

# Veritas Storage Foundation™ 6.0.4 Release Notes - Linux

# Veritas Storage Foundation Release Notes

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Product version: 6.0.4

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Symantec Corporation  
350 Ellis Street  
Mountain View, CA 94043

<http://www.symantec.com>

# 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.

Symantec's support offerings include the following:

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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)

Before contacting Technical Support, make sure you have satisfied the system requirements that are listed in your product documentation. Also, you should be at the computer on which the problem occurred, in case it is necessary to replicate the problem.

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:

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

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

This document includes the following topics:

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## About this document

This document provides important information about Veritas Storage Foundation (SF) version 6.0.4 for Linux. 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: 6.0.4 Rev 3" 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 in this release

This section describes the changes introduced in this release.

### Support for SLES11 SP3

SF now supports SUSE Linux Enterprise Server 11 Service Pack 3.

See “[Supported Linux operating systems](#)” on page 11.

### Supported Oracle configurations

In 6.0.4 release, SFDB tools support Oracle 12c release for Oracle databases on Linux platform.

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**Note:** SFDB does not support the Multitenant database feature for Oracle 12c.

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## No longer supported

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

- The `fsppmk` 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

## System requirements

This section describes the system requirements for this release.

### Supported Linux 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	Kernel version	Chipsets
SUSE Linux Enterprise 11	SP2, SP3	3.0.13-0.27 3.0.76-0.11	64-bit x86, EMT*/Opteron 4.1 64-bit only

\* Extended Memory Technology

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**Note:** Only 64-bit operating systems are supported.

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If your system is running an older version of SUSE Linux Enterprise Server, upgrade it before attempting to install the Veritas software. Consult the SUSE documentation for more information on upgrading or reinstalling your operating system.

Symantec supports only SUSE distributed kernel binaries.

Symantec products operate on subsequent kernel and patch releases provided the operating systems maintain kernel Application Binary Interface (ABI) compatibility.

## Required Linux RPMs for SF

Make sure you install the following operating system-specific RPMs on the systems where you want to install or upgrade SF. SF will support any updates made to the following RPMs, provided the RPMs maintain the ABI compatibility.

[Table 1-2](#) lists the RPMs that SF requires for a given Linux operating system.

**Table 1-2** Required RPMs

Operating system	Required RPMs
SLES 11 SP2	coreutils-8.12-6.19.1.x86_64.rpm ed-0.2-1001.30.1.x86_64.rpm findutils-4.4.0-38.26.1.x86_64.rpm glibc-2.11.3-17.31.1.x86_64.rpm glibc-32bit-2.11.3-17.31.1.x86_64.rpm libacl-2.2.47-30.34.29.x86_64.rpm libacl-32bit-2.2.47-30.34.29.x86_64.rpm libgcc46-32bit-4.6.1_20110701-0.13.9.x86_64.rpm libgcc46-4.6.1_20110701-0.13.9.x86_64.rpm libncurses5-5.6-90.55.x86_64.rpm libstdc++46-32bit-4.6.1_20110701-0.13.9.x86_64.rpm libstdc++46-4.6.1_20110701-0.13.9.x86_64.rpm module-init-tools-3.11.1-1.21.1.x86_64.rpm pam-32bit-1.1.5-0.10.17.x86_64.rpm parted-2.3-10.21.18.x86_64.rpm

**Table 1-2** Required RPMs (*continued*)

Operating system	Required RPMs
SLES 11 SP3	coreutils-8.12-6.25.27.1.x86_64.rpm ed-0.2-1001.30.1.x86_64.rpm findutils-4.4.0-38.26.1.x86_64.rpm glibc-2.11.3-17.54.1.x86_64.rpm glibc-32bit-2.11.3-17.54.1.x86_64.rpm libacl-2.2.47-30.34.29.x86_64.rpm libacl-32bit-2.2.47-30.34.29.x86_64.rpm libgcc_s1-32bit-4.7.2_20130108-0.15.45.x86_64.rpm libgcc_s1-4.7.2_20130108-0.15.45.x86_64.rpm libncurses5-5.6-90.55.x86_64.rpm libstdc++6-32bit-4.7.2_20130108-0.15.45.x86_64.rpm libstdc++6-4.7.2_20130108-0.15.45.x86_64.rpm module-init-tools-3.11.1-1.28.5.x86_64.rpm pam-32bit-1.1.5-0.10.17.x86_64.rpm parted-2.3-10.38.16.x86_64.rpm

## Storage Foundation for Databases features supported in database environments

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

**Table 1-3** 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
Concurrent I/O	Yes	Yes	Yes	Yes	Yes
Storage Checkpoints	Yes	Yes	Yes	Yes	Yes
Flashsnap	Yes	Yes	Yes	Yes	Yes

**Table 1-3** SFDB features supported in database environments (*continued*)

Veritas Storage Foundations feature	DB2	Oracle	Oracle RAC	Sybase	Sybase ASE CE
SmartTier	Yes	Yes	Yes	Yes	Yes
Database Storage Checkpoints <b>Note:</b> Requires Enterprise license	Yes	Yes	Yes	No	No
Database Flashsnap <b>Note:</b> Requires Enterprise license	Yes	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.

## Fixed issues

This section covers the fixed issues for Veritas Files System (VxFS), Veritas Volume Manager (VxVM) and Storage Foundation for Databases (SFDB) tools.

## Installation and upgrades fixed issues

This section describes the installation and upgrade issues fixed since the previous major release.

### Installation and upgrades: issues fixed in 6.0.4

In this release, there were no fixed issues related to installation and upgrades.

### Installation and upgrades: issues fixed in 6.0.3

This section describes the installation and upgrade issues fixed in 6.0.3.

**Table 1-4** Installation and upgrades 6.0.3 fixed issues

Incident	Description
2967125	Eval injection vulnerability in the Digest module before 1.17 for Perl allows context-dependent attackers to execute arbitrary commands via the new constructor.

### 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 1-5** 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
2585899	On RHEL, unable to create storage for OCR and Vote disk when using FQDN instead of using only the node name.
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.

## Veritas File System fixed issues

This section describes Veritas File System fixed issues in 6.0.4, 6.0.3 and 6.0.1.

### Veritas File System: issues fixed in 6.0.4

[Table 1-6](#) describes the incidents that are fixed in Veritas File System (VxFS) in 6.0.4.

**Table 1-6** Veritas File System 6.0.4 fixed issues

Incident	Description
3312030	The default quota support on Veritas File System version 6.0.4 is changed to 32 bit.
3270210	On SUSE Linux Enterprise Server 11 (SLES 11) SP3, no support is provided for <code>VRTSfsadv</code> , <code>VRTSfssdk</code> , <code>VRTSvxfs</code> and <code>VRTSsvs</code> .
3270200	Support for SLES 11 SP3 is added.
3268931	Support for SLES 11 SP3 is added.
3268916	Support for SLES 11 SP3 is added.
3268908	Support for SLES 11 SP3 is added.
3257467	Support for SLES 11 SP3 is added.
3248955	The system fails to build modules on SLES 11 SP3 for Veritas Oracle Disk Manager (ODM), because it cannot find the <code>utsrelease.h</code> file needed to build the ODM module for SP3 on SLES 11.
3247752	The system panics with the following message during the internal stress tests: <code>Unable to handle kernel paging request at &lt;addr&gt;</code>
3214816	With the DELICACHE feature enabled, frequent creation and deletion of the inodes of a user may result in corruption of the user quota file.
3149174	Veritas Oracle Disk Manager (ODM) clone shutdown fails with the <code>ORA-03113: end-of-file on communication channel error</code> .
3142045	With Oracle 12c version, the Veritas Oracle Disk Manager (ODM) library causes a version mismatch on the RHEL6 platform.
3140990	Requirement for the ability to turn off VxFS's invalidation of pages for some Network File System (NFS) workloads.
3121933	The <code>pwrite(2)</code> function fails with the <code>EOPNOTSUPP</code> error.



**Table 1-6** Veritas File System 6.0.4 fixed issues (*continued*)

Incident	Description
3101418	The current time returned by the operating system (Oracle error code ORA-01513) during Oracle startup is invalid.
3089210	The message <code>V-2-17: vx_iread_1 filesystem file system inode inode number marked bad incore</code> is displayed in the system log.
3079215	Oracle RAC Database creation fails with the <code>Ora-00600 [ksfd_odmio1]</code> error when Veritas ODM links.
3068902	In case of stale NFS mounts, the <code>statfs()</code> function calls on non-VxFS file systems may cause <code>df</code> commands to hang.
3042485	During internal stress testing, the <code>f:vx_purge_nattr:1</code> assert fails.
2999493	The file system check validation fails after a successful full <code>fsck</code> during the internal testing with the message: <code>run_fsck : First full fsck pass failed, exiting</code>
2991880	In low memory conditions on a VxFS, certain file system activities may seem to be non-responsive.
2983248	The <code>vxrepquota(1M)</code> command dumps core.
2977828	The file system is marked bad after an inode table overflow error occurs.
2966277	Systems with high file system activity like <code>read/write/open/lookup</code> may panic the system.
2963763	When the <code>thin_friendly_alloc()</code> and <code>deliache_enable()</code> functionality is enabled, VxFS may enter a deadlock.
2926684	In rare cases, the system may panic while performing a logged write.
2908391	It takes a long time to remove checkpoints from the VxFS file system, when there are a large number of files present.
2907930	VxFS and VxVM components fail to install post SLES11 SP2 GA kernel versions with 4 digits.
2907923	VxFS and VxVM components fail to install post SLES11 SP2 GA kernel versions with 4 digits.
2907919	VxFS and VxVM components fail to install post SLES11 SP2 GA kernel versions with 4 digits.
2907908	VxFS and VxVM components fail to install post SLES11 SP2 GA kernel versions with 4 digits.

**Table 1-6** Veritas File System 6.0.4 fixed issues (*continued*)

Incident	Description
2885592	The <code>vxdump</code> operation is aborted on a file system which is compressed using the <code>vxcompress</code> command.
2839871	On a system with DELICACHE enabled, several file system operations may hang.
2834192	You are unable to mount the file system after the full <code>fscck(1M)</code> utility is run.

## Veritas File System: issues fixed in 6.0.3

[Table 1-7](#) describes the incidents that are fixed in Veritas File System in 6.0.3.

**Table 1-7** Veritas File System 6.0.3 fixed issues

Incident	Description
3004466	Installation of 5.1SP1RP3 fails on RHEL 6.3.
2895743	Accessing named attributes for some files seems to be slow.
2893551	When nfs connections are under load , file attribute information is replaced by question marks.
2881211	File ACLs not preserved in checkpoints properly if file has hardlink.
2858683	Reserve extent attributes changed after <code>vxrestore</code> , only for files greater than 8192bytes.
2857751	The internal testing hits the assert "f:vx_cbdnrc_enter:1a".
2857629	File system corruption can occur requiring a full <code>fscck</code> of the system.
2821152	Internal Stress test hit an assert "f:vx_dio_physio:4,1" on locally mounter file system.
2806466	<code>fsadm -R</code> resulting in panic at LVM layer due to <code>vx_ts.ts_length</code> set to 2GB.
2773383	Read/Write operation on a memory mapped files seems to be hung.
2641438	Modifications to user name space extended attributes are lost after a system reboot.
2624262	<code>fsdedup.bin</code> hit oops at <code>vx_bc_do_brelse</code> .
2611279	Filesystem with shared extents may panic.
2417858	VxFS quotas do not support 64 bit limits.

## 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 1-8** Veritas File System fixed issues

Incident	Description
2764861	Uncompress by vxcompress ignores quota limitation.
2753944	The file creation threads can hang.
2735912	The performance of tier relocation using fspadm 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.
2682550	Access a VxFS file system via NFS could cause system panic on Linux while unmount is in progress.
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.
2597347	fsck should not coredump when only one of the device record has been corrupted and the replica is intact.
2584531	vxfs hangs on ls, du and find.
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.

**Table 1-8** Veritas File System fixed issues (*continued*)

Incident	Description
2086902	Spinlock held too long on vxfs spinlock, and there is high contention for it.
1529708	Formatting issue with the output of vxrepquota.

## Veritas Volume Manager fixed issues

This section describes Veritas Volume Manager fixed issues in 6.0.4, 6.0.3 and 6.0.1.

### Veritas Volume Manager: issues fixed in 6.0.4

[Table 1-9](#) describes the incidents that are fixed in Veritas Volume Manager in 6.0.4. (Only for SLES11)

**Table 1-9** Veritas Volume Manager 6.0.4 fixed issues

Incident	Description
3321269	The command <code>vxunroot</code> may hang during un-encapsulation of root disk.
3240858	The <code>/etc/vx/vxesd/.udev_lock</code> file may have different permissions at different instances.
3199056	Veritas Volume Replicator (VVR) primary system panics in the <code>vol_cmn_err</code> function due to the VVR corrupted queue.
3186971	The logical volume manager (LVM) configuration file is not correctly set after turning on DMP native support. As a result, the system is unbootable.
3186149	On Linux System with LVM version 2.02.85, on enabling <code>dmp_native_support</code> LVM volume Groups will disappear
3182350	If there are more than 8192 paths in the system, the <code>vxassist(1M)</code> command hangs when you create a new VxVM volume or increase the existing volume's size.
3182175	The <code>vxdisk -o thin,fssize list</code> command can report incorrect File System usage data.
3177758	Performance degradation is seen after upgrade from SF 5.1SP1RP3 to SF 6.0.1 on Linux.
3162418	The <code>vxconfigd(1M)</code> command dumps core due to wrong check in <code>ddl_find_cdevno()</code> function.

**Table 1-9** Veritas Volume Manager 6.0.4 fixed issues (*continued*)

Incident	Description
3146715	Rlinks do not connect with Network Address Translation (NAT) configurations on Little Endian Architecture.
3130353	Continuous disable or enable path messages are seen on the console for EMC Not Ready (NR) devices.
3121380	I/O of Replicated Volume Group (RVG) hangs after one data volume is disabled.
3091916	The Small Computer System Interface (SCSI) I/O errors overflow the syslog.
3063378	Some VxVM commands run slowly when EMC PowerPath presents and manages "read only" devices such as EMC SRDF-WD or BCV-NR.
3015181	I/O can hang on all the nodes of a cluster when the complete non-A or A class of storage is disconnected.
3012929	The <code>vxconfigbackup(1M)</code> command gives errors when disk names are changed.
3010191	Previously excluded paths are not excluded after upgrade to VxVM 5.1SP1RP3.
2986596	The disk groups imported with mix of standard and clone Logical Unit Numbers (LUNs) may lead to data corruption.
2972513	Cluster Volume Manager (CVM) and PGR keys from shared data disks are not removed after stopping VCS.
2959733	Handling the device path reconfiguration in case the device paths are moved across LUNs or enclosures to prevent the <code>vxconfigd(1M)</code> daemon coredump.
2905579	VxVM RPM installation on SLES11 SP2 fails for kernel version 3.0.26-0.7.6 and above.
2882312	If an SRL fault occurs in the middle of an I/O load, and you immediately issue a read operation on data written during the SRL fault, the system returns old data.
2857360	The <code>vxconfigd(1M)</code> command hangs when the <code>vol_use_rq</code> tunable of VxVM is changed from 1 to 0.
2857044	System crashes while resizing a volume with data change object (DCO) version 30.

**Table 1-9** Veritas Volume Manager 6.0.4 fixed issues (*continued*)

Incident	Description
3052770	The <code>vradmin syncrvg</code> operation with a volume set fails to synchronize the secondary RVG with the primary RVG.

## Veritas Volume Manager: issues fixed in 6.0.3

[Table 1-10](#) describes the incidents that are fixed in Veritas Volume Manager in 6.0.3.

**Table 1-10** Veritas Volume Manager 6.0.3 fixed issues

Incident	Description
3002770	Accessing NULL pointer in <code>dmp_aa_recv_inquiry()</code> caused system panic.
2971746	For single-path device, <code>bdget()</code> function is being called for each I/O, which cause high cpu usage and leads to I/O performance degradation.
2970368	Enhancing handling of SRDF-R2 WD devices in DMP.
2965910	<code>vxassist dump core</code> with the <code>-o ordered</code> option.
2964169	In multiple CPUs environment, I/O performance degradation is seen when I/O is done through VxFS and VxVM specific private interface.
2962262	Uninstallation of DMP fails in presence of other multi-pathing solutions.
2948172	Executing the <code>vxdisk -o thin,fssize list</code> command can result in panic.
2943637	DMP IO statistic thread may cause out of memory issue so that OOM(Out Of Memory) killer is invoked and causes system panic.
2942609	Message displayed when user quits from Dynamic Reconfiguration Operations is shown as error message.
2940446	Full fsck hangs on I/O in VxVM when cache object size is very large
2935771	In the VVR environment, RLINK disconnects after the master is switched.
2933138	panic in <code>voldco_update_itemq_chunk()</code> due to accessing invalid buffer
2930569	The LUNs in 'error' state in output of 'vxdisk list' cannot be removed through DR(Dynamic Reconfiguration) Tool.
2928764	SCSI3 PGR registrations fail when <code>dmp_fast_recovery</code> is disabled.

**Table 1-10** Veritas Volume Manager 6.0.3 fixed issues (*continued*)

Incident	Description
2919720	vxconfigd core in rec_lock1_5()
2919714	exit code from vxevac is zero when migrating on thin luns but FS is not mounted
2919627	Dynamic Reconfiguration tool should be enhanced to remove LUNs feasibly in bulk.
2919318	The I/O fencing key value of data disk are different and abnormal in a VCS cluster with I/O fencing.
2916094	Enhancements have been made to the Dynamic Reconfiguration Tool(DR Tool) to create a separate log file every time DR Tool is started, display a message if a command takes longer time, and not to list the devices controlled by TPD (Third Party Driver) in 'Remove Luns' option of DR Tool.
2915063	Rebooting VIS array having mirror volumes, master node panicked and other nodes CVM FAULTED
2911040	Restore from a cascaded snapshot when its source is DETACHED leaves the volume in unusable state
2910043	Avoid order 8 allocation by vxconfigd in node reconfig.
2899173	vxconfigd hang after executing the <code>vradmin stoprep</code> comand.
2898547	vradmin on VVR Secondary Site dumps core, when Logowner Service Group on VVR (Veritas Volume Replicator) Primary Site is shuffled across its CVM (Clustered Volume Manager) nodes.
2892983	vxvol dumps core if new links are added while the operation is in progress.
2886402	vxconfigd hang while executing <code>tc ./scripts/ddl/dmpapm.tc#11</code> .
2886333	The <code>vxdg (1M) join</code> command should not allow mixing clone and non-clone disks in a DiskGroup.
2878876	vxconfigd dumps core in <code>vol_cbr_dolog()</code> due to race between two threads processing requests from the same client.
2869594	Master node panics due to corruption if space optimized snapshots are refreshed and "vxclustadm setmaster" is used to select master.
2866059	Improving error messages hit during the <code>vxdisk resize</code> operation.
2859470	SRDF R2 with EFI label is not recognized by VxVM and showing in error state

**Table 1-10** Veritas Volume Manager 6.0.3 fixed issues (*continued*)

Incident	Description
2858853	vxconfigd coredumps in dbf_fmt_tbl on the slave node after a Master Switch if you try to remove a disk from the DG.
2851403	The vxportal and vxfs processes are failed to stop during first phase of rolling upgrade.
2851085	DMP doesn't detect implicit LUN ownership changes for some of the dmpnodes.
2839059	vxconfigd logged warning cannot open /dev/vx/rdmp/cciss/c0d device to check for ASM disk format.
2837717	The vxdisk(1M) resize command fails if da name is specified.
2836798	Prevent DLE on simple/sliced disk with EFI label
2834046	NFS migration failed due to device reminoring.
2833498	vxconfigd hangs while reclaim operation is in progress on volumes having instant snapshots
2826125	VxVM script daemon is terminated abnormally when it is invoking with exact the same process id of the last invocation.
2815517	vx dg adddisk should not allow mixing clone & non-clone disks in a DiskGroup
2801962	Grow of a volume takes significantly large time when the volume has version 20 DCO (Data Change Object) attached to it
2798673	System panics in voldco_alloc_layout() while creating volume with instant DCO.
2779580	Secondary node gives configuration error (no Primary RVG) after reboot of master node on Primary site.
2753954	At cable disconnect on port1 of dual-port FC HBA, paths via port2 are also marked SUSPECT.
2744004	vxconfigd is hung on the VVR secondary node during VVR configuration.
2715129	vxconfigd hangs during Master takeover in a CVM (Clustered Volume Manager) environment.
2692012	The vxevac move error message needs to be enhanced to be less generic and give clear message for failure..



**Table 1-10** Veritas Volume Manager 6.0.3 fixed issues (*continued*)

Incident	Description
2619600	Live migration of virtual machine having SFHA/SFCFSHA stack with data disks fencing enabled, causes service groups configured on virtual machine to fault.
2567618	VRTSexplorer coredumps in vxcheckhbaapi/print_target_map_entry
2510928	Extended attributes for SRDF luns reported as Mirror with EMC (VMAX array)
2398416	vxassist dumps core while creating volume after adding attribute "wantmirror=ctrl" in default vxassist rulefile
2273190	Incorrect setting of the UNDISCOVERED flag can lead to database inconsistency.
2149922	Record the diskgroup import and deport events in syslog.
2000585	The <code>vxrecover -s</code> command does not start any volumes if a volume is removed whilst it is running.
1982965	vx dg import DG fails if da-name is based on naming scheme which is different from the prevailing naming scheme on the host.
1973983	vxunreloc fails when dco plex is in DISABLED state.
1903700	vxassist remove mirror does not work if nmirror and alloc is specified on VxVM 3.5
1901838	Incorrect setting of the Nolicense flag can lead to dmp database inconsistency.
1859018	The link detached from volume warnings are displayed when a linked-breakoff snapshot is created.
1765916	VxVM socket files don't have proper write protection
1725593	The <code>vx dmpadm listctrl</code> command has to be enhanced to print the count of device paths seen through the controller.

## 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 1-11** Veritas Volume Manager fixed issues

Incident	Description
2838059	VVR Secondary panic in <code>vol_rv_update_expected_pos</code> .
2832784	ESX panicked after applying a template file from GUI.
2826958	The <code>pwwn</code> number is not displayed in the output of command <code>vxdmppadm list dmpnode dmpnodename=dmpnode name</code> .
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.
2751102	Random panics seen in <code>vx_worklist_thr</code> on SLES11 and VxFS.
2747032	Write is taking long time to complete when read/write happen simultaneously.
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 <code>sourcedg</code> .
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.
2726148	System unbootable after <code>/usr/lib/vxvm/bin/vxupdate1vm</code> script updates filter in <code>lvm.conf</code> file.
2721807	Root disk encapsulation: On SLES11 SP2, machine went to maintenance mode during final reboot after encap.

**Table 1-11** Veritas Volume Manager fixed issues (*continued*)

Incident	Description
2711312	Missing symbolic link is created after pulling FC cable on RHEL6.
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.
2709743	Inplace upgrade is not working from 6.0.
2701654	Phantom DMP disk partition causes panic.
2700792	SEGV in <code>vxconfigd</code> daemon during CVM startup.
2700486	The <code>vradmin</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.
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.
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.
2664825	Disk group import fails when disk contains no valid UDID tag on config copy and config copy is disabled.
2660151	The <code>vxconfigd</code> daemon is generating a series of LVM header messages for devices (CLONES/replicated devices). Secondary EMC MirrorView LUNS in an error state.
2656803	Race between <code>vxnetd start</code> and <code>stop</code> operations causes panic.
2652485	Inactive snapshot LUNs cause trespassing.
2644248	The <code>vxunroot</code> command fails as root partition "logvol" mounted on <code>/var/log</code> .

**Table 1-11** Veritas Volume Manager fixed issues (*continued*)

Incident	Description
2643634	Message enhancement for a mixed (non-cloned and cloned) disk group import.
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>vxvdmpadm list dmpnode</code> printing incorrect path type.
2623182	<code>vxvm-boot</code> not cleaning up <code>/tmp/vx.*</code> directories whenever system reboot is done for Linux environment.
2612301	Upgrading kernel on encapsulated boot disk does not work on Red Hat Enterprise Linux (RHEL) 5, 6, and SUSE Linux Enterprise Server (SLES) 10.
2607706	Encapsulation of a multi-pathed root disk fails if the <code>dmpnode</code> name and any of its path names are not the same.
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> .
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.
2486301	"VXFS" RPM installation failed.
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 <code>rlink</code> gets detached and does not connect back when overflowed in a multiple-secondaries environment.
1675482	The <code>vxdbg list dgname</code> command gives error 'state=new failed'.
1533134	DMP: deprecated SCSI <code>ioctl</code> use <code>sg_io</code> type of error.
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>vxvtune</code> .

**Table 1-11** Veritas Volume Manager fixed issues (*continued*)

Incident	Description
2682491	The vxvmconvert command displays an error message while converting an LVM volume.

## Storage Foundation for Databases (SFDB) tools fixed issues

This section describes Storage Foundation for Databases (SFDB) tools fixed issues in 6.0.4, 6.0.3 and 6.0.1.

### Storage Foundation for Databases (SFDB) tools: issues fixed in 6.0.4

[Table 1-12](#) describes the incidents that are fixed in SFDB tools in 6.0.4.

**Table 1-12** Storage Foundation for Databases (SFDB) tools 6.0.4 fixed issues

Incident	Description
3211391 (3211388)	During a Veritas Database Edition (DBED) instant checkpoint cloning, if you enable the Block Change Tracking feature, it results in an <code>ORA-00600</code> error.
3277940 (3290416)	Some DBED operations may fail with the following error message: <code>ORA-01406: fetched column value was truncated</code>
2937529	Support for the newer DB2 10.1 version of the database.

### Storage Foundation for Databases (SFDB) tools: issues fixed in 6.0.3

[Table 1-13](#) describes the incidents that are fixed in Storage Foundation for Databases (SFDB) tools in 6.0.3.

**Table 1-13** Storage Foundation for Databases (SFDB) tools 6.0.3 fixed issues

Incident	Description
3030663	<code>dbed_vmclonedb</code> does not read pfile supplied by <code>-p 'pfile_modification_file'</code> option.

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

Table 1-14 describes the Veritas Storage Foundation for Databases (SFDB) tools issues fixed in this release.

**Table 1-14** 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 (253442)	<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>
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 and upgrade known issues

This section describes the known issues during installation and upgrade in this release.

### Error messages in syslog (1630188)

If you install or uninstall a product on a node, you may see the following warnings in syslog: `/var/log/message`. These warnings are harmless and can be ignored.

```
Jul  6 10:58:50 swlx62 setroubleshoot: SELinux is preventing the
semanage from using potentially mislabeled files
(/var/tmp/installer-200907061052eVe/install1.swlx62.VRTSvxvm). For
complete SELinux messages. run sealert -l ed8978d1-0b1b-4c5b-a086-
67da2a651fb3
```

```
Jul  6 10:58:54 swlx62 setroubleshoot: SELinux is preventing the
semanage from using potentially mislabeled files
(/var/tmp/installer-200907061052eVe/install1.swlx62.VRTSvxvm). For
complete SELinux messages. run sealert -l ed8978d1-0b1b-4c5b-a086-
67da2a651fb3
```

```
Jul  6 10:58:59 swlx62 setroubleshoot: SELinux is preventing the
restorecon from using potentially mislabeled files
```

### 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.

### 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.

## The uninstaller does not remove all scripts (2696033)

After removing SF, some of the RC scripts remain in the `/etc/rc*.d/` folder. This is due to an issue with the `chkconfig` rpm in RHEL6 and updates. You can manually remove the scripts from the `/etc/rc*.d/` folder after removing the VxVM packages.

Workaround:

Install the `chkconfig-1.3.49.3-1` `chkconfig` rpm from the RedHat portal. Refer to the following links:

<http://grokbase.com/t/centos/centos/117pfhe4zz/centos-6-0-chkconfig-strange-behavior>

<http://rhn.redhat.com/errata/RHBA-2012-0415.html>

## Installing DMP with a keyless license or DMP-only license does not enable DMP native support for LVM root volumes (2874810)

When you install DMP with a keyless license or DMP-only license, the tunable parameter `dmp_native_support` is set to `on`. However, the DMP native support is not enabled for LVM root volumes. The DMP native support is enabled for non-root LVM volumes.

Workaround:

After package installation, use the following command to enable the DMP support for root LVM volumes.

```
# vxddmpadm settune dmp_native_support=on
```

Then reboot the system.

## Ignore certain errors after an operating system upgrade—after a product upgrade with encapsulated boot disks (2030970)

Ignore certain errors after an operating system upgrade after a product upgrade with encapsulated boot disks.

You can ignore the following errors after you upgrade the operating system after a product upgrade that occurred with an encapsulated boot disk. Examples of the errors follow:

```
The partitioning on disk /dev/sda is not readable by  
The partitioning tool parted, which is used to change the  
partition table.
```

```
You can use the partitions on disk /dev/sda as they are.  
You can format them and assign mount points to them, but you  
cannot add, edit, resize, or remove partitions from that  
disk with this tool.
```



Or

```
Root device: /dev/vx/dsk/bootdg/rootvol (mounted on / as reiserfs)
Module list: pilix mptspi qla2xxx silmaged processor thermal fan
reiserfs aedd (xennet xenblk)
```

```
Kernel image: /boot/vmlinuz-2.6.16.60-0.54.5-smp
Initrd image: /boot/initrd-2.6.16.60-0.54.5-smp
```

The operating system upgrade is not failing. The error messages are harmless.

**Workaround:** Remove the `/boot/vmlinuz.b4vxvm` and `/boot/initrd.b4vxvm` files (from an un-encapsulated system) before the operating system upgrade.

## 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 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.

## After finishing a kernel upgrade on a master node the cvm group on a slave node does not come online (2439439)

After successfully finishing a kernel upgrade on one node, the `cvm` group does not come online on the second node.

**Workaround:** Check that your cluster is not in a jeopardy state before you perform a rolling upgrade.

## Stopping the installer during an upgrade and then resuming the upgrade might freeze the service groups [2574731]

The service groups freeze due to upgrading using the product installer if you stopped the installer after the installer already stopped some of the processes and then resumed the upgrade.

### Workaround:

You must unfreeze the service groups manually after the upgrade completes.

#### To unfreeze the service groups manually

- 1 List all the frozen service groups

```
# hagr -list Frozen=1
```

- 2 Unfreeze all the frozen service groups:

```
# haconf -makerw  
# hagr -unfreeze service_group -persistent  
# haconf -dump -makero
```

## After a locale change restart the vxconfig daemon (2417547)

You need to restart the vxconfig daemon you change the locale of nodes that use it. The vxconfig daemon starts at boot. If you have changed locale, you need to restart the daemon.

**Workaround:** See the *Veritas Storage Foundation Cluster File System High Availability Administrator's Guide* for more information on vxconfigd daemon recovery.

## Issue with soft links getting deleted in a manual upgrade

While performing a manual upgrade (from 5.1 to 6.0) of the VRTSvlic RPM, some of the soft links created during your previous installation are deleted. As a result, `vxkeyless` binary is not found in its specified path.

To prevent this, use the `--nopreun` option.

For example: `rpm -Uvh --nopreun VRTSvlic-3.02.61.003-0.x86_64.rpm`

## While upgrading the VCS stack from a version prior to VCS 5.1, reconfiguration of MultiNICA IPv4RouteOptions attribute is required (2003864)

The 5.1SP1 MultiNICA agent now uses `ip` command by default. Due to behavioral differences in `ip` and `ifconfig` commands in regards to route configuration, MultiNICA flushes routes and sets them back for the new active device. If the MultiNICA resource configuration is not intended to make use of `ifconfig` command (see table below), you must configure IPv4RouteOptions attribute in MultiNICA resource definition.

---

**Note:** RouteOptions values are used by the `route` command where as the IPv4RouteOptions value is used by the `ip route` command. The values to be configured for these two attribute are very specific to their respective commands.

---

**Table 1-15** Whether attributes are configured and required actions that you need to perform during upgrade

Options	RouteOptions and/or IPv4AddrOptions	IPv4RouteOptions	Comment	Actions that you need to perform during upgrade
Configured	May or may not be configured	May or may not be configured	In this case the <code>ifconfig</code> command is used. If RouteOptions is set, attribute value is used to add/delete routes using command <code>route</code> .  As the Options attribute is configured, IPv4RouteOptions values are ignored.	No need to configure IPv4RouteOptions.

**Table 1-15** Whether attributes are configured and required actions that you need to perform during upgrade (*continued*)

Options	RouteOptions and/or IPv4AddrOptions	IPv4RouteOptions	Comment	Actions that you need to perform during upgrade
Not configured	May or may not be configured	Must be configured	In this case the <code>ip</code> command is used. IPv4RouteOptions must be configured and are used to add/delete routes using the <code>ip route</code> command. As Options attribute is not configured, RouteOptions value is ignored.	Configure IPv4RouteOptions and set the IP of default gateway. The value of this attribute typically resembles: IPv4RouteOptions = "default via gateway_ip" For example: IPv4RouteOptions = "default via 192.168.1.1"

## Issues with keyless licensing reminders after upgrading VRTSvlic [2141446]

After upgrading from 5.1 to higher versions of VCS, some keyless licenses may be left in the system. As a result, you may see periodic reminders being logged if the VOM server is not configured.

This happens if you are using keyless licenses before upgrading to 5.1SP1 or higher versions of VCS. After the upgrade, you install real keys and run `vxkeyless set NONE`. In this case, the keyless licenses may not be completely removed and you see warning messages being logged after two months (if VOM server is not configured). This does not result in any functionality impact.

To resolve this issue, perform the following steps:

- Note down the list of products configured on the node for keyless licensing. Run `vxkeyless display` to display the list.
- Set the product level to `NONE` with the command:

```
# vxkeyless set NONE
```
- Find and delete the keyless licenses left over in the system. To do this, perform the following steps for every key stored in `/etc/vx/licenses/lic:`

- Verify if the key has `VXKEYLESS` feature Enabled using the following command:  

```
# vxlicrep -k <license_key> | grep VXKEYLESS
```
- Delete the key if and only if `VXKEYLESS` feature is Enabled.

---

**Note:** When performing the search, do not include the `.vxlic` extension as part of the search string.

---

4. Restore the previous list of products with the command:

```
# vxkeyless set product1[|,product]
```

## SELinux error during installation of VRTSvcsag RPM

During the installation of VRTSvcsag RPM on RHEL 5 SELinux enabled machine, you may observe following SELinux error:

```
/usr/sbin/semodule: Failed on /opt/VRTSvcs/bin/selinux/vcsag.pp!
```

This error occurs due to improper installation of the SELinux package. As a result, SELinux commands may not function properly.

Workaround: Reinstall the SELinux package and relabel filesystem by either `init` or `fixfiles` method.

## Web installer has no option to remove node from a cluster

Web Installer does not provide the option to remove node from a cluster.

Workaround: Manually remove nodes from a cluster. There is no option to remove nodes available from Web Installer or CPI.

## CPI installer throws CPI WARNING V-9-40-4493 if enabling DMP root support when upgrading SF to 6.0.4 (3064919)

If you upgrade SF to 6.0.4 with the `dmp_native_support` option enabled, CPI installer may report the following message:

```
CPI WARNING V-9-40-4493 Failed to turn on  
dmp_native_support tunable on <SERVER_NAME>. Refer to  
Dynamic Multi-Pathing Administrator's guide to determine  
the reason for the failure and take corrective action.
```

This message is inappropriate and should not be displayed. It does not affect the upgrading functions.

**Workaround:**

There is no workaround for this issue. You can safely ignore the message.

**SF failed to upgrade when Application HA is installed (3088810)**

If you have installed both ApplicationHA 6.0 and SF 6.0.1, the installer can't upgrade SF 6.0.1 to 6.0.4. The following error message is displayed:

```
CPI ERROR V-9-30-1303 SFHA 6.0.100 does not appear to be installed
on <your system>
```

**Workaround:**

Use the following command to specify the exact product for the upgrade:

```
# ./installmr -prod SF60
```

Ignore the warning message that SFHA is already installed after the pre-check and continue the upgrade.

**Enabling or installing DMP for native support might not migrate LVM volumes to DMP (2737452)**

The `lvm.conf` file has the `obtain_device_list_from_udev` variable. If `obtain_device_list_from_udev` is set to 1, then LVM uses devices and symlinks specified by udev database, only.

**Workaround:**

In the `lvm.conf` file, set the `obtain_device_list_from_udev` variable to 0. This enables LVM to recognize `/dev/vx/dmp/` devices when performing a `vgscan`, which enables volume group migration to succeed.

## Veritas Storage Foundation known issues

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

**Installer exits upgrade to 5.1 RP1 with Rolling Upgrade error message (1951825, 1997914)**

Installer exits upgrade to 5.1 RP1 with Rolling Upgrade error message, if protocol version entries are present in `/etc/gabtab` and `/etc/vxfenmode` files. Installer program may exit with either one of the following error messages during upgrade from 5.1 to 5.1 RP1:

SF51 is installed. Rolling upgrade is only supported from 5.1 to higher version for the products

Or

To do rolling upgrade, VCS must be running on <node>.

**Workaround:** If the protocol version entries are present in `/etc/gabtab` and `/etc/vxfenmode` files, then installer detects it as Rolling Upgrade (RU). If you are not attempting RU, and doing full upgrade to 5.1 RP1, remove the protocol version entries from these two files for installer to proceed with regular upgrade.

### **In an IPv6 environment, db2icrt and db2idrop commands return a segmentation fault error during instance creation and instance removal (1602444)**

When using IBM DB2 `db2icrt` command to create a DB2 database instance on a pure IPv6 environment, the `db2icrt` command returns segmentation fault error message. For example:

```
$ /opt/ibm/db2/V9.5/instance/db2icrt -a server -u db2fen1 db2inst1
/opt/ibm/db2/V9.5/instance/db2iutil: line 4700: 26182 Segmentation fault
$ {DB2DIR?}/instance/db2isrv -addfcm -i ${INSTNAME?}
```

The `db2idrop` command also returns segmentation fault, but the instance is removed successfully after the `db2idrop` command is issued. For example:

```
$ /opt/ibm/db2/V9.5/instance/db2idrop db2inst1
/opt/ibm/db2/V9.5/instance/db2iutil: line 3599: 7350 Segmentation fault
$ {DB2DIR?}/instance/db2isrv -remove -s DB2_${INSTNAME?} 2> /dev/null
```

```
DBI1070I Program db2idrop completed successfully.
```

This happens on DB2 9.1, 9.5, and 9.7.

This issue has been identified as an IBM issue. Once IBM has fixed this issue, then IBM will provide a hotfix for this segmentation problem.

At this time, you can communicate in a dual-stack to avoid the segmentation fault error message until IBM provides a hotfix.

**To communicate in a dual-stack environment**

- ◆ Add an IPv6 hostname as an IPv4 loopback address to the `/etc/hosts` file. For example:

```
127.0.0.1 swlx20-v6
```

Or

```
127.0.0.1 swlx20-v6.punipv6.com
```

127.0.0.1 is the IPv4 loopback address.

`swlx20-v6` and `swlx20-v6.punipv6.com` are the IPv6 hostnames.

**Process start-up may hang during configuration using the installer (1678116)**

After you have installed a Storage Foundation product, some Veritas Volume Manager processes may hang during the configuration phase.

**Workaround:** Kill the installation program, and rerun the configuration.

**Oracle 11gR1 may not work on pure IPv6 environment [1819585]**

There is problem running Oracle 11gR1 on a pure IPv6 environment.

Tools like `dbca` may hang during database creation.

**Workaround:** There is no workaround for this, as Oracle 11gR1 does not fully support pure IPv6 environment.

**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 Departed 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
```



## An error message is received when you perform off-host clone for RAC and the off-host node is not part of the CVM cluster (1834860)

There is a known issue when you try to perform an off-host clone for RAC and the off-host node is not part of the CVM cluster. You may receive a similar error message:

```
Cannot open file /etc/vx/vxdba/racl1g1/.DB_NAME
(No such file or directory).
SFORA vxreptadm ERROR V-81-8847 Cannot get filename from sid
for 'racl1g1', rc=-1.
SFORA vxreptadm ERROR V-81-6550 Could not connect to repository
database.
VxVM vxdg ERROR V-5-1-582 Disk group SNAP_racl1dgl: No such disk
group SFORA
vxsnapadm ERROR V-81-5623 Could not get CVM information for
SNAP_racl1dgl.
SFORA dbed_vmclonedb ERROR V-81-5578 Import SNAP_racl1dgl failed.
```

### Workaround:

Currently there is no workaound for this known issue. However, if the off-host node is part of the CVM cluster, then off-host clone for RAC works fine.

Also the `dbed_vmclonedb` command does not support `LOCAL_LISTENER` and `REMOTE_LISTENER` in the `init.ora` parameter file of the primary database.

## DB2 databases are not visible from the VOM Web console (1850100)

If you upgraded to SF 5.1, DB2 databases will be not visible from the VOM web console.

This will be fixed in the SF 5.1 Patch 1 release.

**Workaround:** Reinstall is required for VOM DB2-Hotfix (`HF020008500-06.sfa`), if the host is upgraded to SF 5.1. Use the deployment framework and reinstall the hotfix for DB2 (`HF020008500-06.sfa`) on the managed host.

### To resolve this issue

- 1 In the Web GUI, go to **Settings > Deployment**.
- 2 Select **HF020008500-06 hotfix**.
- 3 Click **Install**.
- 4 Check the **force** option while reinstalling the hotfix.

## 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.

## Veritas Volume Manager known issues

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

### 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. The recommended format is the Cross-platform Data Sharing (CDS) disk format.

### Workaround:

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

### 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
```

## The vxcdsconvert utility is supported only on the master node (2616422)

The `vxcdsconvert` utility should be run only from the master node, not from the slave nodes of the cluster.

## device.map must be up to date before doing root disk encapsulation (2202047)

If you perform root disk encapsulation while the `device.map` file is not up to date, the `vxdiskadm` command displays the following error:

```
VxVM vxencap INFO V-5-2-6098 Missing entry for root disk <rootdisk name>
in /boot/grub/device.map
```

### Workaround:

Before you perform root disk encapsulation, run the the following command to regenerate the `device.map` file:

```
grub-install --recheck /dev/sdb
```

## Required attributes for Veritas Volume Manager (VxVM) devices to avoid boot failures (1411526)

To support iSCSI devices, Veritas Volume Manager (VxVM) does not start non-root devices until `runlevel2`. The boot process expects all local (non-NFS) mount points in the `/etc/fstab` file to be present at boot time. To avoid boot failures, all VxVM entries in the `/etc/fstab` file must have the `_netdev` attribute, and must not have the `fsck` required flag set. These attributes enable VxVM to defer mounting of VxVM devices until after VxVM has started.

## vxrestored daemon fails to restore disabled paths (1663167)

The `vxrestored` daemon fails to restore disabled paths on RHEL 5 with direct attached disks.

### Workaround:

Enable the `mpt_disable_hotplug_remove` tunable so that path level failover and failback function properly on RHEL 5 machines with direct attached disks.

**To enable the `mpt_disable_hotplug_remove` tunable**

- 1 Edit the `/etc/modprobe.conf` file and add the following line to the end of the file:

```
options mptsas mpt_disable_hotplug_remove=0
```

- 2 Rebuild the `initrd` image:

```
# mkinitrd -f /boot/initrd-`uname -r`.img `uname -r`
```

- 3 Reboot the system.

**System hangs or panics after disabling 3 of 4 arrayside ports (1724260)**

The system hangs or panics after you disable 3 of 4 arrayside ports.

**Workaround:**

This issue is fixed with a Novell patch for SLES 11 as indicated in Bugzilla ID 524347:

[https://bugzilla.novell.com/show\\_bug.cgi?id=524347](https://bugzilla.novell.com/show_bug.cgi?id=524347)

**Machine fails to boot after root disk encapsulation on servers with UEFI firmware (1842096)**

Certain new servers in the market such as IBM x3650 M2, Dell PowerEdge T610, come with support for the UEFI firmware. UEFI supports booting from legacy MBR type disks with certain restrictions on the disk partitions. One of the restrictions is that each partition must not overlap with other partitions. During root disk encapsulation, it creates an overlapping partition that spans the public region of the root disk. If the check for overlapping partitions is not disabled from the UEFI firmware, then the machine fails to come up following the reboot initiated after running the commands to encapsulate the root disk.

**Workaround:**

The following workarounds have been tested and are recommended in a single-node environment.

For the IBM x3650 series servers, the UEFI firmware settings should be set to boot with the "Legacy Only" option.

For the Dell PowerEdge T610 system, set "Boot Mode" to "BIOS" from the "Boot Settings" menu.

## 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
```

## Root disk encapsulation is not supported if the root disk (DMP node) has customized name or user-defined name (1603309)

Encapsulation of the root disk fails if it has been assigned a customized name with vxdkmpadm(1M) command. If you want to encapsulate the root disk, make sure that you have not assigned a customized name to its corresponding DMP node.

See the vxdkmpadm(1M) manual page.

See the "Setting customized names for DMP nodes" section of the *Veritas Storage Foundation Administrator's Guide*.

## VxVM starts before OS device scan is done (1635274)

While working with some arrays, VxVM may start before all devices are scanned by the OS. This slow OS device discovery may result in malfunctioning of VM, fencing and VCS due to partial disks seen by VxVM.

### Workaround:

After the fabric discovery is finished, issue the `vxdisk scandisks` command to bring newly discovered devices into the VxVM configuration.

## Converting LVM volumes to VxVM volumes fails when multipathed storage devices are present (1471781, 1931727)

The `vxvmconvert` utility cannot convert LVM volumes to VxVM volumes when multipathed storage devices are present. This issue occurs with SLES 11 and RHEL5, due to changes in the LVM utilities. If multipathed devices are detected, the `vxvmconvert` utility exits with the following error:

```
vxvmconvert cannot convert multipathed devices on SLES11 systems.  
... Exiting.
```

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

## The "vxdg listclone" command output may not list all the disks with "clone\_disk" or "udid\_mismatch" flag set (2354560)

In Cluster Volume Manager environment, "vxdg listclone" command output may not list all the disks with "clone\_disk" or "udid\_mismatch" flag set. This can happen on master/slave nodes.

**Workaround:**

Administrator has to run "vxdisk scandisks" or "vxdisk -o all dgs list" followed by "vxdg listclone" to get all the disks containing "clone\_disk" or "udid\_mismatch" flag on respective host.

## 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.

## Issues with the disk state on the CVM slave node when vxconfigd is restarted on all nodes (2615680)

When a CVM master node and a slave node have lost storage access, and `vxconfigd` is restarted on all nodes, the disk state on the CVM slave node shows as invalid.

**Workaround:**

**To work around this issue**

- 1 Restore storage connectivity.
- 2 Deport the disk group.
- 3 Import the disk group.

**During system boot, some VxVM volumes fail to mount (2622979)**

During system boot, some VxVM volumes that exist in the `/etc/fstab` file fail to mount with the following error messages:

```
# fsck
Checking all file systems.
  error on stat() /dev/vx/dsk//volume: No such
file or directory
```

The load order of kernel modules in Linux results in the VxFS file system driver loading late in the boot process. Since the driver is not loaded when the `/etc/fstab` file is read by the operating system, file systems of the type `vxfs` will not mount.

**Workaround:**

To resolve the failure to mount VxFS file systems at boot, specify additional options in the `/etc/fstab` file. These options allow the filesystems to mount later in the boot process. An example of an entry for a VxFS file system:

```
/dev/vx/dsk/testdg/testvolume /mountpoint vxfs _netdev,hotplug 1 1
```

To resolve the issue, the `fstab` entry for VxVM data volumes should be as per following template:

```
/dev/vx/dsk/testdg/testvol /testmnt vxfs _netdev 0 0
```

**Removing an array node from an IBM Storwize V7000 storage system also removes the controller (2816589)**

When using an IBM Storwize V7000 storage system, after removing one array node, the corresponding controller is also removed.

**Workaround:** The following procedure resolves this issue.

**To resolve this issue**

- 1 Set the `iotimeout` tunable to 600:

```
# vxddm padm setattr enclosure enc11 recoveryoption=throttle \  
iotimeout=600
```

- 2 After you re-add the SAN VC node, run the `vxddctl enable` command for Dynamic Multi-Pathing (DMP) to detect the added paths:

```
# vxddctl enable
```

**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.

**Hardware paths for operating system paths have changed in DMP 6.0 (2410716)**

In DMP 6.0, the hardware paths for operating system paths have changed. After upgrading to DMP 6.0, path attributes are reset to the default values. You must reconfigure any path-level attributes that were defined in the `/etc/vx/dmppolicy.info` file.

**Workaround:****To configure path-level attributes**

- 1 Remove the path entries from the `/etc/vx/dmppolicy.info` file.
- 2 Reset the path attributes.



## 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.

### **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.

### **Complete site is detached, if plex detach operation is performed even after site consistency off (2845383)**

By design, you cannot detach the last plex of a site on a site consistent volume without detaching the complete site. By default, attempting to detach the last plex causes an error. If you use the force detach option, then the complete site is detached to ensure site consistency. This behavior is seen even if you turn off the site consistent flag if the `allsites` flag is on.

### **Performance impact when a large number of disks are reconnected (2802698)**

If the storage connectivity is lost to part of the storage, the disk group configuration copy is rebalanced to the disks that have connectivity. For example, if the storage for an entire enclosure is removed from a disk group with multiple enclosures. The rebalancing process takes time, during which time the `vxconfigd` daemon is busy and does not respond to commands.

### **Plex synchronization is not completed after resuming synchronization on a new master when the original master lost connectivity (2788077)**

When you run `vxrecover -o force`, it recovers only one subvolume and it cannot detect that the rest of the volume needs recovery.

When you run the `vxassist mirror` command, you run the `vxplex att` command serially on each subvolume. If the failure happens before you start the `attach` operation (need to mark the concerned plex as the attach operation is in progress), `vxrecover` will not redo the attach operation because it cannot find any record of the attach operation in progress.

**Workaround:**

Run the following command on each subvolume to manually recover the complete volume:

```
# /usr/lib/vxvm/type/fsgen/vxplex -U fsgen -g diskgroup \  
-o force useopt att volume plex
```

### **cvm\_clus resource goes into faulted state after the resource is manually panicked and rebooted in a 32 node cluster (2278894)**

The `cvm_clus` resource goes into faulted state after the resource is manually panicked and rebooted in a 32 node cluster.

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

### **DMP disables subpaths and initiates failover when an iSCSI link is failed and recovered within 5 seconds. (2100039)**

When using iSCSI S/W initiator with an EMC CLARiiON array, iSCSI connection errors may cause DMP to disable subpaths and initiate failover. This situation occurs when an iSCSI link is failed and recovered within 5 seconds.

**Workaround:**

When using iSCSI S/W initiator with an EMC CLARiiON array, set the `node.session.timeo.replacement_timeout` iSCSI tunable value to 40 secs or higher.

### **CVMVoIDg agent may fail to deport CVM disk group**

The CVM disk group is deported based on the order in which the CVMVoIDg resources are taken offline. If the CVMVoIDg resources in the disk group contain a mixed setting of 1 and 0 for the `CVMDeportOnOffline` attribute, the disk group is deported only if the attribute value is 1 for the last CVMVoIDg resource taken offline. If the attribute value is 0 for the last CVMVoIDg resource taken offline, the disk group is not deported.

**Workaround:** If multiple CVMVoIDg resources are configured for a shared disk group, set the value of the `CVMDeportOnOffline` attribute to 1 for all of the resources.

### **The SCSI registration keys are not removed even if you stop VCS engine for the second time (3037620)**

If you stop VCS engine for the first time, the SCSI registration keys can be removed. But if you stop VCS engine for the second time, the keys are not removed.

**Workaround:**

There is no workaround for this issue.

### **Using `vxsnap` to addmir for a volume is very slow and the plex is detached after the operation (3037712)**

If you use `vxsnap` to addmir for a volume on RHEL6.3, the process is very slow and the plex becomes detached after the operation.

#### **Workaround:**

There is no workaround for this issue.

### **Upgrading VxVM package (in-place upgrade) on an encapsulated boot disk does not work on SLES11 (3061521)**

On SLES11, after the in-place upgrade on root encapsulated system, the following message is displayed on reboot:

```
Waiting for device /dev/vx/dsk/bootdg/rootvol to appear:
.....could not find /dev/vx/dsk/bootdg/rootvol.
Want me to fall back to <resume device>?(Y/n)
```

#### **Workaround:**

For an SLES11 machine with encapsulated root disk, perform the following steps to upgrade VxVM.

#### **To upgrade VxVM:**

- 1 Unroot the encapsulated root disk:

```
# /etc/vx/bin/vxunroot
```

- 2 Upgrade the VxVM.

You can perform this using the CPI installer or using the `rpm` command.

```
# rpm -Uvh VRTSvxvm-version.rpm
```

- 3 Reboot the system.

- 4 Re-encapsulate the root disk:

```
# /etc/vx/bin/vxencap -c -g root_diskgroup rootdisk=root_disk
```

## Nodes with encapsulated root disks fail to restart after you perform an operating system upgrade for SLES11SPx on 6.0.1 systems. (2612301)

Upgrading the kernel or operating system on an encapsulated boot disk does not work on SUSE Linux Enterprise Server (SLES) 11.

---

**Note:** This issue though fixed in release 6.0.1 on Red Hat Enterprise Linux (RHEL) 5, 6 and SLES 10. It occurs on SLES 11 because of a program issue.

---

### Workaround:

Perform the following procedure on the system with the encapsulated root disk to upgrade the kernel or operating system.

#### To upgrade the kernel or operating system on a system with an encapsulated root disk

- 1 Unroot the encapsulated root disk:

```
# /etc/vx/bin/vxunroot
```

- 2 Upgrade the kernel or the operating system.

You may upgrade the kernel using the following rpm command:

```
# rpm -Uvh Kernel-upgrade_version
```

OR

You may upgrade the operating system using tools like YaST or Zypper.

- 3 Reboot the system.
- 4 Re-encapsulate the root disk:

```
# /etc/vx/bin/vxencap -c -g root_diskgroup rootdisk=root_disk
```

## Nodes with encapsulated root disks fail to reboot after you upgrade VxVM from version 6.0.3 to 6.0.4. (3300580)

On an SUSE Linux Enterprise Server (SLES) 11 system with encapsulated root disks, a reboot after upgrading Veritas Volume Manager (VxVM) from 6.0.3 to 6.0.4 prompts you to fall back to the resume device. The prompt message is similar to following:

```
could not find /dev/vx/dsk/bootdg/rootvol, want me to fall back to  
/dev/sda2? (Y/N)
```

**Workaround:**

To resolve this issue

- 1 Select **Y** on the prompt to continue booting up.
- 2 Backup the existing `/boot/VxVM_initrd.img` file.
- 3 Regenerate the `VxVM_initrd.img` file using the following command:

```
# /etc/vx/bin/vxinitrd /boot/VxVM_initrd.img `uname -r`
```

**After encapsulation of the root disk, the system may fail to boot up with the "Unrecognized device string" error. (3326269)**

If the `/boot/device.map` file contains multiple `hd` number entries pointing to the root disk, it causes the `vxencap` script to add incorrect `hd` number expressions in the `vxvm_root` entry and therefore, the GRUB (Grand Unified Bootloader) fails to identify the root device.

**Workaround:**

Remove duplicate entries pointing to the root disk from the `/boot/device.map` file before encapsulation, and make sure the correct entry is pointing to the root disk.

OR

Manually correct the `root(hdx,y)` in the `vxvm_root` entry in the `menu.lst` file immediately after the encapsulation and before a reboot.

## 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.

## Task blocked messages display in the console for RHEL6 (2560357)

On RHEL6, the kernel occasionally displays messages in the console similar to the following example:

```
INFO: task seq:16957 blocked for more than 120 seconds.
```

These messages display because the task is blocked for a long time on sleep locks. However, the task is not hung and the messages can be safely ignored.

**Workaround:** You can disable these messages by using the following command:

```
# echo 0 > /proc/sys/kernel/hung_task_timeout_secs
```

## Rolling upgrade from version 6.0.3 may cause corruption in the Veritas File System external quota file (2933571)

The 6.0.3 release supported 64-bit quota, which allowed quota limits higher than 1 terabyte. However, there is a possibility of corruption during rolling upgrade when

two nodes may be on different patch levels—one node using 64-bit quota limit and the other node using 32-bit quota limit.

**Workaround:** Disable quotas before you start rolling upgrade. Back up the external quota file. This will help to restore the original file in the event that the quota file becomes corrupted during the upgrade.

For more information, see the technote:

<http://www.symantec.com/docs/TECH211178>

## 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.



## 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.

## Severe impact in read performance (sequential and random) on compressed files compared to uncompressed files (2609152)

The read throughput is highly degraded for compressed files. The difference is seen for sequential I/O and random I/O. For sequential reads, the degradation is visible even when the amount of data read compressed files is one-third of the uncompressed files (compression ratio).

### 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.

## System unable to select ext4 from the file system (2691654)

The system is unable to select ext4 from the file system.

**Workaround:** There is no workaround.

## A low memory machine with RHEL 6.2 or higher may panic with General Protection Fault (3046544)

If a machine with low memory (less than 3GB) is installed with RHEL 6.2 or higher system, it may hit the General Protection Fault assert with the following stack trace:

```
machine_kexec at ffffffff8103284b
crash_kexec at ffffffff810ba972
oops_end at ffffffff81501860
die at ffffffff8100f26b
do_general_protection at ffffffff815013f2
general_protection at ffffffff81500bc5
shrink_page_list.clone.0 at ffffffff8112db97
shrink_inactive_list at ffffffff8112e10c
shrink_zone at ffffffff8112ee8f
balance_pgdat at ffffffff811303d9
kswapd at ffffffff81130606
kthread at ffffffff81091df6
kernel_thread at ffffffff8100c14a
```

### Workaround:

There is no workaround for this issue.

## The replication operation fails (3010202)

On SLES 10 SP3 or SLES 11 SP2, the replication operation fails with the following message:

```
btree.c      1827:      ASSERT(0) failed
```

This issue occurs if you use the `bcopy` function because it is deprecated in these releases.

### Workaround:

You can turn off the shared extent optimization on these machines. Contact Symantec support to get the exact commands.

## The de-duplication operation may seem to be hung (2753687)

After the de-duplication operation completes, some of the temporary files are not cleaned. Hence the shutdown script fails to kill all the processes and the de-duplication operation may hang.

### Workaround:

Use the `kill` command to manually kill the de-duplication operation.

## The `fsdedupadm` command does not show the full name of the machine (3015478)

The length of the name for a node is limited to 15 characters. So whenever the name of a machine exceeds this length, it shows only the first 15 characters of name.

### Workaround:

There is no workaround for this issue.

## Incorrect option for VxFS file system in `/etc/fstab` (3059189)

When you create a VxFS file system, VOM sets incorrect option 'suid' for it in the `/etc/fstab` file. This would make the operating system unable to startup normally after reboot:

```
# NOTE: When adding or modifying VxFS or VxVM entries, add '_netdev'  
# to the mount options to ensure the filesystems are mounted after  
# VxVM and VxFS have started.  
/dev/vx/dsk/dg3/dg3vol12 /dg3vol12 vxfs suid 0 2
```

### Workaround:

Before reboot, manually edit the `/etc/fstab` file and change 'suid' to '\_netdev'.

## Replication known issues

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

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

The `vradmin 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 `vradmin 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.

## RVG monitor script may display command not found messages (1709034)

On VCS hosts with VVR resources configured, the following error message displayed in engine\_A.log indicates a script error:

```
/opt/VRTSvcs/bin/RVG/monitor: line 124: {print $6}: command not found
/opt/VRTSvcs/bin/RVG/monitor: line 124: {print $6}: command not found
/opt/VRTSvcs/bin/RVG/monitor: line 124: {print $6}: command not found
```

This may fail online/monitor the bunker RVG resources, when they are configured.

### Workaround:

Manually edit the following files to update the script:

```
/opt/VRTSvcs/bin/RVG/monitor
/opt/VRTSvcs/bin/RVG/online
/opt/VRTSvcs/bin/RVG/offline
```

In each file, modify the following line:

```
sys=`LC_ALL=C; export LC_ALL; $hasys -nodeid | $awk '{print $6}'`
```

to

```
sys=`LC_ALL=C; export LC_ALL; $hasys -nodeid | awk '{print $6}'`
```

## 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 replication 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 vradmIn 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 `vxxrvg -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 -t 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 -t vxfs /dev/vx/dsk/dg/data_volume
```

## Running SUSE Linux and using Novell's YaST tool to configure an IPv6 address may result in an error (1679261)

When Novell's YaST tool is invoked to configure an IPv6 address on a different network interface and if:

- the host name, the DNS server name and domain name are specified to the YaST tool.
- IPv6 address is assigned by the Dynamic Host Configuration Protocol (DHCP).
- the "Write Hostname to /etc/hosts" option is selected (this is selected by default).

This results in the `vradmin` command returning the following error:

```
VxVM VVR vradmin ERROR V-5-52-488 RDS has configuration error related to the master and logowner.
```

This happens because the YaST tool can replace the `/etc/hosts` entry containing `127.0.0.2` from the IPv4 host name to the specified new IPv6 host name. For example:

```
127.0.0.2 v6hostname.space.ipv6.com v6hostname
```

### Workaround:

The following procedure resolves this issue.

#### To resolve this issue

- 1 Edit the `/etc/hosts` file to specify the correct IPv6 address.
- 2 Restart the `vradmind` daemon on all VVR hosts:

```
# /etc/init.d/vras-vradmind.sh restart
```

## 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

**vradmin commands might fail on non-logowner node after logowner change (1810827)**

When VVR is used for replicating shared disk groups in a Veritas Storage Foundation Cluster File System High Availability (SFCFSHA) or Veritas Storage Foundation for Oracle RAC (SFRAC) environment consisting of three or more nodes, a logowner change event might, in rare instances, render `vradmin` commands unusable on some or all of the cluster nodes. In such instances, the following message appears in the "Config Errors:" section of the output of the `vradmin repstatus` and `vradmin printrvg` commands:

```
vradmind not reachable on cluster peer
```

In addition, all other `vradmin` commands (except `vradmin printvol`) fail with the error:

```
"VxVM VVR vradmin ERROR V-5-52-488 RDS has configuration error related to the master and logowner."
```

This is due to a defect in the internal communication sub-system, which will be resolved in a later release.

**Workaround:**

Restart `vradmind` on all the cluster nodes using the following commands:

```
# /etc/init.d/vras-vradmind.sh restart
```

**While vradmin commands are running, vradmind 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, `vradmind` 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 restart
```

**vxassist relayout removes the DCM (145413)**

If you perform a relayout 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
```

**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 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.

## **Replication hang when VVR logowner is on CVM slave node (2405943)**

When VVR is used for asynchronous replication in shared disk group environment, one of the nodes of the cluster at the primary site is chosen as the logowner. When the logowner node is on a node which is a slave node for the underlying CVM

cluster, in the presence of heavy I/O from a node that is not the logowner, it is possible to get into a replication hang. This is due to an internal defect which will be fixed in later releases.

**Workaround:**

Enable the PreOnline trigger of the RVGLogOwner agent so that the VVR logowner will always reside on the CVM master node. For the detailed procedure, refer to the RVGLogowner agent notes section in the *Veritas Cluster Server Bundled Agents Reference Guide*.

**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.

**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:

```
# vxrvg -g diskgroup start rvg
```

8 Resume or start the applications.

## 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 6.0.4 (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 6.0.4.

When upgrading from SF version 5.0 to SF 6.0.4 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.

## Clone fails with error "ORA-01513: invalid current time returned by operating system" with Oracle 11.2.0.3 (2804452)

While creating a clone database using any of the point-in-time copy services such as Flashsnap, SOS, Storage Checkpoint, or Filesnap, the clone fails. This problem appears to affect Oracle versions 11.2.0.2 as well as 11.2.0.3.

You might encounter an Oracle error such as the following:

```
/opt/VRTSdbed/bin/vxsfadm -s flashsnap -o clone
-a oracle -r dblxx64-16-v1 --flashsnap_name TEST11 --clone_path
/tmp/testRecoverdb --clone_name clone1
USERNAME: oragrid
STDOUT:
Retrieving snapshot information ... Done
Importing snapshot diskgroups ... Done
Mounting snapshot volumes ... Done

ORA-01513: invalid current time returned by operating system
```

This is a known Oracle bug documented in the following Oracle bug IDs:

- Bug 14102418: DATABASE DOESNT START DUE TO ORA-1513
- Bug 14036835: SEEING ORA-01513 INTERMITTENTLY

### Workaround:

Retry the cloning operation until it succeeds.

## 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 6.0.4 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.

## 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](#).

**vxdbd fails to start after upgrade from 6.0.1 to 6.0.4 MR on linux (2969173)**

The `vxdbd` daemon fails to start after manual upgrade from 6.0.1 to 6.0.4 Maintenance Release (MR) on Linux platform

**Workaround:**

Use the `--nopreun` option for the `rpm` upgrade command to start up `vxdbd` properly after manual upgrade.

For example:

```
$rpm -Uvh --nopreun VRTSdbed
```

**The `dbdst_show_fs(1M)` command may fail with a Perl warning message (3263177)**

The `dbdst_show_fs(1M)` command may fail with the following Perl warning message:

```
oracle@testbox:~> dbdst_show_fs -S $ORACLE_SID -m /snap_data11r2 -o volume  
perl: warning: Setting locale failed.  
perl: warning: Please check that your locale settings:  
    LANGUAGE = (unset),  
    LC_ALL = "",  
    LANG = "en_US.UTF-8"  
    are supported and installed on your system.  
perl: warning: Falling back to the standard locale ("C").  
SFORA dbdst_show_fs ERROR V-81-6209 Repository Empty.
```

---

**Note:** This issue is observed only in Linux SLES 10.

---

**Workaround:** Use the following command for the default locale settings and retry:

```
oracle@testbox:~> export LC_ALL=C
```

## 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 80.

## Veritas Volume Manager software limitations

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

### DMP settings for NetApp storage attached environment

To minimize the path restoration window and maximize high availability in the NetApp storage attached environment, change the default values for the DMP tunable parameters.

[Table 1-16](#) describes the DMP tunable parameters and the new values.

**Table 1-16** DMP settings for NetApp storage attached environment

Parameter name	Definition	New value	Default value
dmp_restore_interval	DMP restore daemon cycle	60 seconds.	300 seconds.
dmp_path_age	DMP path aging tunable	120 seconds.	300 seconds.

The change is persistent across reboots.

#### To change the tunable parameters

1 Issue the following commands:

```
# vxddmpadm settune dmp_restore_interval=60
# vxddmpadm settune dmp_path_age=120
```

2 To verify the new settings, use the following commands:

```
# vxddmpadm gettune dmp_restore_interval
# vxddmpadm gettune dmp_path_age
```

## **DMP behavior on Linux SLES11 when connectivity to a path is lost (2049371)**

On SLES 11, when the connectivity to a path is lost, the SLES 11 kernel removes the device path from its database. DMP reacts to the UDEV event that is raised in this process, and marks the device path as DISABLED[M]. DMP will not use the path for further I/Os. Unlike on other flavours of Linux, the path state is DISABLED[M] instead of DISABLED. Subsequently, if the path comes back online, DMP responds to the UDEV event to signal the addition of device path into SLES 11 kernel. DMP enables the path and changes its state to ENABLED.

## **LVM volume group in unusable state if last path is excluded from DMP (1976620)**

When a DMP device is used by a native LVM volume group, do not exclude the last path to the device. This can put the LVM volume group in an unusable state.

## **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.

## **You are unable to specify units in the tunables file**

The CPI displays an error when you set the unit type, such as MB or GB, for tunable parameters in the tunables file that you specify with the `-tunablesfile file` option. To avoid the error, you must set the unit type manually.

## **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 6.0.4 release of Veritas Storage Foundation.

### Linux I/O Scheduler for Database Workloads

Symantec recommends using the Linux deadline I/O scheduler for database workloads on SUSE distributions.

To configure a system to use this scheduler, include the `elevator=deadline` parameter in the boot arguments of the GRUB or LILO configuration file.

The location of the appropriate configuration file depends on the system's architecture and Linux distribution:

Configuration File	Architecture and Distribution
<code>/boot/grub/menu.lst</code>	SLES10 x86_64, and SLES11 x86_64

For the GRUB configuration files, add the `elevator=deadline` parameter to the kernel command.

A setting for the `elevator` parameter is always included by SUSE in its LILO and GRUB configuration files. In this case, change the parameter from `elevator=cfg` to `elevator=deadline`.

Reboot the system once the appropriate file has been modified.

See the Linux operating system documentation for more information on I/O schedulers.

### 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.

### 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.

### **Oracle Data Guard in an Oracle RAC environment**

Database snapshots and Database Storage Checkpoints are not supported in a Data Guard with Oracle RAC environment.

### **Upgrading to Oracle 10.2.0.5 is required if using SFDB tools**

If you are running Oracle version 10.2.0.4 and upgrading a Storage Foundation product with SFDB tools to 6.0.4, you must upgrade the Oracle binaries and database to version 10.2.0.5, before upgrading to 6.0.4.

### **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 1-17](#) lists the documentation for Veritas Storage Foundation.

**Table 1-17** Veritas Storage Foundation documentation

Document title	File name
<i>Veritas Storage Foundation Release Notes</i>	sf_notes_604_lin.pdf
<i>Veritas Storage Foundation Installation Guide</i>	sf_install_604_lin.pdf
<i>Veritas Storage Foundation Administrator's Guide</i>	sf_admin_604_lin.pdf
<i>Veritas Storage Foundation: Storage and Availability Management for Oracle Databases</i>	sphas_oracle_admin_604_unix.pdf
<i>Veritas File System Programmer's Reference Guide</i> (This document is available online, only.)	vxfs_ref_604_lin.pdf

[Table 1-18](#) lists the documentation for Veritas Storage Foundation and High Availability Solutions products.



**Table 1-18** Veritas Storage Foundation and High Availability Solutions products documentation

Document title	File name
<i>Veritas Storage Foundation and High Availability Solutions Solutions Guide</i>	sphas_solutions_604_lin.pdf
<i>Veritas Storage Foundation and High Availability Solutions Virtualization Guide</i>	sphas_virtualization_604_lin.pdf
<i>Veritas Storage Foundation and High Availability Solutions Replication Administrator's Guide</i>	sphas_replication_admin_604_lin.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>

## 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.

Manual pages are divided into sections 1, 1M, 3N, 4, and 4M. Edit the `man(1)` configuration file `/etc/man.config` to view these pages.

**To edit the man(1) configuration file**

- 1 If you use the man command to access manual pages, set `LC_ALL` to “C” in your shell to ensure that the pages are displayed correctly.

```
export LC_ALL=C
```

See incident 82099 on the Red Hat Linux support website for more information.

- 2 Add the following line to `/etc/man.config`:

```
MANPATH /opt/VRTS/man
```

where other man paths are specified in the configuration file.

- 3 Add new section numbers. Change the line:

```
MANSECT          1:8:2:3:4:5:6:7:9:tcl:n:l:p:o
```

to

```
MANSECT          1:8:2:3:4:5:6:7:9:tcl:n:l:p:o:3n:1m
```

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

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