392	Threads hung in VxFS.
2709869	System panic with redzone violation when vx_free() tried to free fiostat.
2674639	The cp(1) command with the -p option may fail on a file system whose File Change Log (FCL) feature is enabled. The following error messages are displayed: cp: setting permissions for 'file_name': Input/output error cp: preserving permissions for 'file_name': No data available.
2670022	Duplicate file names can be seen in a directory.
2655788	Using cross-platform data sharing to convert a file system that has more than 32k nlinks does not update the vx_maxlink and maxlink_enable tunables.
2651922	ls -l command on local VxFS file system is running slow and high CPU usage is seen.
2600168	The -p option of cp_vxfs command does not work correctly on Solaris.
2597347	fsck should not coredump when only one of the device record has been corrupted and the replica is intact.
2566875	The write(2) operation exceeding the quota limit fails with an EDQUOT error (Disc quota exceeded) before the user quota limit is reached.
2559450	Command fsck_vxfs(1m) may core-dump with SEGV_ACCERR error.
2536130	fscdsconv fails to convert FS between specific platforms if FCL is enabled.
2272072	GAB panics the box because VCS engine HAD did not respond. The lobolt wraps around.
2086902	Spinlock held too long on vxfs spinlock, and there is high contention for it.

**Table 1-4** Veritas File System fixed issues (*continued*)

Incident	Description
1529708	Formatting issue with the output of vxrepquota.

## Veritas File System: Issues fixed in 6.0 RP1

This section describes the incidents that are fixed in Veritas File System (VxFS) in 6.0 RP1.

**Table 1-5** Veritas File System 6.0 RP1 fixed issues

Fixed issues	Description
2679361	Network Customization screen doesn't show any NICs in I18N-level0 environment.
2678096	The fiostat command dumps core when the count value is 0.
2663750	Abrupt messages are seen in engine log after complete storage failure in cvm resiliency scenario.
2655786	'Shared' extents are not transferred as 'shared' by the replication process.
2655754	Deadlock because of wrong spin lock interrupt level at which delayed allocation list lock is taken.
2653845	When the fsckptadm(1M) command with the '-r' and '-R' option is executed, two mutually exclusive options gets executed simultaneously.
2645441	Native filesystem migrated to vxfs disk layout 8 where layout version 9 is the default.
2645435	The following error message is displayed during the execution of the fsmap(1M) command: 'UX:vxfs fsmap: ERROR: V-3-27313'.
2645112	write operation on a regular file mapping to shared compressed extent results in corruption.
2645109	In certain rare cases after a successful execution of vxfilesnap command, if the source file gets deleted in a very short span of time after the filesnap operation, then the destination file can get corrupted and this could also lead to setting of VX_FULLFSCK flag in the super block.
2645108	In certain cases write on a regular file which has shared extent as the last allocated extent can fail with EIO error.

**Table 1-5** Veritas File System 6.0 RP1 fixed issues (*continued*)

Fixed issues	Description
2630954	The fsck(1M) command exits during an internal CFS stress reconfiguration testing.
2630754	64-bit vxfsutil.so on solaris x86 doesn't load.
2624459	Listing of a partitioned directory using the DMAPI does not list all the entries.
2613884	Metadata corruption may be seen after recovery.
2609002	The De-duplication session does not complete.
2600168	The -p option of cp_vxfs command does not work correctly in solaris.
2599590	Expanding or shrinking a DLV5 file system using the fsadm(1M)command causes a system panic.
2583197	Upgrade of a file system from version 8 to 9 fails in the presence of partition directories and clones.
2563251	fsmigadm "commit/status" error messages should be clear.
2552095	The system may panic while re-organizing the file system using the fsadm(1M) command.
2536130	The fscdsconv(1M) command which is used to convert corrupted or non-VxFS file systems generates core.
2389318	Enabling delayed allocation on a small file system sometimes disables the file system.

## Veritas Volume Manager: issues fixed in 6.0.1

This section describes the incidents that are fixed in Veritas Volume Manager in this release. This list includes Veritas Volume Replicator fixed issues.

**Table 1-6** Veritas Volume Manager fixed issues

Incident	Description
2838059	VVR Secondary panic in vol_rv_update_expected_pos.
2832784	ESX panicked after applying a template file from GUI.
2826958	The pwnn number is not displayed in the output of command <code>vxddmpadm list dmpnode dmpnodename=<i>dmpnode name</i></code> .

**Table 1-6** Veritas Volume Manager fixed issues (*continued*)

Incident	Description
2818840	Enhance the <code>vxdmpraw</code> utility to support permission and "root:non-system" ownership to be set and make it persistent.
2794625	Unable to configure ASM to use DMP native block device path.
2792242	I/O hang after performing zone remove/add operations.
2774406	The <code>svol_flush_srl_to_dv_start</code> fails to start.
2771452	IO hung because of hung port deletion.
2763206	The <code>vxdisk rm</code> command core dumps when list of disknames is very long.
2756059	Panic in <code>voldco_or_drl_to_pvm</code> when volume started at boot.
2754819	Live deadlock seen during disk group rebuild when the disk group contains cache object.
2743926	DMP <code>restored</code> daemon fails to restart during system boot.
2741240	The <code>vx dg join</code> transaction failed and did not rollback to the sourcedg.
2739709	Disk group rebuild related issues.
2739601	VVR: <code>repstatus</code> output occasionally reports abnormal timestamp.
2737420	The <code>vxconfigd</code> daemon dumps core while onlining of the disk.
2729501	Exclude path not working properly and can cause system hang while coming up after enabling native support.
2711167	While starting replication, <code>vradmind</code> fails with error 'Cannot start command execution on Secondary'.
2710579	Do not write backup labels for CDS disk - irrespective of disk size.
2710147	Node panics in <code>dmp_pr_do_reg</code> during key registration with fencing enabled.
2700792	SEGV in <code>vxconfigd</code> daemon during CVM startup.
2700486	The <code>vradmind</code> daemon core dumps when Primary and Secondary have the same hostname and an active Stats session exists on Primary.
2700086	EMC BCV (NR) established devices are resulting in multiple DMP events messages (paths being disabled/enabled).
2698860	The <code>vxassist mirror</code> command failed for thin LUN because <code>statvfs</code> failed.

**Table 1-6** Veritas Volume Manager fixed issues (*continued*)

Incident	Description
2689845	After upgrade, some VxVM disks changed to error status and the disk group import failed.
2688747	Logowner local sequential I/Os starved with heavy I/O load on logclient.
2688308	Do not disable other disk groups when a re-import of a disk group fails during master take-over.
2684558	The <code>vxesd</code> daemon dumps core on startup in <code>libc</code> .
2683300	The hosts repeatedly reboot after 6.0x build was installed.
2680482	Empty <code>vx.*</code> directories are left in the <code>/tmp</code> directory.
2679917	Corrupt space optimized snapshot after a refresh with CVM master switching.
2675538	The <code>vxdisk resize</code> command may cause data corruption.
2672401	Not able to initialize EFI disks which are larger than 1TB in size.
2664825	Disk group import fails when disk contains no valid UDID tag on config copy and config copy is disabled.
2656803	Race between <code>vxnetd start</code> and <code>stop</code> operations causes panic.
2653143	System panic while loading <code>vxdump</code> driver during installation.
2652485	Inactive snapshot LUNs cause trespassing.
2643634	Message enhancement for a mixed (non-cloned and cloned) disk group import.
2641510	Site consistency: When a disk failure is detected the associated disks for that site are detached and ALL disks as marked as RLOC.
2627126	Lots of I/Os and paths are stuck in <code>dmp_delayq</code> and <code>dmp_path_delayq</code> respectively. DMP daemon did not wake up to process them.
2626199	The <code>vxdumpadm list dmpnode</code> printing incorrect path type.
2617336	Solaris patch 147440-04 panics in <code>vxioioctl</code> .
2605444	The <code>vxdumpadm disable/enable</code> operation of primary path (EFI labelled) in A/PF array results in all paths getting disabled.
2580393	Removal of SAN storage cable on any node brings Oracle Application Groups down on all nodes.
2566174	Null pointer dereference in <code>volcvm_msg_rel_gslock()</code> .



**Table 1-6** Veritas Volume Manager fixed issues (*continued*)

Incident	Description
2564092	Automate the LUN provisioning (addition) / removal steps using <code>vxdiskadm</code> .
2553729	Status of the EMC Clariion disk changed to "online clone_disk" after upgrade.
2441283	The <code>vxsnap addmir</code> command sometimes fails under heavy I/O load.
2427894	Opaque disk support for VIS appliance.
2249445	Develop a tool to get the disk-related attributes like geometry, label, media capacity, partition info etc.
2240056	The <code>vxdbg move</code> transaction not completing and backups fail.
2227678	The second rlink gets detached and does not connect back when overflowed in a multiple-secondaries environment.
2123677	Expanding a LUN to a size greater than 1 TB fails to show correct expanded size.
1675482	The <code>vxdbg list dname</code> command gives error 'state=new failed'.
1190117	<code>vxdisk -f init</code> can overwrite some of the public region contents.
2698035	Tunable values do not change as per the values applied through <code>vxtune</code> .

## Veritas Volume Manager: Issues fixed in 6.0 RP1

This section describes the incidents that are fixed in Veritas Volume Manager (VxVM) in 6.0 RP1.

**Table 1-7** Veritas Volume Manager 6.0 RP1 fixed issues

Fixed issues	Description
2680604	<code>vxconfigbackupd</code> does not work correctly with <code>NUM_BK</code> .
2674465	Data Corruption while adding/removing LUNs.
2666163	A small portion of possible memory leak introduced due to addition of enhanced messages.
2657797	Starting 32TB RAID5 volume fails with unexpected kernel error in configuration update.
2649958	<code>vxdumpadm</code> dumps core due to null pointer reference.

**Table 1-7** Veritas Volume Manager 6.0 RP1 fixed issues (*continued*)

Fixed issues	Description
2647795	Intermittent data corruption after a vxassist move.
2635476	Failure in recovering a DMP failed path.
2632120	vxdiskadm utility does not update default DM name when multiple disks are specified for encapsulation.
2627056	vxmake -g <DGNAME> -d <desc-file> fails with very large configuration due to memory leaks.
2626741	Using vxassist -o ordered and mediatype:hdd options together do not work as expected.
2621465	When detached disk after connectivity restoration is tried to reattach gives 'Tagid conflict' error.
2620556	I/O hung after SRL overflow.
2620555	I/O hang due to SRL overflow and CVM reconfig.
2613425	Encapsulation issue - vxdiskadm should not have a default disk format of cdsdisk, it should be sliced.
2608849	Logowner local I/O starved with heavy I/O load from Logclient.
2607519	Secondary master panics in case of reconfig during autosync.
2607293	Primary master panic'ed when user deleted frozen RVG.
2600863	vxtune doesn't accept tunables correctly in human readable format.
2590183	write fails on volume on slave node after join which earlier had disks in "lfailed" state.
2589569	vxdisksetup on EFI disk is taking ~2-4 mins.
2576602	vxdg listtag should give error message and display correct usage when executed with wrong syntax.
2575581	vxtune -r option is printing wrong tunable value.
2574752	Support utility vxfmrmap (deprecating vxfmrshowmap) to display DCO map contents and verification against possible state corruptions.
2565569	read/seek i/o errors during init/define of nopriv slice.
2562416	vxconfigbackup throws script errors due to improper handling of arguments.

**Table 1-7** Veritas Volume Manager 6.0 RP1 fixed issues (*continued*)

Fixed issues	Description
2556467	disabling all paths and rebooting host causes /etc/vx/.vxdmprawdev record loss.
2530698	after "vxdg destroy" hung (for shared DG), all vxcommands hang on master.
2526498	Memory leaks seen in some I/O code path.
2516584	startup scripts use 'quit' instead of 'exit', causing empty directories in /tmp.
2348180	Failure during validating mirror name interface for linked mirror volume.

## Storage Foundation for Databases (SFDB) tools: issues fixed in 6.0.1

[Table 1-8](#) describes the Veritas Storage Foundation for Databases (SFDB) tools issues fixed in this release.

**Table 1-8** SFDB tools fixed issues

Incident	Description
2585643	<p>If you provide an incorrect host name with the <code>-r</code> option of <code>vxsfadm</code>, the command fails with an error message similar to one of the following:</p> <pre>FSM Error: Can't use string ("") as a HASH ref while "strict refs" in use at /opt/VRTSdbed/lib/perl/DBED/SfaeFsm.pm line 776. SFDB vxsfadm ERROR V-81-0609 Repository location is invalid.</pre> <p>The error messages are unclear.</p>
2703881 (2534422)	<p>The FlashSnap validation operation fails with the following error if the mirrors for data volumes and archive log volumes share the same set of disks:</p> <pre>SFAE Error:0642: Storage for diskgroup oradatadg is not splittable.</pre>
2582694 (2580318)	<p>After you have done FlashSnap cloning using a snapplan, any further attempts to create a clone from the same snapplan using the <code>dbed_vmclonedb</code> continue to use the original clone SID, rather than the new SID specified using the <code>new_sid</code> parameter. This issue is also observed when you resynchronize the snapplan, take a snapshot again without specifying the new clone SID, and then try to clone with the new SID.</p>

**Table 1-8** SFDB tools fixed issues (*continued*)

Incident	Description
2579929	<p>The <code>sfae_auth_op -o auth_user</code> command, used for authorizing users, fails with the following error message:</p> <pre>SFDB vxsfadm ERROR V-81-0384 Unable to store credentials for &lt;username&gt;</pre> <p>The authentication setup might have been run with a strict umask value, which results in the required files and directories being inaccessible to the non-root users.</p>

## Known issues

This section covers the known issues in this release.

### Installation known issues

This section describes the known issues during installation and upgrade.

#### **Installed 5.0 MP3 without configuration, then upgrade to 6.0.1, installer cannot continue (2016346)**

If you install the 5.0 MP3 release without configuring the product, then you cannot upgrade to the 6.0.1 release. This upgrade path is not supported.

**Workaround:** Uninstall 5.0 MP3, and then install 6.0.1.

#### **During Live Upgrade, installer displays incorrect message about VRTSaa package removal (1710504)**

If you use Live Upgrade to upgrade SF 5.0MP1 to SF 6.0.1, the installer may display a message that the VRTSaa package failed to uninstall.

**Workaround:** Verify whether the VRTSaa package was removed correctly from the alternate boot disk.

```
# pkginfo -R alternate_root_path VRTSaa
```

For example, run the following command

```
# pkginfo -R /altroot.5.10 VRTSaa
```

If the VRTSaa package was removed, you can ignore this error.

If the VRTSaa package was not removed, remove the package manually:

```
# pkgrm -R alternate_root_path VRTSaa
```

For example, run the following command

```
# pkgrm -R /altroot.5.10 VRTSaa
```

## Live Upgrade to Solaris 10 Update 10 fails in the presence of zones (2521348)

SFCFSHA Live Upgrade from Solaris 10 Update 7 5.1SP1 to Solaris 10 Update 10 using the `vxlustart` commands fails in the presence of zones with the following error message:

```
ERROR: Installation of the packages from this media of the media failed;
pfinstall returned these diagnostics:
Processing default locales
    - Specifying default locale (en_US.ISO8859-1)
Processing profile
ERROR: This slice can't be upgraded because of missing usr packages for
the following zones:
ERROR:     zone1
ERROR:     zone1
ERROR: This slice cannot be upgraded because of missing usr packages for
one or more zones.
The Solaris upgrade of the boot environment <dest.27152> failed.
```

This is a known issue with the Solaris `luupgrade` command.

**Workaround:** Check with Oracle for possible workarounds for this issue.

## On Sparc, Live Upgrade from Solaris 9 to Solaris 10 Update 10 may fail (2424410)

On Sparc, Live Upgrade from Solaris 9 to Solaris 10 Update 10 may fail with the following error:

```
Generating file list.
Copying data from PBE <source.24429> to ABE <dest.24429>.
99% of filenames transferredERROR: Data duplication process terminated
unexpectedly.
ERROR: The output is </tmp/lucreate.13165.29314/lucopy.errors.29314>.

29794 Killed
Fixing zonепaths in ABE.
Unmounting ABE <dest.24429>.
```

```
100% of filenames transferredReverting state of zones in PBE
<source.24429>.
ERROR: Unable to copy file systems from boot environment <source.24429>
to BE <dest.24429>.
ERROR: Unable to populate file systems on boot environment <dest.24429>.
Removing incomplete BE <dest.24429>.
ERROR: Cannot make file systems for boot environment <dest.24429>.
```

This is a known issue with the Solaris `lucreate` command.

**Workaround:** Install Oracle patch 113280-10,121430-72 or higher before running `vxlustart`.

## Live Upgrade to 6.0.1 on Solaris 10 with `dmp_native_support` enabled fails (2632422)

During Live Upgrade to 6.0.1 on Solaris 10, the `vxlustart` command fails if `dmp_native_support` is enabled. Veritas Dynamic Multi-Pathing (DMP) support for native devices requires that the naming scheme be set to enclosure-based naming (EBN). DMP 6.0.1 does not allow changing the naming scheme from EBN when support for native devices is enabled.

Due to a bug in DMP 5.1 Service Pack 1 (5.1SP1), the naming scheme could be set to operating-system based naming (OSN). However, this is not a supported configuration. With the naming scheme set to OSN, the `vxlustart` command fails.

**Workaround:** Disable `dmp_native_support` on all nodes.

## Upgrading from Veritas Storage Foundation 5.1 Service Pack 1 Rolling Patch 2 to 6.0.1 with rootability enabled fails (2581313)

Upgrading from Veritas Storage Foundation (SF) 5.1 Service Pack (SP) 1 Rolling Patch (RP) 2 to 6.0.1 on Solaris 10 while using an encapsulated root disk fails because the post installation scripts of Veritas Volume Manager (VxVM) are unable to start the `initrd` daemon.

**Workaround:** To upgrade from 5.1 SP1 RP2 to 6.0.1 while using an encapsulated root disk, you must reinstall the `nash` utility on the system prior to the upgrade.

**To upgrade from 5.1 SP1 RP2 to 6.0.1 while using an encapsulated root disk**

- 1 Encapsulate the root disk.
- 2 Reinstall the `nash` utility.
- 3 Upgrade to the SF 6.0.1 release.

### **During upgrade from 5.1SP1 with an encapsulated root disk, splitting the root mirror fails if the target disk group name is used by a deported disk group (2280560)**

During an upgrade from SF 5.1 SP1 with an encapsulated root disk, splitting the root mirror fails if the target disk group name for the split operation is used by an existing deported disk group.

#### **Workaround:**

Specify a different disk group name as a target for the split operation.

### **On Solaris 10, a flash archive installed through JumpStart may cause a new system to go into maintenance mode on reboot (2379123)**

If a Flash archive is created on a golden host with encapsulated root disks, when this Flash archive is installed onto another host through JumpStart, the new system may go to maintenance mode when you initially reboot it.

This problem is caused by the predefined root disk mirror in the Flash archive. When the archive is applied to a clone system, which may have different hard drives, the newly cloned system may get stuck at root disk mirroring during reboot.

**Workaround:** Create the Flash archive on a golden host with no encapsulated root disks. Run `vxunroot` to clean up the mirrored root disks before you create the Flash archive.

### **Web installer does not ask for authentication after the first session if the browser is still open (2509330)**

If you install or configure SF and then close the Web installer, if you have other browser windows open, the Web installer does not ask for authentication in the subsequent sessions. Since there is no option to log out of the Web installer, the session remains open as long as the browser is open on the system.

**Workaround:** Make sure that all browser windows are closed to end the browser session and subsequently log in again.

### **Erroneous uninstallation error message when you install CommandCentral and Storage Foundation (2628165)**

If you install a Veritas CommandCentral Management Server product on a Solaris machine, and then you try to install Storage Foundation software on this machine, you may see the following erroneous message that VRTSsfmh will be uninstalled:

```
CPI WARNING V-9-40-3866 The VRTSsfmh package on hostname will be
uninstalled.
```

Note that the system *hostname* is reporting to the following management servers:

```
ccs://hostname
```

**Workaround:** Ignore this erroneous message.

## Stopping the Web installer causes Device Busy error messages (2633924)

If you start the Web installer, and then perform an operation (such as prechecking, configuring, or uninstalling), you may get an error message saying the device is busy.

**Workaround:** Do one of the following:

- Kill the start.pl process.
- Start the webinstaller again. On the first Web page you see that the session is still active. Either take over this session and finish it or terminate it directly.

## Veritas File System modules fail to unload during uninstall or upgrade if a break-off snapshot volume is created or reattached (2851403)

If a break-off snapshot volume is created or reattached on the system, the Veritas File System modules, `vxportal` and `vxfs`, may fail to unload during uninstall or upgrade. The situation occurs if the SmartMove feature is enabled, which is the default setting. When you use the installer to uninstall or upgrade, you may see a message similar to the following:

```
Veritas Storage Foundation Shutdown did not complete successfully
```

```
vxportal failed to stop on dblxx64-21-v1
vxfs failed to stop on dblxx64-21-v1
```

**Workaround:**



- 1 Open a new session and manually unload the modules that failed to unload. Use commands similar to the following:

```
# /sbin/modprobe -r vxportal  
# /sbin/modprobe -r vxfs
```

- 2 Because some processes failed to stop, the installer recommends a reboot and asks you if you want to continue.

Press `y` to continue to the next phase. You can ignore the reboot requirement.

### Installer scripts will not be generated on Solaris 11 SRU 11.1.x.y.z (3016872)

When using Solaris 11 Supported Repository Update (SRU) 11.1.x.y.z to install your Veritas product, the installer scripts will not be generated under `/opt/VRTS/install`.

**Workaround:** On Solaris 11 SRU 11.1.x.y.z, install Veritas product version 6.0.1, upgrade to Veritas product version 6.0.3, and then configure your Veritas product using the newly-generated install scripts under `/opt/VRTS/install`.

## Veritas Storage Foundation known issues

This section describes the known issues in this release of Veritas Storage Foundation (SF).

### Not all the objects are visible in the VOM GUI (1821803)

After upgrading SF stack from 5.0MP3RP2 to 5.1, the volumes are not visible under the Volumes tab and the shared diskgroup is discovered as Private and Deported under the Disgroup tab in the SFM GUI.

**Workaround:**

**To resolve this known issue**

- ◆ On each manage host where `VRTSsfmh 2.1` is installed, run:

```
# /opt/VRTSsfmh/adm/dclisetup.sh -U
```

## A volume's placement class tags are not visible in the Veritas Enterprise Administrator GUI when creating a dynamic storage tiering placement policy (1880081)

A volume's placement class tags are not visible in the Veritas Enterprise Administrator (VEA) GUI when you are creating a SmartTier placement policy if you do not tag the volume with the placement classes prior to constructing a volume set for the volume.

### Workaround:

To see the placement class tags in the VEA GUI, you must tag the volumes prior to constructing the volume set. If you already constructed the volume set before tagging the volumes, restart `vxsvc` to make the tags visible in the GUI.

## NULL pointer dereference panic with Solaris 10 Update 10 on x86 and Hitachi Data Systems storage (2616044)

Due to a limitation with Solaris 10 Update 10 on x86, when the server is connected to Hitachi Data storage, the system panics due to a NULL pointer dereference during the boot cycle with the following stack trace:

```
fffffe8000988570 unix:die+da ()
fffffe8000988650 unix:trap+5e6 ()
fffffe8000988660 unix:cmntrap+140 ()
fffffe8000988870 scsi_vhci:hds_sym_path_get_opinfo+62 ()
fffffe8000988920 scsi_vhci:vhci_update_pathinfo+5b ()
fffffe80009889a0 scsi_vhci:vhci_pathinfo_online+2df ()
fffffe8000988a10 scsi_vhci:vhci_pathinfo_state_change+202 ()
fffffe8000988a70 genunix:i_mdi_pi_state_change+148 ()
fffffe8000988ab0 genunix:mdi_pi_online+32 ()
fffffe8000988b20 fcp:ssfcp_online_child+ff ()
fffffe8000988b90 fcp:ssfcp_trigger_lun+2b0 ()
fffffe8000988bc0 fcp:ssfcp_hp_task+88 ()
fffffe8000988c40 genunix:taskq_thread+295 ()
fffffe8000988c50 unix:thread_start+8 ()
```

For more information, see Oracle bug ID 7079724.

### Workaround:

Disable Solaris I/O multi-pathing on the server to avoid the system panic.

**To disable Solaris I/O multi-pathing on the server**

- 1 Disable Solaris I/O multi-pathing:

```
# stmsboot -d
```

- 2 Reboot the server:

```
# reboot
```

**The system may hang with Solaris 11 SRU1 (2876211)**

When running Solaris 11 SRU1, the system may hang due to an Oracle bug. The Oracle Bug ID is 7105131 deadman panic.

**Workaround:** SRU1 for Solaris 11 should be updated to SRU2a. The bug is fixed in SRU2a: Oracle Solaris 11 Support Repository Updates (SRU) Index (Doc ID 1372094.1)

## Veritas Volume Manager known issues

The following are the Veritas Volume Manager known issues for this release.

**Veritas Volume Manager (VxVM) might report false serial split brain under certain scenarios (1834513)**

VxVM might detect and report a false serial split brain when all of the following conditions are met:

- One or more arrays that provide the shared storage for the cluster are being powered off
- At the same time when the arrays are being powered off, an operation that requires an internal transaction is initiated (such as VxVM configuration commands)

In such a scenario, disk group import will fail with a split brain error and the vxsplitlines output will show 0 or 1 pools.

**Workaround:**

### To recover from this situation

- 1 Retrieve the disk media identifier (`dm_id`) from the configuration copy:

```
# /etc/vx/diag.d/vxprivutil dumpconfig device-path
```

The `dm_id` is also the serial split brain id (`ssbid`)

- 2 Use the `dm_id` in the following command to recover from the situation:

```
# /etc/vx/diag.d/vxprivutil set device-path ssbid=dm_id
```

## Probing vxio with DTrace fails on SPARC machines. (2180635)

This issue exists because of inability of DTrace to load a module whose text size is greater than 2MB on SPARC machines. While trying to load `vxio` with DTrace you may see following warning messages on console:

```
dtrace: WARNING: couldn't allocate SDT table for module vxio  
fbt: WARNING: couldn't allocate FBT table for module vxio
```

### Workaround:

There is no workaround for this issue.

## Disks on the LDOM guest are claimed under other\_disks category (2354005)

The disks on the LDOM guest are claimed under "other\_disks" enclosure, because these disks are not capable of being multi-pathed by DMP. This is expected because these devices represent VxVM volumes in the host. By design, devices under other\_disks enclosure have their name based on underlying OS path regardless of the DDL naming scheme.

## The vxsnap print command shows incorrect value for percentage dirty (2360780)

The `vxsnap print` command can display the percentage of regions that differ between snapshots, shown as the `%dirty`. In SF 6.0, if this command is run while the volumes are online and being actively used, the shown `%dirty` may lag from actual percentage dirty for instant snap data cache object (DCO) volumes. That is, the command output may show less `%dirty` than actual.

## After changing the preferred path from the array side, the secondary path becomes active (2490012)

For EVA arrays, DMP requires that the prefer bit is static. If the prefer bit is not static, issues like the following may occur. After changing the prefer path of LUN from the array side, and performing a disk discovery (`vxdisk scandisks`) from the host, the secondary path becomes active for the LUN.

### Workaround:

#### To work around this issue

- 1 Set the pref bit for the LUN.
- 2 Perform disk discovery again:

```
# vxdisk scandisks
```

## Upgrading from Veritas Storage Foundation 5.x to 6.0.1 may fail for IBM XIV Series arrays (2715119)

Starting in the Veritas Storage Foundation 5.1 SP1 release, the Array Support Library (ASL) for the IBM XIV enclosures converts the LUN Serial Number from Hexadecimal to Decimal. Because of this change, the enclosure names differ from releases prior to the 5.1 SP1 releases. When you upgrade Veritas Storage Foundation from a release prior to that release to the current 6.0.1 release, XIV LUNs may go into an error state. Note that the latest RPs on 5.1/5.1SP1 are already modified to use the same logic for enclosure naming.

### Workaround:

After the upgrade, run `vxddladm assign names`.

## Cannot grow Veritas Volume Manager (VxVM) disk using the vxdisk resize command during Dynamic LUN Expansion operation (2064510)

The following error message is displayed during the Dynamic LUN Expansion operation of a LUN with the SIMPLE format:

```
VxVM vxdisk ERROR V-5-1-8643 Device <device name>: resize failed:  
Invalid data in request
```

The `vxdisk resize` command keeps the cylinder size (number of the heads \* total number of the sectors per track) constant before and after the resize operation, unless the number of cylinders go beyond  $2^{16}-1$  (65535). Because of the VTOC limitation of storing geometry values only till  $2^{16}-1$ , if the number of cylinders increases beyond the limit, `vxdisk resize` increases the cylinder size. If this

happens, the private region will overlap with the public region data and corrupt the user data.

As a result of this LUN geometry change, VxVM is unable to complete `vxdisk resize` on simple format disks. VxVM was not designed to handle such geometry changes during Dynamic LUN Expansion operations on simple disks.

**Workaround:**

The VxVM `vxdisk resize` command behaves differently depending on whether the disk is simple, sliced, or CDS format.

The problem shown above only occurs on simple disk configurations. As a result of this difference in behavior, if the geometry changes during a Dynamic LUN Expansion operation at the LUN level, you can convert the disk to a CDS format disk. Use the `vxcdsconvert` command on the disk. Then you can issue the `vxdisk resize` command.

See <http://www.symantec.com/docs/TECH136240> for more information.

## The `vxdisksetup` command fails to initialize disks in `cdsdisk` format for LDOM disks greater than 1 TB (2557072)

The `vxdisksetup` command fails to initialize disks in `cdsdisk` format for LDOM disks greater than 1 TB. This issue is due to an LDOM operating system command which fails when the number of partitions in the GUID partition table (GPT) label is greater than 9. The `cdsdisk` format requires at least 128 partitions to be compatible with Linux systems.

**Workaround:** There is no workaround for this issue.

## Expanding a LUN to a size greater than 1 TB fails to show correct expanded size (2123677)

This issue occurs when you perform a Dynamic LUN Expansion for a LUN that is smaller than 1 TB and increase the size to greater than 1 Tb. After the expansion, Veritas Volume Manager (VxVM) fails ongoing I/O, and the public region size is reset to original size. After you run the `vxdisk scandisks` command, VxVM does not show the correct expanded size of the LUN. The issue is due to underlying Solaris issues. Refer to Sun Bug Id 6929449 and Sun Bug Id 6912703.

**Workaround:**

There is no workaround.

## 1 TB luns goes in error state with Solaris x86 (2706776)

If you label a disk device as EFI using format on a subset of the paths or on the DMP device, Solaris will not be able to propagate the label to all the other paths of the LUN. This will lead the device to appear in the error state under 'vxdisk list'.

### Workaround:

There is no workaround for this issue.

## Continuous trespass loop when a CLARiiON LUN is mapped to a different host than its snapshot (2761567)

If a CLARiiON LUN is mapped to a different host than its snapshot, a trespass on one of them could cause a trespass on the other. This behavior could result in a loop for these LUNs, as DMP tries to fail back the LUNs if the primary paths are available.

### Workaround:

To avoid this issue, turn off the `dmp_monitor_ownership` tunable:

```
# vxddmpadm settune dmp_monitor_ownership=off
```

## The vxrecover command does not handle RAID5 volumes correctly (2715124)

The `vxrecover` command calls the recovery process for the top-level volume, which internally takes care of recovering its subvolumes. The `vxrecover` command does not handle RAID5 volumes correctly. The recovery process fails to recover the subvolumes, which remain in the NEEDSYNC state.

### Workaround:

Manually recover the RAID5 volumes using the `vxvol` utility, as follows:

```
# vxvol -g diskgroup resync volume
```

## vxmirror to SAN destination failing when 5 partition layout is present: for example, root, swap, home, var, usr (2815311)

The `vxmirror` command may fail with following error on a Solaris 10 host, for a thin LUN, if more than one partition excluding root and swap is present.

```
VxVM vxbootsetup WARNING V-5-2-5667 Max volume count 5 exceeded.
```

Example:

```
# /etc/vx/bin/vxmirror" -f -g rootdg_17_23_49 rootdisk01 \  
rootdisk02  
! vxassist -g rootdg_17_23_49 mirror swapvol rootdisk02  
! vxassist -g rootdg_17_23_49 mirror rootvol rootdisk02  
! vxassist -g rootdg_17_23_49 mirror usr rootdisk02  
! vxassist -g rootdg_17_23_49 mirror var rootdisk02  
! vxassist -g rootdg_17_23_49 mirror home rootdisk02  
! vxbootsetup -g rootdg_17_23_49  
VxVM vxbootsetup WARNING V-5-2-5667 Max volume count 5 exceeded.  
VxVM vxbootsetup ERROR V-5-2-5678 Skipping volume 'home_dcl'  
because no free partitions are available on disk 'disk_0'.  
Either remove the volume or make a partition available  
VxVM vxbootsetup WARNING V-5-2-5667 Max volume count 5 exceeded.  
VxVM vxbootsetup ERROR V-5-2-5678 Skipping volume 'usr_dcl'  
because no free partitions are available on disk 'disk_0'.  
Either remove the volume or make a partition available  
VxVM vxbootsetup WARNING V-5-2-5667 Max volume count 5 exceeded.  
VxVM vxbootsetup ERROR V-5-2-5678 Skipping volume 'var_dcl' because  
no free partitions are available on disk 'disk_0'.  
Either remove the volume or make a partition available  
/usr/lib/vxvm/bin/vxmksdpart: 3pardata0_2492: is not an identifier
```

### **Diskgroup import of BCV luns using -o updateid and -o useclonedev options is not supported if the diskgroup has mirrored volumes with DCO or has snapshots. (2831658)**

VxVM uses guid stored in configuration to uniquely identify all objects. The DCO volume stores the guid of mirrors and snapshots. If the diskgroup is imported with -o updateid and -o useclonedev, it changes the guid of objects in VxVM configuration database and the guids stored in DCO volume are not updated. So the operations involving DCO will not be able to find objects with the stored guid and this could lead to failure of certain operations involving DCO or could lead to unexpected behaviour.

#### **Workaround:**

No workaround available.

### **After devices that are managed by EMC PowerPath lose access to storage, Veritas Volume Manager commands are delayed (2757198)**

In an environment which includes devices that are managed by EMC PowerPath, a storage loss causes Veritas Volume Manager commands to be delayed. In the



event of storage loss, VxVM sends SCSI inquiry from each LUN path to check the health of path, which are delayed by the presence of EMC PowerPath.

### Importing a disk group fails with incorrect error message (2149922)

Importing a disk group using clone disks fails with "wrong usage" or "invalid attribute" error. For example, the following command may show the error.

```
# vxpdg -o useclonedev=on import dgname
```

This error message may display if the correct feature licenses are not installed.

#### Workaround:

Check that the Fast Mirror Resync and Disk Group Split and Join licenses are installed. If not, install the licenses.

### Dynamic LUN expansion is not supported for EFI disks in simple or sliced formats (2836798)

Dynamic LUN expansion is not supported for EFI (Extensible Firmware Interface) disks in simple or sliced formats. It may lead to corruption. The recommended format is the Cross-platform Data Sharing (CDS) disk format.

#### Workaround:

Convert the disk format to CDS using the `vxcdsconvert` utility.

## Veritas File System known issues

This section describes the known issues in this release of Veritas File System (VxFS).

### Taking a FileSnap over NFS multiple times with the same target name can result in the 'File exists' error (2353352)

The "File exists" error occurs as a result of the caching behavior of the NFS client. Because the link operation is successful, the NFS client assumes that a file with the specified target name, such as `file2::snap:vxfs:`, was created.. As a result, the NFS client caches a file with this name.

**Workaround:** Remove the target file after a snapshot is created. This forces the NFS client to remove the name from the cache. For example:

```
# ln file1 file2::snap:vxfs:
# rm file2::snap:vxfs:
```

## Enabling delayed allocation on a small file system sometimes disables the file system (2389318)

When you enable delayed allocation on a small file system, such as around 100 MB, the file system can get disabled. In this case, the following error message displays in the system console log:

```
mesg 001: V-2-1: vx_nospace - file_system file system full
(size block extent)
```

### Workaround:

Use the `vxtunefs` command to turn off delayed allocation for the file system.

## Delayed allocation sometimes gets turned off automatically when one of the volumes in a multi-volume file system nears 100% usage even if other volumes have free space (2438368)

Delayed allocation sometimes gets turned off automatically when one of the volumes in a multi-volume file system is nearing 100% usage even if other volumes in the file system have free space.

### Workaround:

After sufficient space is freed from the volume, delayed allocation automatically resumes.

## Deduplication can fail with error 110 (2591473)

In some cases, data deduplication fails with a message similar to the following example:

Saving	Status	Node	Type	Filesystem
00%	FAILED	node01	MANUAL	/data/fs1
-----				
2011/10/26 01:38:58 End full scan with error				

In addition, the deduplication log contains an error similar to the following example:

```
2011/10/26 01:35:09 DEDUP_ERROR AddBlock failed. Error = 110
```

These errors indicate that the deduplication process is running low on space and needs more free space to complete.

### Workaround:

Make more space available on the file system.

## **vxresize fails while shrinking a file system with the "blocks are currently in use" error (2437138)**

The `vxresize` shrink operation may fail when active I/Os are in progress on the file system and the file system is being shrunk to a size closer to its current usage. You see a message similar to the following example:

```
UX:vxfs fsadm: ERROR: V-3-20343: cannot shrink /dev/vx/rdisk/dg1/voll -
blocks are currently in use.
VxVM vxresize ERROR V-5-1-7514 Problem running fsadm command for volume
voll, in diskgroup dg1
```

### **Workaround:**

Rerun the shrink operation after stopping the I/Os.

## **Warning message sometimes appear in the console during system startup (2354829)**

During system startup, following messages sometimes appear in system console:

```
WARNING: couldn't allocate SDT table for module vxfs
WARNING: couldn't allocate FBT table for module vxfs
Loading smf(5) service descriptions: 2/2
```

These warnings indicate that the SDT and FBT DTrace probes might not be available for the VxFS module. The VxFS module still loads and works correctly. Dtrace SDT/FBT has limits on the size of module that it can support. Since the VxFS module exceeds the size that Dtrace can support, SDT and FBT Dtrace probes might not work for VxFS.

### **Workaround:**

There is no workaround for this issue.

## **Possible assertion failure in vx\_freeze\_block\_threads\_all() (2244932)**

There is a possible assertion failure in the `vx_freeze_block_threads_all()` call when the `pdir_threshold` tunable is set to 1.

### **Workaround:**

There is no workaround for this issue.

## A mutex contention in `vx_worklist_lk()` can use up to 100% of a single CPU (2086902)

A mutex contention in the `vx_worklist_lk()` call can use up to 100% of a single CPU.

### Workaround:

There is no workaround for this issue.

## `fsppadm` operations issued on multi-volume file system fail if there are other mounted file systems with a disk layout Version less than 6 (2909206, 2909203)

The `fsppadm` command checks all mounted file systems, and if it finds any file systems with a disk layout Version that is less than 6, then it exits with the following error message:

```
# fsppadm assign /dst_vset /tmp/pol_test.xml
```

```
UX:vxfs fsppadm: ERROR: V-3-26510: Low level Volume enumeration failure  
on / with message Function not implemented
```

This error occurs because the `fsppadm` command functionality is not supported on a disk layout Version that is less than 6.

### Workaround:

There is no workaround for this issue.

## Replication known issues

This section describes the replication known issues in this release of Veritas Storage Foundation.

## `vradm` `syncvol` command compatibility with IPv6 addresses (2075307)

The `vradm syncvol` command does not work with the compressed form of IPv6 addresses if the target disk group and volume names are not specified.

### Workaround:

In IPv6 environments, if you run the `vradm syncvol` command and identify the target host using the compressed form of the IPv6 address, then you also need to specify the target disk group and volume names.

## RVGPrimary agent operation to start replication between the original Primary and the bunker fails during failback (2054804)

The RVGPrimary agent initiated operation to start replication between the original Primary and the bunker fails during failback – when migrating back to the original Primary after disaster recovery – with the error message:

```
VxVM VVR vxrlink ERROR V-5-1-5282 Error getting information from remote host. Internal Error.
```

The issue applies to global clustering with a bunker configuration, where the bunker replication is configured using storage protocol. It occurs when the Primary comes back even before the bunker disk group is imported on the bunker host to initialize the bunker replay by the RVGPrimary agent in the Secondary cluster.

### Workaround:

#### To resolve this issue

- 1 Before failback, make sure that bunker replay is either completed or aborted.
- 2 After failback, deport and import the bunker disk group on the original Primary.
- 3 Try the start replication operation from outside of VCS control.

## Bunker replay did not occur when the Application Service Group was configured on some of the systems in the Primary cluster, and ClusterFailoverPolicy is set to "AUTO" (2047724)

The time that it takes for a global cluster to fail over an application service group can sometimes be smaller than the time that it takes for VVR to detect the configuration change associated with the primary fault. This can occur in a bunkered, globally clustered configuration when the value of the `ClusterFailoverPolicy` attribute is `Auto` and the `AppGroup` is configured on a subset of nodes of the primary cluster.

This causes the RVGPrimary online at the failover site to fail. The following messages appear in the VCS engine log:

```
RVGPrimary:RVGPrimary:online:Diskgroup bunkerdgname could not be imported on bunker host hostname. Operation failed with error 256 and message VxVM VVR vradm ERROR V-5-52-901 NETWORK ERROR: Remote server unreachable... Timestamp VCS ERROR V-16-2-13066 (hostname) Agent is calling clean for resource(RVGPrimary) because the resource is not up even after online completed.
```

### Workaround:

**To resolve this issue**

- ◆ When the configuration includes a bunker node, set the value of the `OnlineRetryLimit` attribute of the `RVGPrimary` resource to a non-zero value.

**The RVGPrimary agent may fail to bring the application service group online on the new Primary site because of a previous primary-elect operation not being run or not completing successfully (2043831)**

In a primary-elect configuration, the `RVGPrimary` agent may fail to bring the application service groups online on the new Primary site, due to the existence of previously-created instant snapshots. This may happen if you do not run the `ElectPrimary` command to elect the new Primary or if the previous `ElectPrimary` command did not complete successfully.

**Workaround:**

Destroy the instant snapshots manually using the `vxrvg -g dg -P snap_prefix snapdestroy rvg` command. Clear the application service group and bring it back online manually.

**A snapshot volume created on the Secondary, containing a VxFS file system may not mount in read-write mode and performing a read-write mount of the VxFS file systems on the new Primary after a global clustering site failover may fail (1558257)****Issue 1:**

When the `vradmin ibc` command is used to take a snapshot of a replicated data volume containing a VxFS file system on the Secondary, mounting the snapshot volume in read-write mode may fail with the following error:

```
UX:vxfs mount: ERROR: V-3-21268: /dev/vx/dsk/dg/snapshot_volume  
is corrupted. needs checking
```

This happens because the file system may not be quiesced before running the `vradmin ibc` command and therefore, the snapshot volume containing the file system may not be fully consistent.

**Issue 2:**

After a global clustering site failover, mounting a replicated data volume containing a VxFS file system on the new Primary site in read-write mode may fail with the following error:

```
UX:vxfs mount: ERROR: V-3-21268: /dev/vx/dsk/dg/data_volume  
is corrupted. needs checking
```

This usually happens because the file system was not quiesced on the original Primary site prior to the global clustering site failover and therefore, the file systems on the new Primary site may not be fully consistent.

**Workaround:**

The following workarounds resolve these issues.

For issue 1, run the `fsck` command on the snapshot volume on the Secondary, to restore the consistency of the file system residing on the snapshot.

For example:

```
# fsck -F vxfs /dev/vx/dsk/dg/snapshot_volume
```

For issue 2, run the `fsck` command on the replicated data volumes on the new Primary site, to restore the consistency of the file system residing on the data volume.

For example:

```
# fsck -F vxfs /dev/vx/dsk/dg/data_volume
```

**In an IPv6-only environment RVG, data volumes or SRL names cannot contain a colon (1672410, 1672417, 1825031)**

Issue: After upgrading VVR to an IPv6-only environment in 6.0 release, `vradmin` commands may not work when a colon is specified in the RVG, data volume(s) and/or SRL name. It is also possible that after upgrading VVR to an IPv6-only environment, `vradmin createpri` may dump core when provided with RVG, volume and/or SRL names containing a colon in it.

**Workaround:**

Make sure that colons are not specified in the volume, SRL and RVG names in the VVR configuration

**While `vradmin` commands are running, `vradmin` may temporarily lose heart beats (2071568, 2275444)**

This issue may occasionally occur when you use `vradmin` commands to administer VVR. While the `vradmin` commands run, `vradmin` may temporarily lose heartbeats, and the commands terminate with the following error message:

```
VxVM VVR vradmin ERROR V-5-52-803 Lost connection to host host;  
terminating command execution.
```

**Workaround:****To resolve this issue**

- 1 Depending on the application I/O workload and network environment, uncomment and increase the value of the `IPM_HEARTBEAT_TIMEOUT` variable in the `/etc/vx/vras/vras_env` on all the hosts of the RDS to a higher value. The following example increases the timeout value to 120 seconds.

```
export IPM_HEARTBEAT_TIMEOUT
IPM_HEARTBEAT_TIMEOUT=120
```

- 2 Restart `vradmind` on all the hosts of the RDS to put the new `IPM_HEARTBEAT_TIMEOUT` value into affect. Enter the following on all the hosts of the RDS:

```
# /etc/init.d/vras-vradmind.sh stop
# /etc/init.d/vras-vradmind.sh start
```

**vxassist relay layout removes the DCM (145413)**

If you perform a relay layout that adds a column to a striped volume that has a DCM, the DCM is removed. There is no message indicating that this has happened. To replace the DCM, enter the following:

```
# vxassist -g diskgroup addlog vol logtype=dcm
```

**vxassist and vxresize operations do not work with layered volumes that are associated to an RVG (2162579)**

This issue occurs when you try a resize operation on a volume that is associated to an RVG and has a striped-mirror layout.

**Workaround:****To resize layered volumes that are associated to an RVG**

- 1 Pause or stop the applications.
- 2 Wait for the RLINKs to be up to date. Enter the following:

```
# vxrlink -g diskgroup status rlink
```

- 3 Stop the affected RVG. Enter the following:

```
# vxrvg -g diskgroup stop rvg
```



- 4 Disassociate the volumes from the RVG. Enter the following:

```
# vxvol -g diskgroup dis vol
```

- 5 Resize the volumes. In this example, the volume is increased to 10 GB. Enter the following:

```
# vxassist -g diskgroup growto vol 10G
```

- 6 Associate the data volumes to the RVG. Enter the following:

```
# vxvol -g diskgroup assoc rvg vol
```

- 7 Start the RVG. Enter the following:

```
# vxrvrg -g diskgroup start rvg
```

- 8 Resume or start the applications.

## **vradmin verifydata operation fails when replicating between versions 5.1 and 6.0 (2360713)**

When replicating in a cross-version VVR environment consisting of hosts running Storage Foundation 5.1 and hosts running Storage Foundation 6.0, the `vradmin verifydata` command fails with the following error:

```
VxVM VVR vxrsync ERROR V-5-52-2222 [from host]: VxVM in.vxrsyncd  
ERROR V-5-36-2125 Server volume access error during [assign volids]  
volume path: [/dev/vx/dsk/dg/snapshot_volume] reason: [this could be  
because a target volume is disabled or an rlink associated with a  
target volume is not detached during sync operation].
```

### **Workaround:**

There are two workarounds for this issue.

- Upgrade the hosts running Storage Foundation 5.1 to Storage Foundation 5.1SP1 or later and re-run the `vradmin verifydata` command.
- Follow the offline verification procedure in the "Verifying the data on the Secondary" section of the *Veritas Storage Foundation and High Availability Solutions Replication Administrator's Guide*. This process requires ensuring that the secondary is up-to-date, pausing replication, and running the `vradmin syncrvg` command with the `-verify` option.

## Cannot relayout data volumes in an RVG from concat to striped-mirror (2129601)

This issue occurs when you try a relayout operation on a data volume which is associated to an RVG, and the target layout is a striped-mirror.

### Workaround:

#### To relayout a data volume in an RVG from concat to striped-mirror

- 1 Pause or stop the applications.
- 2 Wait for the RLINKs to be up to date. Enter the following:  

```
# vxrlink -g diskgroup status rlink
```
- 3 Stop the affected RVG. Enter the following:  

```
# vxrvg -g diskgroup stop rvg
```
- 4 Disassociate the volumes from the RVG. Enter the following:  

```
# vxvol -g diskgroup dis vol
```
- 5 Relayout the volumes to striped-mirror. Enter the following:  

```
# vxassist -g diskgroup relayout vol layout=stripe-mirror
```
- 6 Associate the data volumes to the RVG. Enter the following:  

```
# vxvol -g diskgroup assoc rvg vol
```
- 7 Start the RVG. Enter the following:  

```
# vxrvg -g diskgroup start rvg
```
- 8 Resume or start the applications.

## vradmin verifydata may report differences in a cross-endian environment (2834424)

When replicating between two nodes in a cross-platform environment, and performing an autosync or replication, the vradmin verifydata command may report differences. This is due to different endianness between the platforms. However, the file system on the secondary node will be consistent and up to date.

## **vradmin verifydata operation fails if the RVG contains a volume set (2808902)**

In a VVR environment, the `vradmin verifydata` command fails with the following error if the replicated volume group (RVG) contains any volume set:

Message from Primary:

```
VxVM VVR vxrsync ERROR V-5-52-2009 Could not open device
/dev/vx/dsk/vvrdg/<volname> due to: stat of raw character volume path
failed
```

## **vradmin repstatus operation may display configuration error after cluster reconfiguration in a CVR environment (2779580)**

In a CVR environment, if there is a cluster reconfiguration, the `vradmin repstatus` command may display the following error message:

```
No Primary RVG
```

The `vradmin repstatus` command functions normally on the Primary site.

### **Workaround:**

Restart the `vradmind` daemon on both the Primary and Secondary nodes.

## **I/O hangs on the primary node when running vxrvg snaprestore operation (2762147)**

In a CVR environment, if a secondary node is set as the logowner for an RVG, issuing the `vxrvg snaprestore` command on the primary node may result in an I/O hang.

## **The vxrecover command does not automatically recover layered volumes in an RVG (2866299)**

The `vxrecover` command calls the recovery process for the top-level volume, which internally takes care of recovering its subvolumes. The `vxrecover` command does not handle layered volumes correctly. The recovery process fails to recover the subvolumes, which remain in the NEEDSYNC state.

### **Workaround:**

Manually recover the layered volumes using the `vxvol` utility, as follows:

```
# vxvol -g diskgroup resync volume
```

## Veritas Storage Foundation for Databases (SFDB) tools known issues

The following are known issues in this release of Veritas Storage Foundation for Databases (SFDB) tools.

### SFDB commands do not work in IPV6 environment (2619958)

In IPV6 environment, SFDB commands do not work for SF. There is no workaround at this point of time.

### Database Storage Checkpoint unmount may fail with device busy (2591463)

In some cases, when a database that is cloned using a Database Storage Checkpoint is shut down, an error similar to the following may occur:

```
SFAE Error:0457: Failed to unmount device
/dev/vx/dsk/datadg/datavol:Ckpt_1317707593_rw_1317708154.
Reason: VxFS returned error : umount: /tmp/clonedb/data: device is
busy
```

#### Workaround:

As an Oracle user, force shut down the clone database if it is up and then retry the unmount operation.

### Attempt to use SmartTier commands fails (2332973)

The attempts to run SmartTier commands such as `dbdst_preset_policy` or `dbdst_file_move` fail with the following error:

```
fsppadm: ERROR: V-3-26551: VxFS failure on low level mechanism
with message - Device or resource busy
```

This error occurs if a sub-file SmartTier command such as `dbdst_obj_move` has been previously run on the file system.

There is no workaround for this issue. You cannot use file-based SmartTier and sub-file SmartTier simultaneously.

### Attempt to use certain names for tiers results in error (2581390)

If you attempt to use certain names for tiers, the following error message is displayed:

```
SFORA dbdst_classify ERROR V-81-6107 Invalid Classname BALANCE
```

This error occurs because the following names are reserved and are not permitted as tier names for SmartTier:

- BALANCE
- CHECKPOINT
- METADATA

**Workaround:**

Use a name for SmartTier classes that is not a reserved name.

### **Clone operation failure might leave clone database in unexpected state (2512664)**

If the clone operation fails, it may leave the clone database in an unexpected state. Retrying the clone operation might not work.

**Workaround:**

If retrying does not work, perform one of the following actions depending on the point-in-time copy method you are using:

- For FlashSnap, resync the snapshot and try the clone operation again.
- For FileSnap and Database Storage Checkpoints, destroy the clone and create the clone again.
- For space-optimized snapshots, destroy the snapshot and create a new snapshot.

Contact Symantec support if retrying using the workaround does not succeed.

### **FlashSnap resync fails if there is an existing space-optimized snapshot (2479901)**

If you try a FlashSnap resync operation when there is an existing space-optimized snapshot, the resync operation fails with the following error:

```
Error: VxVM vxdg ERROR V-5-1-4597 vxdg join FS_oradg oradg failed
datavol_snp : Record already exists in disk group
archvol_snp : Record already exists in disk group
```

**Workaround:**

Destroy the space-optimized snapshot first and then perform the FlashSnap resync operation.

## Upgrading Veritas Storage Foundation for Databases (SFDB) tools from 5.0x to 6.0.1 (2184482)

The `sfua_rept_migrate` command results in an error message after upgrading SFHA or SF for Oracle RAC version 5.0 to SFHA or SF for Oracle RAC 6.0.1.

When upgrading from SF version 5.0 to SF 6.0.1 the `S*vxdbs3` startup script is renamed to `NO_S*vxdbs3`. The `S*vxdbs3` startup script is required by `sfua_rept_upgrade`. Thus when `sfua_rept_upgrade` is run, it is unable to find the `S*vxdbs3` startup script and gives the error message:

```
/sbin/rc3.d/S*vxdbs3 not found
SFORA sfua_rept_migrate ERROR V-81-3558 File: is missing.
SFORA sfua_rept_migrate ERROR V-81-9160 Failed to mount repository.
```

### Workaround

Before running `sfua_rept_migrate`, rename the startup script `NO_S*vxdbs3` to `S*vxdbs3`.

## Clone command fails if PFILE entries have their values spread across multiple lines (2844247)

If you have a `log_archive_dest_1` in single line in the `init.ora` file, then `dbed_vmclonedb` will work but `dbed_vmcloneb` will fail if you put in multiple lines for `log_archive_dest_1`.

### Workaround

There is no workaround for this issue.

## SFDB commands do not work with the ZHS16GBK character set (2715323)

SFDB commands do not work if the character set of the Oracle database is set to ZHS16GBK. This occurs because SFDB commands are not supported with multi-byte character sets except AL32UTF8 and ZHS16GBK is a multi-byte character set.

There is no workaround for this issue.

## Frequent occurrence of SFDB remote or privileged command error (2869262)

If you installed a single instance database and try to run SFDB-related commands, then an error similar to the following might occur:

```
$ /opt/VRTSdbed/bin/dbed_update
```

No repository found for database faildb, creating new one.

```
SFDB vxsfadm ERROR V-81-0450 A remote or privileged command could not  
be executed on host1
```

Reason: This can be caused by the host being unreachable or the vxdbd daemon not running on that host.

Action: Verify that the host swpa04 is reachable. If it is, verify that the vxdbd daemon is running using the /opt/VRTS/bin/vxdbdctrl status command, and start it using the /opt/VRTS/bin/vxdbdctrl start command if it is not running.

There is no workaround at this point of time.

## Data population fails after datafile corruption, rollback, and restore of offline checkpoint (2869259)

Sometimes when a datafile gets corrupted below its reservation size, the rollback may not pass and the file may not be rolled back correctly.

There is no workaround at this point of time.

## Checkpoint clone fails if the archive log destination is same as the datafiles destination (2869266)

Checkpoint cloning fails if the archive log destination is the same as the datafiles destination. The error is similar to:

```
Use of uninitialized value $path in hash element  
at /opt/VRTSdbed/lib/perl/DBED/CkptOracle.pm line 121.  
Use of uninitialized value $path in concatenation (.) or string  
at /opt/VRTSdbed/lib/perl/DBED/CkptOracle.pm line 124.  
Use of uninitialized value $path in pattern match (m//)  
at /opt/VRTSdbed/lib/perl/DBED/CkptOracle.pm line 126.
```

```
SFDB vxsfadm ERROR V-81-0564 Oracle returned error.
```

Reason: ORA-02236: invalid file name (DBD ERROR: error possibly near <\*> indicator at char 172 in 'CREATE CONTROLFILE REUSE SET DATABASE 'Tclone03' RESETLOGS NOARCHIVELOG

**Workaround:**

For the 6.0.1 release, create distinct archive and datafile mounts for the checkpoint service.

### **FileSnap detail listing does not display the details of a particular snap (2846382)**

FileSnap does not support displaying a detailed listing of a snapshot or clone. FileSnap only supports displaying a summary of all the snapshots or clones. For example, for the CLI `vxsfadm -s filesnap -a oracle --name=snap1 -o list`, a summary listing all the snapshots is displayed, instead of a detailed listing of a particular snapshot.

#### **Workaround:**

There is no workaround for this issue.

### **'vxdbd' process is online after Flash archive installation (2869269)**

After a Flash archive installation of the SF stack, the `vxdbd` process is up, even if the stack is not configured.

**Workaround:** You can ignore, or stop the `vxdbd` process using the `/opt/VRTSdbed/common/bin/vxdbdctrl stop` command.

### **Checkpoint clone fails in CFS environment if cloned using same checkpoint and same clone name on both nodes (2869268)**

The Checkpoint clone of an oracle database fails in a CFS environment, if you create a clone with a clone name and checkpoint name same as another clone up on a different CFS node.

#### **Workaround:**

There is no workaround. Create a clone with a different clone name.

### **Very long off-host cloning times for large number of datafiles (2849540)**

When cloning off-host in certain Oracle database configurations, particularly with several hundred datafiles, the cloning can take a very long time, upto an hour or more. This problem does not cause the cloning to fail. The problem applies to all services such as FlashSnap, Space-optimized snapshots, FileSnap, and Checkpoint.

#### **Workaround:**

There is no workaround at this point of time.



## **sfua\_rept\_migrate fails after phased SFRAC upgrade from 5.0MP3RP5 to 6.0.1 (2874322)**

Command `sfua_rept_migrate` sometimes gives an error when upgrading to 6.0.1, and fails to unmount the repository volume. The error message is similar to:

```
# ./sfua_rept_migrate
Mounting SFUA Sybase ASA repository.
Unmounting SFUA Sybase ASA repository.
UX:vxfs umount: ERROR: V-3-26388: file system /rep has been mount
locked
SFORA sfua_rept_migrate ERROR V-81-5550 umount /dev/vx/dsk/repdg/repvol
failed.
SFORA sfua_rept_migrate ERROR V-81-9162 Failed to umount repository.
```

### **Workaround:**

The error does not hamper the upgrade. The repository migration works fine, but the old repository volume does not get unmounted. Unmount the mount using the manual option.

For example, use `/opt/VRTS/bin/umount -o mntunlock=VCS /rep`.

For more information, see [TECH64812](#).

## **Software limitations**

This section covers the software limitations of this release.

See the corresponding Release Notes for a complete list of software limitations related to that component or product.

See [“Documentation”](#) on page 60.

## **Veritas Volume Manager software limitations**

The following are software limitations in this release of Veritas Volume Manager.

### **Snapshot configuration with volumes in shared disk groups and private disk groups is not supported**

A snapshot configuration with volumes in the shared disk groups and private disk groups is not a recommended configuration. In this release, this configuration is not supported.

## Storage reclamation does not happen on volumes with break-off snapshot (2798523)

In this release, storage reclamation on a volume is prevented when it has a break-off type snapshot. If storage reclamation is allowed on such volumes, it can lead to the following undesired situation. Instant snapshot operations, including `vxsnap refresh` and `vxsnap restore` operations, lead to full synchronization of either the snapshot or the primary volume depending on the operation.

In this release, if the volume has a snapshot, the storage reclamation is silently prevented. The physical storage is not reduced. The `reclaim` command reports that the reclamation is done on the disks but the actual storage is not reclaimed for volumes with snapshots:

```
# vxdisk -o full reclaim dg1
Reclaiming storage on:
Disk xiv0_617 : Done.
Disk xiv0_616 : Done.
Disk xiv0_618 : Done.
Disk xiv0_612 : Done.
Disk xiv0_613 : Done.
Disk xiv0_614 : Done.
Disk xiv0_615 : Done
```

As shown in the following example output, the storage is not actually reclaimed.

```
# vxdisk -o thin list
DEVICE      SIZE (MB)  PHYS_ALLOC (MB)  GROUP  TYPE
xiv0_612    19313     2101              dg1    thinrclm
xiv0_613    19313     2108              dg1    thinrclm
xiv0_614    19313      35                dg1    thinrclm
xiv0_615    19313      32                dg1    thinrclm
xiv0_616    19313      31                dg1    thinrclm
xiv0_617    19313      31                dg1    thinrclm
xiv0_618    19313      31                dg1    thinrclm
```

## SF does not support thin reclamation of space on a linked mirror volume (2729563)

The thin reclamation feature does not support thin reclamation for a linked mirror volume.

## **DMP does not support devices in the same enclosure that are configured in different modes (2643506)**

DMP does not support the configuration where two devices in the same enclosure are configured in different modes. For example, if one device is configured as ALUA and another one is configured as Active/Passive (A/P).

## **Veritas File System software limitations**

The following are software limitations in the 6.0.1 release of Veritas Storage Foundation.

### **Recommended limit of number of files in a directory**

To maximize VxFS performance, do not exceed 100,000 files in the same directory. Use multiple directories instead.

### **The vxlist command cannot correctly display numbers greater than or equal to 1 EB**

The `vxlist` command and all of the other commands that use the same library as the `vxlist` command cannot correctly display numbers greater than or equal to 1 EB.

### **Limitations with delayed allocation for extending writes feature**

The following limitations apply to the delayed allocation for extending writes feature:

- In the cases where the file data must be written to disk immediately, delayed allocation is disabled on that file. Examples of such cases include Direct I/O, concurrent I/O, FDD/ODM access, and synchronous I/O.
- Delayed allocation is not supported on memory mapped files.
- Delayed allocation is not supported with BSD quotas. When BSD quotas are enabled on a file system, delayed allocation is turned off automatically for that file system.
- Delayed allocation is not supported for shared mounts in a cluster file system.

### **FlashBackup in NetBackup 7.1 and prior does not support disk layout Version 8 and 9**

The FlashBackup feature of NetBackup 7.1 or prior does not support a VxFS file system with disk layout Version 8 or 9.

### **Compressed files that are backed up using NetBackup 7.1 or prior become uncompressed when you restore the files**

The NetBackup 7.1 release and prior does not support the file compression feature. If you back up compressed files using NetBackup 7.1 or a prior release, the files become uncompressed when you restore the files.

## Veritas Storage Foundation for Databases (SFDB) tools software limitations

The following are the SFDB tools software limitations in this release.

### **Parallel execution of `vxsfadm` is not supported (2515442)**

Only one instance of the `vxsfadm` command can be run at a time. Running multiple instances of `vxsfadm` at a time is not supported.

### **Creating point-in-time copies during database structural changes is not supported (2496178)**

SFDB tools do not support creating point-in-time copies while structural changes to the database are in progress, such as adding or dropping tablespaces and adding or dropping data files.

However, once a point-in-time copy is taken, you can create a clone at any time, regardless of the status of the database.

## Documentation

Product guides are available in the PDF format on the software media in the `/docs/product_name` directory. Additional documentation is available online.

Make sure that you are using the current version of documentation. The document version appears on page 2 of each guide. The publication date appears on the title page of each document. The latest product documentation is available on the Symantec website.

<http://sort.symantec.com/documents>

## Documentation set

[Table 1-9](#) lists the documentation for Veritas Storage Foundation.

**Table 1-9** Veritas Storage Foundation documentation

Document title	File name
<i>Veritas Storage Foundation Release Notes</i>	sf_notes_601_sol.pdf
<i>Veritas Storage Foundation Installation Guide</i>	sf_install_601_sol.pdf
<i>Veritas Storage Foundation Administrator's Guide</i>	sf_admin_601_sol.pdf
<i>Veritas Storage Foundation: Storage and Availability Management for Oracle Databases</i>	sfhas_oracle_admin_601_unix.pdf
<i>Veritas File System Programmer's Reference Guide</i> (This document is available online, only.)	vxfs_ref_601_sol.pdf

**Table 1-10** lists the documentation for Veritas Storage Foundation and High Availability Solutions products.

**Table 1-10** Veritas Storage Foundation and High Availability Solutions products documentation

Document title	File name
<i>Veritas Storage Foundation and High Availability Solutions Solutions Guide</i>	sfhas_solutions_601_sol.pdf
<i>Veritas Storage Foundation and High Availability Solutions Virtualization Guide</i>	sfhas_virtualization_601_sol.pdf
<i>Veritas Storage Foundation and High Availability Solutions Replication Administrator's Guide</i>	sfhas_replication_admin_601_sol.pdf

If you use Veritas Operations Manager (VOM) to manage Veritas Storage Foundation and High Availability products, refer to the VOM product documentation at:

<http://sort.symantec.com/documents>

**Note:** The GNOME PDF Viewer is unable to view Symantec documentation. You must use Adobe Acrobat to view the documentation.

## Manual pages

The manual pages for Veritas Storage Foundation and High Availability Solutions products are installed in the `/opt/VRTS/man` directory.

Set the `MANPATH` environment variable so the `man(1)` command can point to the Veritas Storage Foundation manual pages:

- For the Bourne or Korn shell (`sh` or `ksh`), enter the following commands:

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

- For C shell (`csh` or `tcsh`), enter the following command:

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

See the `man(1)` manual page.

The latest manual pages are available online in HTML format on the Symantec website at:

<https://sort.symantec.com/documents>