

# Veritas Storage Foundation™ Release Notes

Solaris

5.1 Service Pack 1

# Veritas Storage Foundation Release Notes

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- Version and patch level
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- Router, gateway, and IP address information
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North America and Latin America	<a href="mailto:supportsolutions@symantec.com">supportsolutions@symantec.com</a>

## 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 Web site.

<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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## About Symantec Connect

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<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 (Storage Foundation) version for Solaris. Review this entire document before you install Storage Foundation.

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

This is Document version: 5.1SP1.2 of the *Veritas Storage Foundation Release Notes*. Before you start, ensure that you are using the latest version of this guide. The latest product documentation is available on the Symantec Web site at:

<http://www.symantec.com/business/support/overview.jsp?pid=15107>

## 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 in PDF formats:

*/product\_name/docs*

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

This release includes the following component product release notes:

- *Veritas Storage Foundation Cluster File System Release Notes* (5.1 SP1)
- *Veritas Cluster Server Release Notes* (5.1 SP1)

## About Symantec Operations Readiness Tools

Symantec™ Operations Readiness Tools (SORT) is a set of Web-based tools and services that lets you proactively manage your Symantec enterprise products. SORT automates and simplifies administration tasks, so you can manage your data center more efficiently and get the most out of your Symantec products. SORT lets you do the following:

- Collect, analyze, and report on server configurations across UNIX or Windows environments. You can use this data to do the following:
  - Assess whether your systems are ready to install or upgrade Symantec enterprise products
  - Tune environmental parameters so you can increase performance, availability, and use
  - Analyze your current deployment and identify the Symantec products and licenses you are using
- Upload configuration data to the SORT Web site, so you can share information with coworkers, managers, and Symantec Technical Support



- Compare your configurations to one another or to a standard build, so you can determine if a configuration has "drifted"
- Search for and download the latest product patches
- Get notifications about the latest updates for:
  - Patches
  - Hardware compatibility lists (HCLs)
  - Array Support Libraries (ASLs)
  - Array Policy Modules (APMs)
  - High availability agents
- Determine whether your Symantec enterprise product configurations conform to best practices
- Search and browse the latest product documentation
- Look up error code descriptions and solutions

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**Note:** Certain features of SORT are not available for all products.

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To access SORT, go to:

<http://sort.symantec.com>

## Important release information

- The latest product documentation is available on the Symantec Web site at: <http://www.symantec.com/business/support/overview.jsp?pid=15107>
- For important updates regarding this release, review the Late-Breaking News TechNote on the Symantec Technical Support website: <http://entsupport.symantec.com/docs/334829>
- For the latest patches available for this release, go to: <http://sort.symantec.com/>

## Changes in version 5.1 SP1

This section lists the changes for Veritas Storage Foundation.

## Changes related to the installation

The product installer includes the following changes.

### Rolling upgrade support

To reduce downtime, the installer supports rolling upgrades. A rolling upgrade requires little or no downtime. A rolling upgrade has two main phases. In phase 1, the installer upgrades kernel packages on a subcluster. In phase 2, non-kernel packages are upgraded.

All high availability products support a rolling upgrade. You can perform a rolling upgrade from 5.1 or from any RPs to the current release.

You can perform a rolling upgrade using the script-based or Web-based installer.

See the *Veritas Storage Foundation and High Availability Installation Guide*.

### The `installsfha` script and the `uninstallsfha` script are now available

The `installsfha` script and the `uninstallsfha` script scripts are now available in the `storage_foundation_high_availability` directory to install, uninstall, or configure the Storage Foundation and High Availability product.

See the *Veritas Storage Foundation and High Availability Installation Guide*.

### Unencapsulation not required for some upgrade paths

Unencapsulation is no longer required for certain upgrade paths.

See the *Veritas Storage Foundation and High Availability Installation Guide*.

### The new `VRTSamf` package is now included in all high availability products

The new `VRTSamf` package is now included in all high availability products. The asynchronous monitoring framework (AMF) allows the more intelligent monitoring of resources, lower resource consumption, and increased availability across clusters.

See the *Veritas Storage Foundation and High Availability Installation Guide*.

### The `VRTScutil` and `VRTSacclib` packages are no longer in use

For all high availability products, the `VRTScutil` and `VRTSacclib` packages are no longer required.

See the *Veritas Storage Foundation and High Availability Installation Guide*.

## **Installer-related changes to configure LLT private links, detect aggregated links, and configure LLT over UDP**

For all high availability products, the installer provides the following new features in this release to configure LLT private links during the Storage Foundation HA configuration:

- The installer detects and lists the aggregated links that you can choose to configure as private heartbeat links.
- The installer provides an option to detect NICs on each system and network links, and sets link priority to configure LLT over Ethernet.
- The installer provides an option to configure LLT over UDP.
- The installer now supports VCS cluster configuration up to 64 nodes.

See the *Veritas Storage Foundation and High Availability Installation Guide*.

## **Installer supports configuration of non-SCSI3 based fencing**

You can now configure non-SCSI3 based fencing for VCS cluster using the installer.

See the *Veritas Storage Foundation and High Availability Installation Guide*.

## **The installer can copy CPI scripts to any given location using `-copyinstallscripts` option**

The installer can copy CPI scripts to given location using `-copyinstallscripts` option. This option is used when customers install SFHA products manually and require CPI scripts stored on the system to perform product configuration, uninstallation, and licensing tasks without the product media.

See the *Veritas Storage Foundation and High Availability Installation Guide*.

## **Web-based installer supports configuring Storage Foundation HA cluster in secure mode**

You can now configure the Storage Foundation HA cluster in secure mode using the Web-based installer.

See the *Veritas Storage Foundation and High Availability Installation Guide*.

## Web-based installer supports configuring disk-based fencing for Storage Foundation HA

You can now configure disk-based fencing for the Storage Foundation HA cluster using the Web-based installer.

See the *Veritas Storage Foundation and High Availability Installation Guide*.

## The installer provides automated, password-less SSH configuration

When you use the installer, it enables SSH or RSH communication among nodes. It creates SSH keys and adds them to the authorization files. After a successful completion, the installer removes the keys and system names from the appropriate files.

When you use the installer for SSH communications, meet the following prerequisites:

- The SSH (or RSH) daemon must be running for auto-detection.
- You need the superuser passwords for the systems where you plan to install VCS.

## The installer can check product versions

You can use the installer to identify the version (to the MP/RP/SP level depending on the product) on all platforms. Activate the version checker with `./installer -version system_name`.

Depending on the product, the version checker can identify versions from 4.0 onward.

## Changes related to Veritas Storage Foundation

Veritas Storage Foundation includes the following changes:

### Changes to Thin Provisioning and Thin Reclamation features

The following sections describe the changes related to Thin Provisioning and Thin Reclamation features.

#### SmartMove default changed

The default value of the system tunable `usefssmartmove` is now set to `all`. The change results in taking advantage of SmartMove feature during operations involving all types of disks – not just thin disks. It requires SmartMove feature

support from VxFS. If required, you can change the default using the `vxdefault` command.

See the `vxdefault(1m)` manual page.

### New initialization options for the `vxassist grow` command

The `vxassist grow` operation has new options for the initialization type. These changes align the initialization types for `vxassist grow` and `vxassist create` commands.

<code>init=sync</code>	If the volume has multiple plexes, VxVM synchronizes the data between the plexes during initialization.
<code>init=zero</code>	Initializes the volume or grown region, and initializes the associated data plexes to zeroes. If the volume resides on thin reclaimable LUNs, VxVM also reclaims the space within the storage array
<code>init=active</code>	Initializes the volume or grown region without modifying the existing data on the plexes.
<code>init=default</code>	Performs the default operation.

For more information, see the `vxassist(1m)` manual page.

### Layout operations on VxFS mounted volumes now use SmartMove

This is a performance related enhancement. Layout operations on VxFS mounted volumes take advantage of its SmartMove capability. The change results in faster relayout of the volume.

### Reclamation writes are not counted in write statistics

When you issue a reclamation command on a LUN, a disk group, or an enclosure, the request is passed down as writes to the Volume Manager from VxFS. This feature differentiates the writes generated by reclamation from the writes generated by normal application IO in the stats. By default, the reclamation writes are not shown with the `vxstat` command. To display the reclamation writes, use the command:

```
# vxstat -fm
```

## Changes related to Veritas File System

Veritas File System includes the following changes:

## Autolog replay on mount

The `mount` command automatically runs the VxFS `fsck` command to clean up the intent log if the `mount` command detects a dirty log in the file system. This functionality is only supported on file systems mounted on a Veritas Volume Manager (VxVM) volume.

## Dynamic Storage Tiering is rebranded as SmartTier

In this release, the Dynamic Storage Tiering (DST) feature is rebranded as SmartTier.

## FileSnap

FileSnaps provide an ability to snapshot objects that are smaller in granularity than a file system or a volume. The ability to snapshot parts of a file system name space is required for application-based or user-based management of data stored in a file system. This is useful when a file system is shared by a set of users or applications or the data is classified into different levels of importance in the same file system.

See the *Veritas Storage Foundation Advanced Features Administrator's Guide*.

## Online migration of a native file system to VxFS file system

The online migration feature provides a method to migrate a native file system to the VxFS file system. The migration takes minimum amounts of clearly bounded, easy to schedule downtime. Online migration is not an in-place conversion and requires a separate storage. During online migration the application remains online and the native file system data is copied over to the VxFS file system.

See the *Veritas Storage Foundation Advanced Features Administrator's Guide*.

## SmartTier sub-file movement

In this release, the Dynamic Storage Tiering (DST) feature is rebranded as SmartTier. With the SmartTier feature, you can now manage the placement of file objects as well as entire files on individual volumes.

See the *Veritas Storage Foundation Advanced Features Administrator's Guide* and the `fsppadm(1M)` manual page.

## Tuning performance optimization of inode allocation

You can now set the `delicache_enable` tunable parameter, which specifies whether performance optimization of inode allocation and reuse during a new file creation is turned on or not.

See the *Veritas File System Administrator's Guide* and the `vxtunefs(1M)` manual page.

## Veritas File System is more thin friendly

You can now tune Veritas File System (VxFS) to enable or disable thin-friendly allocations.

## Changes related to Veritas Volume Manager

Veritas Volume Manager (VxVM) includes the following changes:

### Changes to DMP coexistence with native multi-pathing

The following limitations apply when using DMP with native multi-pathing:

- DMP does not display extended attributes for devices under the control of the native multi-pathing driver, MPxIO. Extended attributes include the AVID, TP, TP\_RECLAIM, SSD, RAID levels, snapshots, and hardware mirrors.
- DMP does not support enabling MPxIO on some controller ports and not on the other ports that access the same enclosure. You must enable MPxIO either for all of the paths of a LUN or for none of the paths.
- If an array of any class other than Active/Active (A/A) is under the control of MPxIO, then DMP claims the devices in A/A mode.  
DMP does not store path-specific attributes such as primary/secondary paths, port serial number, and the array controller ID.

### Veritas Volume Manager persisted attributes

The `vxassist` command now allows you to define a set of named volume allocation rules, which can be referenced in volume allocation requests. The `vxassist` command also allows you to record certain volume allocation attributes for a volume. These attributes are called persisted attributes. You can record the persisted attributes and use them in later allocation operations on the volume, such as growing the volume.

## Automatic recovery of volumes during disk group import

After a disk group is imported, disabled volumes are enabled and started by default. To control the recovery behavior, use the `vxdefault` command to turn on or off the tunable `autostartvolumes`. If you turn off the automatic recovery, the recovery behaves the same as in previous releases. This behavior is useful if you want to perform some maintenance after importing the disk group, and then start the volumes. To turn on the automatic recovery of volumes, specify `autostartvolume=on`.

After a disk group split, join, or move operation, Veritas Volume Manager (VxVM) enables and starts the volumes by default.

## Enhancements to the `vxrootadm` command

The `vxrootadm` command has the following new options:

- `vxrootadm split`  
Splits the root disk mirror into a new root disk group.
- `vxrootadm join`  
Reattaches mirrors from an alternate root disk group to the current (booted) root disk group.
- `vxrootadm addmirror`  
Adds a mirror of the root disk to the root disk group, for redundancy in case the current root disk fails.
- `vxrootadm rmmirror`  
Deletes a root disk mirror from the current (booted) root disk group.

See the `vxrootadm(1m)` man page.

## Cross-platform data sharing support for disks greater than 1 TB

Previous to this release, the `cdsdisk` format was supported only on disks up to 1 TB in size. Therefore, cross-platform disk sharing (CDS) was limited to disks of size up to 1 TB. Veritas Volume Manager (VxVM) 5.1 SP1 removes this restriction. VxVM 5.1 SP1 introduces CDS support for disks of size greater than 1 TB as well.

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**Note:** The disk group version must be at least 160 to create and use the `cdsdisk` format on disks of size greater than 1 TB.

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## Default format for auto-configured disk has changed

By default, VxVM initializes all auto-configured disks with the `cdsdisk` format. To change the default format, use the `vxdiskadm` command to update the `/etc/default/vxdisk` file.

## Changes related to Veritas Dynamic Multi-Pathing (DMP)

The following sections describe changes in this release related to DMP.

### Veritas Dynamic Multi-Pathing (DMP) support for native logical volumes

In previous Veritas releases, DMP was only available as a feature of Veritas Volume Manager (VxVM). DMP supported VxVM volumes on DMP metadevices, and Veritas File System (VxFS) file systems on those volumes. This release extends DMP metadevices to support ZFS. You can create ZFS pools on DMP metadevices. DMP only supports ZFS on Solaris 10. There is no support for SVM.

In this release, Veritas Dynamic Multi-Pathing does not support Veritas File System (VxFS) on DMP devices.

DMP also supports creating single instance Oracle ASM or migrating an existing single instance of Oracle ASM onto DMP devices.

See the *Veritas Dynamic Multi-Pathing Administrator's Guide* for details.

### Enhancements to DMP I/O retries

Veritas Dynamic Multi-Pathing (DMP) has a new tunable parameter, `dmp_lun_retry_timeout`. This tunable specifies a retry period for handling transient errors.

When all paths to a disk fail, there may be certain paths that have a temporary failure and are likely to be restored soon. If I/Os are not retried for a period of time, the I/Os may be failed to the application layer even though some paths are experiencing a transient failure. The DMP tunable `dmp_lun_retry_timeout` can be used for more robust handling of such transient errors by retrying the I/O for the specified period of time in spite of losing access to all the paths.

The DMP tunable `dmp_failed_io_threshold` has been deprecated.

See the `vxddmpadm(1m)` man page for more information.

## Changes related to Veritas Volume Replicator

Veritas Volume Replicator includes the following changes:

## **vvrcheck configuration utility**

There is now a configuration utility, `/etc/vx/diag.d/vvrcheck`, that displays current replication status, detects and reports configuration anomalies, and creates statistics files that can be used by display tools. The `vvrcheck` also runs diagnostic checks for missing daemons, valid licenses, and checks on the remote hosts on the network. For more information, see the `vvrcheck(1M)` man page.

## **Default network protocol is now TCP/IP**

TCP/IP is now the default transport protocol for communicating between the Primary and Secondary sites. However, you have the option to set the protocol to UDP.

For information on setting the network protocol, see the *Veritas™ Volume Replicator Administrator's Guide*.

## **Veritas Volume Replicator supports data replication from SPARC to Solaris x86-64 platforms**

Beginning in Storage Foundation 5.1 SP1, you can replicate data from SPARC to Solaris x86-64 platforms without extensive downtime in your environment. However, once the data is replicated in the Solaris x86-64 environment, you must convert the byte order from little-endian to big-endian, so the applications can work with it.

For information on converting the byte order of a file system, see the *Veritas Storage Foundation™ Advanced Features Administrator's Guide*. Other conversion information is application-dependent.

## **Checksum is disabled by default for the TCP/IP protocol**

Beginning with Storage Foundation 5.1 with TCP as the default network protocol, VVR does not calculate the checksum for each data packet it replicates. VVR relies on the TCP checksum mechanism. However, if a node in a replicated data set is using a version of VVR earlier than 5.1 SP1PR4, VVR calculates the checksum regardless of the network protocol.

If you are using UDP/IP, checksum is enabled by default.

## **Improved replication performance in the presence of snapshots on the Secondary site**

The effect of snapshots on the Secondary site is less drastic on replication performance.

## Changes related to Storage Foundation for Databases (SFDB) tools

New features in the Storage Foundation for Databases tools package for database storage management:

- Cached ODM support for clusters
- Cached ODM Manager support
- The Database Dynamic Storage Tiering (DBDST) feature is rebranded as SmartTier for Oracle and includes expanded functionality to support management of sub-file objects.
- Oracle 11gR2 support

New commands for 5.1 SP1:

- SmartTier for Oracle: commands added to support storage tiering of sub-file objects: `dbdst_obj_view`, `dbdst_obj_move`
- Cached ODM: command added to support Cached ODM Manager: `dbed_codm_adm`

## No longer supported

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

- Bunker replication is not supported in a Cluster Volume Manager (CVM) environment.

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

Commands which are no longer supported as of version 5.1:

- ORAMAP (`libvxoramap`)
- Storage mapping commands `dbed_analyzer`, `vxstorage_stats`
- DBED providers (DBEDAgent), Java GUI, and `dbed_dbprocli`.

The SFDB tools features can only be accessed through the command line interface. However, Veritas Operations Manager (a separately licensed product) can display Oracle database information such as tablespaces, database to LUN mapping, and tablespace to LUN mapping.

- Storage statistics: commands `dbdst_makelbfs`, `vxdmts_fstatsummary`, `dbdst_fiostat_collector`, `vxdmts_get_datafile_stats`

- `dbed_saveconfig`, `dbed_checkconfig`
- `dbed_ckptplan`, `dbed_ckptpolicy`
- `qio_convertdbfiles -f` option which is used to check for file fragmentation
- `dbed_scheduler`
- `sfua_rept_migrate` with `-r` and `-f` options

## System requirements

This section describes the system requirements for this release.

### Supported Solaris operating systems

This release of the Veritas products is supported on the following Solaris operating systems:

- Solaris 9 (32-bit and 64-bit, SPARC) with Update 7, 8, and 9  
Symantec VirtualStore is only supported on Solaris 9 (SPARC Platform 64-bit).

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**Note:** In the next major release, Veritas products will not support Solaris 9.

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- Solaris 10 (64-bit, SPARC or x86\_64) with Update 6, 7, 8, and 9  
Solaris 10 (SPARC and x86\_64) with Update 9 requires VRTSvxvm patch 142629-08 (SPARC) or 142630-08 (x86\_64)  
Symantec VirtualStore is only supported on Solaris 10 (SPARC or X86 Platform 64-bit).

For the most up-to-date list of operating system patches, refer to the Release Notes for your product.

For important updates regarding this release, review the Late-Breaking News TechNote on the Symantec Technical Support website:

<http://entsupport.symantec.com/docs/334829>

For information about the use of this product in a VMware Environment on Solaris x64, refer to <http://entsupport.symantec.com/docs/289033>

### Cluster environment requirements for Sun Clusters

Use these steps if the configuration contains a cluster, which is a set of hosts that share a set of disks.

### To configure a cluster

- 1 Obtain a license for the optional VxVM cluster feature for a Sun Cluster from your Sun Customer Support channel.
- 2 If you plan to encapsulate the root disk group, decide where you want to place it for each node in the cluster. The root disk group, usually aliased as `bootdg`, contains the volumes that are used to boot the system. VxVM sets `bootdg` to the appropriate disk group if it takes control of the root disk. Otherwise `bootdg` is set to `nodg`. To check the name of the disk group, enter the command:
 

```
# vxpdg bootdg
```
- 3 Decide the layout of shared disk groups. There may be one or more shared disk groups. Determine how many you wish to use.
- 4 If you plan to use Dirty Region Logging (DRL) with VxVM in a cluster, leave a small amount of space on the disk for these logs. The log size is proportional to the volume size and the number of nodes. Refer to the *Veritas Volume Manager Administrator's Guide* for more information on DRL.
- 5 Install the license on every node in the cluster.

## Hardware compatibility list (HCL)

The hardware compatibility list contains information about supported hardware and is updated regularly. 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.

For the latest information on supported hardware, visit the following URL:

<http://www.symantec.com/docs/TECH74012>

For information on specific HA setup requirements, see the *Veritas Cluster Server Installation Guide*.

## Database requirements

Veritas Storage Foundations product features are supported for the following database environments:

**Table 1-1**

Veritas Storage Foundations feature	DB2	Oracle	Sybase
Oracle Disk Manager, Cached Oracle Disk Manager	No	Yes	No

**Table 1-1** (continued)

Veritas Storage Foundations feature	DB2	Oracle	Sybase
Quick I/O, Cached Quick I/O	Yes	Yes	Yes
Concurrant I/O	Yes	Yes	Yes
Storage Checkpoints	Yes	Yes	Yes
Flashsnap	Yes	Yes	Yes
SmartTier	Yes	Yes	Yes
Database Storage Checkpoints	No	Yes	No
Database Flashsnap	No	Yes	No
SmartTier for Oracle	No	Yes	No

Storage Foundation for Databases (SFDB) tools Database Checkpoints, Database Flashsnap, and SmartTier for Oracle are supported only for Oracle database environments.

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

<http://entsupport.symantec.com/docs/331625>

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

## Veritas File System requirements

Veritas File System requires that the values of the Solaris variables `lwp_default_stksize` and `svc_default_stksize` are at least 0x6000. When you install the Veritas File System package, `VRTSvxfs`, the `VRTSvxfs` packaging scripts check the values of these variables in the kernel. If the values are less than the required values, `VRTSvxfs` increases the values and modifies the `/etc/system` file with the required values. If the `VRTSvxfs` scripts increase the values, the installation proceeds as usual except that you must reboot and restart the installation program. A message displays if a reboot is required.

To avoid an unexpected need for a reboot, verify the values of the variables before installing Veritas File System. Use the following commands to check the values of the variables:

```
# echo "lwp_default_stksize/X" | mdb -k
lwp_default_stksize:
```

```
lwp_default_stksize:                6000

# echo "svc_default_stksize/X" | mdb -k
svc_default_stksize:
svc_default_stksize:                6000
```

If the values shown are less than 6000, you can expect a reboot after installation.

---

**Note:** The default value of the `svc_default_stksize` variable is 0 (zero), which indicates that the value is set to the value of the `lwp_default_stksize` variable. In this case, no reboot is required, unless the value of the `lwp_default_stksize` variable is too small.

---

To avoid a reboot after installation, you can modify the `/etc/system` file with the appropriate values. Reboot the system prior to installing the packages. Appropriate values to the `/etc/system` file are shown in the following examples:

```
set lwp_default_stksize=0x6000
set rpcmod:svc_default_stksize=0x6000
```

## Veritas Storage Foundation memory requirements

A minimum of 1 GB of memory is strongly recommended.

## Number of nodes supported

Storage Foundation supports cluster configurations with up to 64 nodes.

For more updates on this support, see the Late-Breaking News TechNote on the Symantec Technical Support website:

<http://entsupport.symantec.com/docs/334829>

## Fixed issues

This section covers the incidents that are fixed in this release.

See the corresponding Release Notes for a complete list of fixed incidents related to that product.

See “[Documentation](#)” on page 79.

## Veritas Storage Foundation fixed issues

### Veritas Storage Foundation: Issues fixed in 5.1 RP2

**Table 1-2** Veritas Storage Foundation fixed issues in 5.1 RP2

Fixed issues	Description
2088355	dbed_ckptrollback fails for -F datafile option for 11gr2
2080633	Fixed the issue with vxdbd dumping core during system reboot.
1976928	dbed_clonedb of offline checkpoint fails with ORA-00600

### Veritas Storage Foundation: Issues fixed in 5.1 RP1

**Table 1-3** Veritas Storage Foundation fixed issues in 5.1 RP1

Fixed issues	Description
1974086	reverse_resync_begin fails after successfully unmount of clone database on same node when primary and secondary host names do not exactly match.
1940409, 471276	Enhanced support for cached ODM
1901367, 1902312	dbed_vmclonedb failed to umount on secondary server after a successful VM cloning in RAC when the primary SID string is part of the snapplan name.
1896097	5.1 GA Patch:dbed_vmclonedb -o recoverdb for offhost get failed
1873738, 1874926	dbed_vmchecksnap fails on standby database, if not all redologs from primary db are present.
1810711, 1874931	dbed_vmsnap reverse_resync_begin failed with server errors.

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

This section describes the incidents that are fixed in Veritas Storage Foundation for Databases tools in this release.



**Table 1-4** Veritas Storage Foundation for Databases tools fixed issues

Incident	Description
1857357	Removing the VRTSodm 5.1 SP1 package may leave /dev/odm mounted in non-global zones preventing the odm module from unloading
1873738	The dbed_vmchecksnap command may fail
1736516	Clone command fails for instant checkpoint on Logical Standby database
1789290	dbed_vmclondb -o recoverdb for offhost fails for Oracle 10gr2 and prior versions
1810711	Flashsnap reverse resync command fails on offhost flashsnap cloning

## Veritas File System fixed issues

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

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

Incident	Description
2026603	Added quota support for the user "nobody".
2026625	The <code>sar -v</code> command now properly reports VxFS inode table overflows.
2050070	Fixed an issue in which the volume manager area was destroyed when spinlock was held.

## Veritas File System: Issues fixed in 5.1 RP2

**Table 1-6** Veritas File System fixed issues in 5.1 RP2

Fixed issues	Description
1995399	Fixed a panic due to null <code>i_fsext</code> pointer de-reference in <code>vx_inode</code> structure
2016373	Fixed a warning message V-3-26685 during freeze operation without nested mount points
2036841	Fixed a panic in <code>vx_set_tunefs</code>
2081441	Fixed an issue in <code>vxquota</code> regarding setting quota more than 1TB

**Table 1-6** Veritas File System fixed issues in 5.1 RP2 (*continued*)

Fixed issues	Description
2018481	Fixed an issue in fsppadm(1M) when volume did not have placement tags
2066175	Fixed panic in vx_inode_mem_deinit
2025155	Fixed an issue in fsck(1m) which was trying to free memory which was not allocated.
2043634	Fixed an issue in quotas API
1933844	Fixed a panic due to race condition in vx_logbuf_clean()
1960836	Fixed an issue in Thin Reclaim Operation
2026570	Fixed a hang issue in vx_dopreamble () due to ENOSPC error.
2026622	Fixed a runqueue contention issue for vx_worklists_thr threads
2030889	Fixed a hang issue during fsppadm(1m) enforce operation with FCL
2036214	Fixed a core dump issue in ncheck(1m) in function printname().
2076284	Optimized some VxMS api for contiguous extents.
2085395	Fixed a hang issue in vxfsckd.
2059621	Fixed a panic due to null pointer de-reference in vx_unlockmap()
2016345	Fixed an error EINVAL issue with O_CREATE while creating more than 1 million files.
1976402	Fixed the issue in fsck replay where it used to double fault for 2TB luns.
1954692	Fixed a panic due to NULL pointer de-reference in vx_free()
2026599	Fixed a corruption issue when Direct IO write was used with buffered read.
2030773	Fixed issue with fsppadm(1m) where it used to generate core when an incorrectly formatted XML file was used.
2026524	Fixed a panic in vx_mkimtran()
2080413	Fixed an issue with storage quotas
2084071	Fixed an issue in fcladm(1m) where it used to generate core when no savefile was specified
2072165	Fixed an active level leak issue while fsadm resize operation.

**Table 1-6** Veritas File System fixed issues in 5.1 RP2 (*continued*)

Fixed issues	Description
1959374	Fixed a resize issue when IFDEV is corrupt
2098385	Fixed a performance issue related to 'nodatainlog' mount option.
2112358	Fixed an issue with file-system I/O statistics.

## Veritas File System: Issues fixed in 5.1 RP1

**Table 1-7** Veritas File System 5.1 RP1 fixed issues (listed incident number/parent number)

Fixed issues	Description
1979429	mount usage error message is thrown while using from /opt/VRTS/bin
1978029	fsadm -R returns EFAULT in certain scenarios.
1976287	conform.backup test is skipped even if no local zone is available.
1973739	vxdisk reclaim fails on dg version 140 works only with ver 150-Cannot reclaim space on dg/vols created on 5.0MP3 after 5.1 upgrade.
1973539	Wrong boundary for reclamation on Hitachi AMS2000 Series
1972882	use separate structures for ioctl interfaces and CFS messages
1972207	full fsck is very slow on an fs with many ilist holes.
1969334	'vxupgrade' test failed.
1967027	LM-conform test odm hits an assert of "f:fdd_advreload:2"
1961790	LM.CMDS->fsck->full->scripts->fextop_12 fails
1960436	CFS.Comform->revnlookup hit "vx_msgprint" via "vx_cfs_iread" on the slave node
1958198	cfs odm stress/noise tests failed due to "bcmp error"
1957365	CFS-Conformance test failed
1957296	CFS-Conformance-Reconfig test hit assert "f:vx_validate_cistat:3"
1957043	LM -conformance/fcl/fcl_fsetquota.3 is failing

**Table 1-7** Veritas File System 5.1 RP1 fixed issues (listed incident number/parent number) (*continued*)

Fixed issues	Description
1957035	CFS cmds:fsck is failing
1957032	fsqa lm vxmssnap.9 test fails
1956926	cfs-cmds aborting due to fsck, mount, fsted, libtst 64-bit binaries
1954897	CFS-Conformance test hit assert "f:vx_mark_fset_clean:2"
1953913	LM-Command "vxquota" test failed.
1952827	LM / CFS - Cmds-> alerts test failed.
1952818	LM / CFS -Cmds-> vxtunefs test failed.
1949962	Fix the vxrsh and vxproyrshd processes for cfs reconfig testing.
1949077	cfs.conform.dbed hits assert "..f:vx_imap_process_inode:4a". by "..vx_workitem_process".
1948451	kernel-conform "sunppriv" and "getattr" tests are missing
1947359	mkdstfs fails to add new volumes
1947356, 1883938	Due to incorrect Makefile 'make clobber' is removing mkdstfs
1946442	tot build setup machine running LM-cmds -> fspadm got failures.
1946433	Enhance mkdstfs for explicitly selecting the purpose of volumes data vs metadata
1946431	mkdstfs only adds to existing volume tags
1946134	fsadm keeps relocating and copying already relocated and copied reorg-ed regions of a file in subsequent passes.
1944283	fcl close is not happening properly
1943116	mkdstfs uses wrong perl instead of /opt/VRTS/bin/perl
1943116	mkdstfs uses wrong perl instead of /opt/VRTS/bin/perl
1940870	Documentation/Test discrepancies
1940409	CFS support for cached ODM

**Table 1-7** Veritas File System 5.1 RP1 fixed issues (listed incident number/parent number) (*continued*)

Fixed issues	Description
1940390	Cached ODM needs improvements for async requests codm
1934107, 1891400	Incorrect ACL inheritance
1934103	[PRI-1] Performance issues with mmap VxFS 4.1MP4 RP2
1934101	cfs Test cfs-stress-enterprise hit the same assert :f:vx_cwfrz_wait:2
1934098, 1860701	clone removal can block resive ops
1934096, 1746491	core dump of fsvmap.
1934095, 1838468	Data page fault at vx_qiostats_update due to fiostats structure already free'd
1934094, 1846461	vxfsstat metrics to monitor UNHASHED entries in the dcache
1934085, 1871935	secondaries ias_ist not updated fully.
1933975, 1844833	fsadm shrink fs looping in vx_reorg_emap due to VX_EBMAPMAX from vx_reorg_enter_zfod
1933844	bad mutex panic in VxFS
1933635, 1914625	[VxFS] Behavior of DST Access age-based file placement policy with preffered files
1931973	fsppadm gives spurious messages when run from multiple CFS nodes found only from 5.1 onwards
1908776	UX:vxfs mount: ERROR: V-3-22168: Cannot open portal device...
1906521	CFS-conform/quotas test hit assert vx_populate_pnq via vx_detach_fset
1902241	9-15a driver regression observed on SFCFSORA TPCC test
1897458, 1805046	wrong alert generation from vxfs when file system usage threshold is set
1895454	Sol10x86 lm.conform->ts some TCs fail

**Table 1-7** Veritas File System 5.1 RP1 fixed issues (listed incident number/parent number) (*continued*)

Fixed issues	Description
1878583	CFS: getattr call optimization to speedup the case when binaries are being mmapped from many nodes on CFS.

## Veritas Volume Manager fixed issues

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

**Table 1-8** Veritas Volume Manager fixed issues

Incident	Description
150476	Add T for terabyte as a suffix for volume manager numbers
155930	Improve debug output from VxVM JBOD recognition code. SUN Bug ID 4905792
248925	If vxdg import returns error, parse it
311664	vxconfig/dmp hang due to a problem in the dmp_reconfig_update_cur_pri() function's logic
321733	Need test case to deport a disabled dg.
339282	Failed to create more than 256 config copies in one DG. SUN Bug ID 6284604
543638	vxdkmpadm/vxdiskunsetup doesn't work well if tpdmode=native.
597517	Tunable to initialize EFI labeled >1tb PP devices.
1097258	vxconfigd hung when an array is disconnected.
1239188	Enhance vxprivutil to enable, disable, and display config+log copies state.
1301991	When vxconfigd is restarted with -k option, all log messages are sent to stdout. syslog should be the default location.
1321475	Join Failure Panic Loop on axe76 cluster.
1361625	With use_all_paths=yes, reservation conflict is encountered.

**Table 1-8** Veritas Volume Manager fixed issues (*continued*)

Incident	Description
1441406	'vxdisk -x list' displays wrong DGID.
1458792	After upgrade from SF5.0mp1 to SF5.0mp3, *unit_io and *pref_io was set to 32m.
1475690, 1939810	additional diagnostics required in vxclust/vxconfigd. SUN Bug ID 4955341
1479735	CVR: I/O hang on slave if master (logowner) crashes with DCM active.
1485075	DMP sending I/O on an unopened path causing I/O to hang
1504466	VxVM: All partitions aren't created after failing original root disk and restoring from mirror.
1513385	VVR:Primary panic during autosync or dcm replay.
1528121	FMR: wrong volpagemod_max_memsz tunable value cause buffer overrun
1528160	An ioctl interrupted with EINTR causes frequent vxconfigd exits.
1586207	"vxsnap refresh" operations fail occasionally while data is replicating to secondary.
1589022	Infinite looping in DMP error handling code path because of CLARIION APM, leading to I/O hang.
1594928	Avoid unnecessary retries on error buffers when disk partition is nullified.
1662744	RVG offline hung due to I/Os pending in TCP layer
1664952	Refreshing private region structures degrades performance during "vxdisk listtag" on a setup of more than 400 disks.
1665094	Snapshot refresh causing the snapshot plex to be detached.
1713670	'vxassist -g <dg-name> maxsize' doesn't report no free space when applicable
1715204	Failure of vxsnap operations leads to orphan snap object which cannot be removed.
1728809	vxdiskadm option -17 -5/6 unwanted message getting displayed. SUN Bug ID 6899126
1766452	vradmind dumps core during collection of memory stats.
1792795	Supportability feature/messages for plex state change, DCO map clearance, usage of fast re-sync by vxplex

**Table 1-8** Veritas Volume Manager fixed issues (*continued*)

Incident	Description
1825270	I/O failure causes VCS resources to fault, as dmpnode get disabled when storage processors of array are rebooted in succession
1825516	Unable to initialize and use ramdisk for VxVM use.
1826088	After pulling out the Fibre Channel cables of a local site array, plex becomes DETACHED/ACTIVE.
1829337	Array firmware reversal led to disk failure and offlined all VCS resources
1831634	CVR: Sending incorrect sibling count causes replication hang, which can result in I/O hang.
1831969	VxVM: ddl log files are created with world write permission
1835139	I/Os hung after giveback of NetApp array filer
1840055	VRTSvxvm will change how it starts volumes upon dg import. SUN Bug ID 6887011
1840673	After adding new LUNs, one of the nodes in 3 node CFS cluster hangs
1840832	vxrootadm does not update the partition table while doing a grow operation
1843233 1908756	vxvm core dumps during live upgrade pkgadd VRTSvxvm to altroot. SUN Bug ID 6875379
1846165	Data corruption seen on cdsdisks on Solaris-x86 in several customer cases
1850166	vxdisk resize failed after LUN was expanded in the backend alongwith disk geometry change
1857558	Need to ignore jeopardy notification from GAB for SFCFS/RAC, since oracle CRS takes care of fencing in this stack
1857729	CVM master in the VVR Primary cluster panicked when rebooting the slave during VVR testing
1860892	Cache Object corruption when replaying the CRECs during recovery
1869995	VVR: Improve Replication performance in presence of SO snapshots on secondary.
1871447	Mirrored encapsulated disk panics on boot when the primary is removed & mpvio is enabled
1872743	Layered volumes not startable due to duplicate rid in vxrecover global volume list.



**Table 1-8** Veritas Volume Manager fixed issues (*continued*)

Incident	Description
1874034	Race between modunload and an incoming IO leading to panic
1880279	Evaluate the need for intelligence in vxattachd to clear stale keys on failover/shared dg's in CVM and non CVM environment.
1881336	VVR: Primary node panicked due to race condition during replication
1884070	When running iotest on a volume, the primary node runs out of memory
1886007	vxesd leaking File descriptors
1889747	vxlustart customer is unable to do live upgrade with Solaris Zone on vxfs
1897007	vxesd coredumps on startup when the system is connected to a switch which has more than 64 ports
1899688	VVR: Every I/O on smartsync enabled volume under VVR leaks memory
1899943	CPS based fencing disks used along with CPS servers does not have coordinator flag set
1901827	vxdg move fails silently and drops disks.
1907796	Corrupted Blocks in Oracle after Dynamic LUN expansion and vxconfigd core dump
1915356	I/O stuck in vxvm causes a cluster node panic.
1920614	SF 5.1 vxdg man page does not include disk group version 150. SUN Bug ID 6909778
1932023	vxdiskadm option 'Allow multipathing of all disks on a controller by VxVM' fails due to script errors
1933350	SF 5.1 - /usr/sbin/vxtrace -IE has a Segmentation Fault(coredump) and/or while running VRTSexplorer. SUN Bug ID 6914659
1933375	Tunable value of 'voliomem_chunk_size' is not aligned to page-size granularity
1933528	During Dynamic reconfiguration vxvm disk ends up in error state after replacing physical LUN.
1935297	vxconfigd dumps core in get_prop()
1936611	vxconfigd core dump while splitting a diskgroup

**Table 1-8** Veritas Volume Manager fixed issues (*continued*)

Incident	Description
1938708	With EBN naming, root (un)encapsulation is not handling dump/swap device properly
1938907	WWN information is not displayed due to incorrect device information returned by HBA APIs
1946941	vxsnap print shows incorrect year
1947832	unnecessary messages to console: "WARNING: dmpEngenio _fini function called". SUN Bug ID 6920339
1954062	vxrecover results in os crash
1955693	VxVM 5.0MP3RP3 patch 122058-13 disables vxfsldlic service and prevents boot multi-user mode after jumpstart installation
1956777	CVR: Cluster reconfiguration in primary site caused master node to panic due to queue corruption
1959244	After creation of zpool on a device, the type is not shown as "auto:ZFS" in the output of vxdisk list
1960341	Toggling of naming scheme is not properly updating the daname in the vxvm records.
1969526	Panic in voldiodone when a hung priv region I/O comes back
1972848	vxconfigd dumps core during upgradation of VxVM
1974393	Cluster hangs when the transaction client times out
1982178	vxdiskadm option "6" should not list available devices outside of source diskgroup
1982715	vxclustadm dumps core during memory re-allocation.
1992537	Memory leak in vxconfigd causing DiskGroup Agent to timeout
1992872	vxresize fails after DLE.
1993953	CVM Node unable to join in Sun Cluster environment due to wrong coordinator selection
1998447	Vxconfigd dumps core due to incorrect handling of signal
1999004	I/Os hang in VxVM on linked-based snapshot
2002703	Misleading message while opening the write protected device.

**Table 1-8** Veritas Volume Manager fixed issues (*continued*)

Incident	Description
2009439	CVR: Primary cluster node panicked due to queue corruption
2010426	Tag setting and removal do not handle wrong enclosure name
2015577	VVR init scripts need to exit gracefully if VVR license not installed.
2016099	man pages get wrongly installed in /opt/opt/VRTS directory after installing VRTSjavm package
2016129	Tunable to disable OS event monitoring by vxesd
2019525	License not present message is wrongly displayed during system boot with SF5.1 and SFM2.1
2021737	vxdisk list shows HDS TrueCopy S-VOL read only devices in error state.
2025593	vxdg join hang/failure due to presence of non-allocator inforecords and when tagmeta=on
2027831	vxdg free not reporting free space correctly on CVM master. vxprint not printing DEVICE column for subdisks.
2029480	Diskgroup join failure renders source diskgroup into inconsistent state
2029735	System panic while trying to create snapshot
2034104	Unable to initialize a disk using vxdiskadm
2034564	I/Os hung in serialization after one of the disks which formed the raid5 volume was pulled out
2036929	Renaming a volume with link object attached causes inconsistencies in the disk group configuration
2038137	System panics if volrdmirbreakup() is called recursively. SUN Bug ID 6963215
2038735	Incorrect handling of duplicate objects resulting in node join failure and subsequent panic.
2040150	Existence of 32 or more keys per LUN leads to loss of SCSI3 PGR keys during cluster reconfiguration
2049952	In Japanese locale vxrootadm shows incorrect messages
2052203	Master vold restart can lead to DG disabled and abort of pending transactions.

**Table 1-8** Veritas Volume Manager fixed issues (*continued*)

Incident	Description
2052459	CFS mount failed on slave node due to registration failure on one of the paths
2054201	'vxctl enable' triggers SCSI errors on EMC CLARiiON MirrorView read-only devices.
2055609	Allocation specifications not being propagated for DCO during a grow operation
2060785	Primary panics while creating primary rvg
2060974	vxrootadm sets wrong prtvtoc
2061066	vxisforeign command fails on internal cciss devices
2061758	Need documentation on list of test suites available to evaluate CDS code path and verification of the code path.
2063348	Improve/modify error message to indicate its thin_reclaim specific
2066111	dmp paths of unlabelled disks getting disabled upon listing of disks
2067038	Correction of EFI detection logic in DMP after fix provided by Sun/Oracle
2067473	SF 5.1 SP1 Beta - failure to register disk group with Sun Cluster. SUN Bug ID 6960757
2070531	Campus cluster: Couldn't enable site consistency on a dcl volume, when trying to make the disk group and its volumes siteconsistent.
2075801	VVR: "vxnetd stop/start" panicked the system due to bad free memory
2076700	VVR: Primary panic due to NULL pointer dereference
2076818	VxVM: vxvm-startup2 hangs at bootup on some systems while running 'svcadm enable -s /network/iscsi/initiator'. SUN Bug IDs 6924834
2078115	dmpnode of a zpool device wrongly shows state as "auto:error"
2094685	Diskgroup corruption following an import of a cloned BCV image of a SRDF-R2 device
2097320	Events generated by dmp_update_status() are not notified to vxconfigd in all places.
2105722	VVR: I/O hang on Primary with link-breakoff snapshot
2108628	vxunroot to align the dump device with that of the remaining boot device

**Table 1-8** Veritas Volume Manager fixed issues (*continued*)

Incident	Description
2112568	System panics while attaching back two Campus Cluster sites due to incorrect DCO offset calculation
2118003	5.1_sp1 vxlogger64 core dumps with "-help". SUN Bug ID 6977493
2122009	vxddladm list shows incorrect hba information after running vxconfigd -k
2126731	vxdisk -p list output is not consistent with previous versions
2131814	VVR: System panic due to corrupt sio in _VOLRPQ_REMOVE

## Veritas Volume Manager: Issues fixed in 5.1 RP2

**Table 1-9** Veritas Volume Manager 5.1 RP2 fixed issues

Fixed issues	Description
1504466	VxVM: All partitions aren't created after failing original root disk and restoring from mirror. Sun Bug ID: 6791545
1897007	vxesd coredumps on startup when the system is connected to a switch which has more than 64 ports. Sun Bug ID: 6902146
1920894	vxcheckhbaapi can loop forever. Sun Bug ID: 6905587
1993953	CVM Node unable to join in Sun Cluster environment due to wrong coordinator selection. Sun Bug ID: 6935505
2021737	vxdisk list shows HDB TrueCopy S-VOL read only devices in error state. Sun Bug ID: 6953184
2112568	System panics while attaching back two Campus Cluster sites due to incorrect DCO offset calculation. Sun Bug ID: 6980990
1097258	vxconfigd hung when an array is disconnected.
1441406	'vxdisk -x list' displays wrong DGID.

**Table 1-9** Veritas Volume Manager 5.1 RP2 fixed issues (*continued*)

Fixed issues	Description
1485075	DMP sending I/O on an unopened path causing I/O to hang.
1513385	VVR:Primary panic during autosync or dcm replay.
1662744	RVG offline hung due to I/Os pending in TCP layer.
1665094	Snapshot refresh causing the snapshot plex to be detached.
1781461	Prompt user in the early phase of encapsulation to run vxdisksetup within vxdiskadm when disk is sliced.
1829337	Array firmware reversal led to disk failure and offlined all VCS resources.
1831969	VxVM: ddl log files are created with world write permission.
1871447	Mirrored encapsulated disk panics on boot when the primary is removed & mpxio is enabled.
1874034	Race between modunload and an incoming IO leading to panic.
1880279	Evaluate the need for intelligence in vxattachd to clear stale keys on failover/shared dg's in CVM and non CVM environment.
1882789	Enabling a path to the EMC lun in LDOM environment fails.
1899943	CPS based fencing disks used along with CPS servers does not have coordinator flag set.
1901847	ISCSI devices not visible to VxVM after boot since VxVM discovers devices before ISCSI device discovery.
1911546	Vxrecover hung with layered volumes.
1920761	I/O hang observed after connecting the storage back to master node in case of local detach policy.
1923906	CVM: Master should not initiate detaches while leaving the cluster due to complete storage failure.
1929074	vxbootsetup not processing volumes in an ordered manner.
1929083	Vxattachd fails to reattach site in absence of vxnotify events.
1932023	vxdiskadm option 'Allow multipathing of all disks on a controller by VxVM' fails due to script errors.
1933375	Tunable value of 'voliomem_chunk_size' is not aligned to page-size granularity.

**Table 1-9** Veritas Volume Manager 5.1 RP2 fixed issues (*continued*)

Fixed issues	Description
1933477	Disk group creation on EFI disks succeeds but with error messages.
1933528	During Dynamic reconfiguration vxvm disk ends up in error state after replacing physical LUN.
1936611	vxconfigd core dump while splitting a diskgroup.
1938708	With EBN naming, root (un)encapsulation is not handling dump/swap device properly.
1942985	Improve locking mechanism while updating mediatype on vxvm objects.
1946936	CVM: IO hangs during master takeover waiting for a cache object to quiesce.
1946939	CVM: Panic during master takeover, when there are cache object I/Os being started on the new master.
1946941	vxsnap print shows incorrect year.
1952177	Machine panics after creating RVG.
1956777	CVR: Cluster reconfiguration in primary site caused master node to panic due to queue corruption.
1960341	Toggling of naming scheme is not properly updating the daname in the vxvm records.
1972755	TP/ETERNUS:No reclaim seen with Stripe-Mirror volume.
1974393	Avoiding cluster hang when the transaction client timed out.
1982715	vxclustadm dumping core while memory re-allocation.
1983768	IO hung on linked volumes while carrying out third mirror breakoff operation.
1989662	/opt/VRTSsfmh/bin/vxlist causes panic.
1992537	Memory leak in vxconfigd causing DiskGroup Agent to timeout.
1992872	Vxresize fails after DLE.
1996162	Bootdg not reset after unencapsulation.
1998447	Vxconfigd dumped core due to incorrect handling of signal.
1999004	I/Os hang in VxVM on linked-based snapshot.

**Table 1-9** Veritas Volume Manager 5.1 RP2 fixed issues (*continued*)

Fixed issues	Description
2006454	AxRT5.1P1: vxsnap prepare is displaying vague error message.
2010426	Tag setting and removal do not handle wrong enclosure name.
2011316	VVR: After rebooting 4 nodes and try recoveringRVGwill panic all the slave nodes.
2012016	Slave node panics while vxrecovery is in progress on master.
2015570	File System read failure seen on space optimized snapshot after cache recovery.
2015577	VVR init scripts need to exit gracefully if VVR license not installed.
2016129	DDL: Tunable to disable OS event monitoring by vxesd.
2019525	License not present message is wrongly displayed during system boot with SF5.1 and SFM2.1.
2029480	Diskgroup join failure renders source diskgroup into inconsistent state.
2029735	System panic while trying to create snapshot.
2031462	Node idle events are generated every second for idle paths controlled by Third Party drivers.
2034104	Unable to initialize a disk using vxdiskadm.
2034564	I/Os hung in serialization after one of the disk which formed the raid5 volume was pulled out.
2036929	renaming a volume with link object attached causes inconsistencies in the disk group configuration.
2038735	Incorrect handling of duplicate objects resulting in node join failure and subsequent panic.
2040150	Existence of 32 or more keys per LUN leads to loss of SCSI3 PGR keys during cluster reconfiguration.
2049952	Vxrootadm shows incorrect messages in Japanese on VxVM5.1RP1 with L10N for Solaris.
2052459	CFS mount failed on slave node due to registration failure on one of the paths.
2053975	Snapback operation panicked the system.



**Table 1-9** Veritas Volume Manager 5.1 RP2 fixed issues (*continued*)

Fixed issues	Description
2055609	Allocation specifications not being propagated for DCO during a grow operation.
2059046	FMR:TP: snap vol data gets corrupted if vxdisk reclaim is run while sync is in progress.
2060974	vxrootadm sets wrong prtvtoc on VxVM5.1RP1.
2061066	vxisforeign command fails on internal cciss devices.
2065669	After upgrading to 5.1, reinitializing the disk makes public region size smaller than the actual size.
2078111	When the IOs are large and need to be split, DRL for linked volumes cause I/Os to hang.
2113831	vxconfigd core dumps while including the previously excluded controller.
2126731	VxVM 5.1: vxdisk -p list output is not consistent with previous versions.

## Veritas Volume Manager: Issues fixed in 5.1 RP1

**Table 1-10** Veritas Volume Manager 5.1 RP1 fixed issues

Fixed issues	Description
1972852, 1972848	vxconfigd dumped core in dg_config_compare() while upgrading to 5.1.
1955693	VxVM 5.0MP3RP3 patch 122058-13 disables vxfsldlic service and prevents boot multi-user mode after jumpstart
1938484	EFI: Prevent multipathing don't work for EFI disk
1937841	VxVM: checkin the fmrshowmap utility
1915356	I/O stuck in vxvm caused cluster node panic
1935297	vxconfigd dumps core in get_prop()
1907796	Corrupted Blocks in Oracle after Dynamic LUN expansion and vxconfigd core dump
1901827	vxdbg move failed silently and drops disks.

**Table 1-10** Veritas Volume Manager 5.1 RP1 fixed issues (*continued*)

Fixed issues	Description
1899688	[VVR] Every I/O on smartsync enabled volume under VVR leaks memory
1889747	vxlustart customer is unable to do live upgrade with Solaris Zone on vxfs
1886007	vxconfigd lose license information, vxesd leaking File descriptors
1884070	When running iotest on volume, primary node runs out of memory
1881336	VVR: Primary Panic in vol_ru_replica_sent()
1872743	Layered volumes not startable due to duplicate rid in vxrecover global volume list.
1870049	Dump device changed to none after boot disk encapsulation
1860892	Cache Object corruption when replaying the CRECs during recovery
1857729	CVM master in the VVR Primary cluster panic when rebooting the slave during VVR testing
1850166	vxvm vxdisk error v-5-1-8643 device 0_bpcs001_fra: resize failed:
1846165	Data corruption seen on cdsdisks on Solaris-x86 in several customer cases
1840832	vxrootadm does not update the partition table while doing a grow operation
1840673	After adding new luns one of the nodes in 3 node CFS cluster hangs
1835139	CERT : pnate test hang I/O greater than 200 seconds during the filer giveback
1834848	TP:Solaris:reclamation causes data corruption
1826088	After pulling out FC cables of local site array, plex became DETACHED/ACTIVE
1825516	Unable to initialize and use ramdisk for VxVM use
1825270	Need for dmp_revive_paths( in dmp reconfiguration/restore_demon code path.
1792795	supportability feature/messages for plex state change, DCO map clearance, usage of fast re-sync by vxplex
1766452	VVR: VRAS: AIX: vradmind dumps core during collection of memory stats.
1664952	Refreshing private region structures degrades performance during "vxdisk listtag" on a setup of more than 400 disks.

**Table 1-10** Veritas Volume Manager 5.1 RP1 fixed issues (*continued*)

Fixed issues	Description
1528160	An ioctl interrupted with EINTR causes frequent vxconfigd exit()'s on 4.1MP4RP3
1479735	CVR: I/O hang on slave if master (logowner) crashes with DCM active.

## Known issues

This section covers the known issues in this release.

See the corresponding Release Notes for a complete list of known issues related to that product.

See [“Documentation”](#) on page 79.

## Issues related to installation

This section describes the known issues during installation and upgrade.

### Installation precheck can cause the installer to throw a license package warning (2320279)

If the installation precheck is attempted after another task completes (for example checking the description or requirements) the installer throws the license package warning. The warning reads:

```
VRTSvlic package not installed on system_name
```

#### Workaround:

The warning is due to a software error and can be safely ignored.

### While configuring authentication passwords through the Veritas product installer, the double quote character is not accepted (1245237)

The Veritas product installer prompts you to configure authentication passwords when you configure Veritas Cluster Server (VCS) as a secure cluster, or when you configure Symantec Product Authentication Service (AT) in authentication broker (AB) mode. If you use the Veritas product installer to configure authentication passwords, the double quote character (") is not accepted. Even though this special

character is accepted by authentication, the installer does not correctly pass the characters through to the nodes.

**Workaround:** There is no workaround for this issue. When entering authentication passwords, do not use the double quote character (\").

### **Incorrect error messages: error: failed to stat, etc. (2120567)**

During installation, you may receive errors such as, "error: failed to stat /net: No such file or directory." Ignore this message. You are most likely to see this message on a node that has a mount record of /net/x.x.x.x. The /net directory, however, is unavailable at the time of installation.

### **EULA changes (2161557)**

The locations for all EULAs have changed.

The English EULAs now appear in */product\_dir/EULA/en/product\_eula.pdf*

The EULAs for Japanese and Chinese now appear in those language in the following locations:

The Japanese EULAs appear in */product\_dir/EULA/ja/product\_eula.pdf*

The Chinese EULAs appear in */product\_dir/EULA/zh/product\_eula.pdf*

### **Upgrade or uninstallation of Storage Foundation HA may encounter module unload failures (2159652)**

When you upgrade or uninstall Storage Foundation HA, some modules may fail to unload with error messages similar to the following messages:

```
fdd failed to stop on node_name  
vxfs failed to stop on node_name
```

The issue may be observed on any one or all the nodes in the sub-cluster.

**Workaround:** After the upgrade or uninstallation completes, follow the instructions provided by the installer to resolve the issue.

### **During product migration the installer overestimates disk space use (2088827)**

The installer displays the space that all the product packages and patches needs. During migration some packages are already installed and during migration some packages are removed. This releases disk space. The installer then claims more space than it actually needs.

**Workaround:** Run the installer with `-nospacecheck` option if the disk space is less than that installer claims but more than actually required.

## The VRTSacclib package is deprecated (2032052)

The VRTSacclib package is deprecated. For installation, uninstallation, and upgrades, note the following:

- Fresh installs: Do not install VRTSacclib.
- Upgrade: Uninstall old VRTSacclib and install new VRTSacclib.
- Uninstall: Ignore VRTSacclib.

## The `-help` option for certain commands prints an erroneous argument list (2138046)

For `installsf`, `installat`, and the `installdmp` scripts, although the `-help` option prints the `-security`, `-fencing`, `-addnode` options as supported, they are in fact not supported. These options are only applicable for high availability products.

## Web installation looks hung when `-tmppath` option is used (2160878)

If you select the `-tmppath` option on the first page of the webinstaller after installing or uninstalling is finished on the last page of webinstaller, when you click the **Finish** button, the webpage hangs. Despite the hang, the installation or the uninstallation finishes properly and you can safely close the page.

## Installed 5.0 MP3 without configuration, then upgrade to 5.1 SP1, installer can not continue (2016346)

If you install 5.0MP3 without configuration, you cannot upgrade to 5.1SP1. This upgrade path is not supported.

**Workaround:** Uninstall 5.0 MP3, and then install 5.1 SP1.

## Live Upgrade may fail on Solaris 9 if packages and patches are not current (2052544)

Live Upgrade may fail on a Solaris 9 host if a VxFS file system is in `/etc/vfstab`.

**Workaround:** On the Solaris 9 host, install the Live Upgrade packages `SUNWlucfg`, `SUNWluu`, and `SUNWlur` from a Solaris 10 image. After you install the packages, install the latest Live Upgrade patch.

For more information on required packages and patches, visit the following site and search on "Live Upgrade requirements."

<http://wikis.sun.com>

## Live Upgrade fails when you try to upgrade to Solaris 10 9/10 or later

When you try to upgrade to Solaris 10 9/10 or later, Live Upgrade fails. The Live Upgrade command, `luupgrade`, requires the `-k auto-registration-file` option, which Symantec's `vxlustart` script does not support.

### To resolve this issue

- 1 Copy the `luupgrade` command that failed during the execution of the `vxlustart` command. For example:

```
# luupgrade -u -n dest.18864 \  
-s /net/lyptus-new/image/solaris10/update9_GA63521  
blocksminiroot filesystem is <lofs>  
Mounting miniroot at  
  </net/lyptus-new/image/solaris10/update9_GA/Solaris_10/Tools/Boot>  
ERROR: The auto registration file <> does not exist or incomplete.  
The auto registration file is mandatory for this upgrade.  
Use -k <filename> argument along with luupgrade command.  
cat: cannot open /tmp/.liveupgrade.11624.24307/.lmz.list  
ERROR: vxlustart: Failed: luupgrade -u -n dest.18864  
  -s/net/lyptus-new/image/solaris10/update9_GA
```

In this example, you would copy the **`luupgrade -u -n dest.18864 -s/net/lyptus-new/image/solaris10/update9_GA`** command.

- 2 Paste the command, and append the command with the `-k auto-registration-file` option. For example:

```
# luupgrade -u -n dest.18864 \  
-s /net/lyptus-new/image/solaris10/update9_GA -k /regfile  
  
/regfile is absolute path for the auto-registration file.
```

- 3 Mount the destination boot environment to `/altroot.5.10`. Do the following:
  - Display the source and destination boot environment. Enter:

```
# lustatus
```

- Mount the boot environment. Enter:

```
# luumount destination_boot_environment /altroot.5.10
```

- 4 After `luupgrade` completes, install the Storage Foundation packages on the alternate root path.

If you are upgrading from Solaris 2.9 to 2.10, do the following in the order presented:

- Remove the currently installed Storage Foundation packages. Enter:

```
# uninstallsf -rootpath /altroot.5.10
```

- Upgrade Storage Foundation to 5.1 SP1. Enter:

```
# installsf -rootpath /altroot.5.10
```

- 5 Activate the destination boot environment. Do the following in the order presented:

- Display the source and destination boot environment. Enter:

```
# lustatus
```

- Unmount the source and destination boot environment alternate root path. Enter:

```
# luumount destination_boot_environment
```

- Activate the destination boot environment. Enter:

```
# luactivate
```

- 6 If the system was encapsulated, manually encapsulate the destination boot environment after it is booted.

## During Live Upgrade, installer displays incorrect message about VRTSaa package removal

If you use Live Upgrade to upgrade Storage Foundation 5.0MP1 to Storage Foundation 5.1 SP1, the installer may display a message that the VRTSaa package failed to uninstall.

### Workaround:

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

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

For example, run the following command

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

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

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

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

For example, run the following command

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

## Veritas Storage Foundation known issues

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

### Some dbed DST commands do not work correctly in non-POSIX locales (2138030)

Some dbed DST commands do not work correctly in non-POSIX locale settings.

**Workaround:** Set the environment variable `LANG=C` systemwide in the `/etc/profile` file.

### Adding a node fails when using the Web-based installer (2173672)

When you add a node using the Web-based installer you cannot proceed beyond starting GAB on new node if the cluster uses secure CPS.

### 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.

## Boot fails after installing or removing Storage Foundation packages from a Solaris 9 system to a remote Solaris 10 system (1747640)

The following issue occurs if you install or remove a Storage Foundation package or patch from a Sparc Solaris 9 system to a remote Solaris 10 system, using the `-R rootpath` option of the `pkgadd`, `patchadd`, `pkgrm` or `patchrm` commands.

Generally, when you install or remove a Storage Foundation package on a Solaris 10 system, the package scripts update the boot archive. However if the local system is Solaris 9 and the remote system is Solaris 10, the scripts fail to update the boot archive on the Solaris 10 system.

---

**Note:** The boot archive is synchronized correctly when you upgrade Storage Foundation using Solaris Live Upgrade.

---

**Workaround:** The workaround is to manually clear the boot archive when you boot the alternate. The SUN boot process detects that the boot archive is out sync and displays instructions for how to correct the situation.

For example:

WARNING: The following files in / differ from the boot archive:

```
stale //kernel/drv/sparcv9/vxportal
stale //kernel/drv/vxportal.conf
stale //kernel/fs/sparcv9/vxfs
...
new   /kernel/drv/vxlo.SunOS_5.10
new   /kernel/drv/vxlo.conf
changed /kernel/drv/vxspec.SunOS_5.9
changed /kernel/drv/vxspec.conf
```

The recommended action is to reboot to the failsafe archive to correct the above inconsistency. To accomplish this, on a GRUB-based platform, reboot and select the "Solaris failsafe" option from the boot menu. On an OBP-based platform, reboot then type "boot -F failsafe". Then follow the prompts to update the boot archive. Alternately, to continue booting at your own risk, you may clear the service by running: "svcadm clear system/boot-archive"

## 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. Oracle 11gR2 release may work on a pure IPv6 enviroment, but it has not been tested or released yet.

## Sybase ASE version 15.0.3 causes segmentation fault on some Solaris version (1819595)

Sybase ASE 15.0.3 produces segmentation fault on Solaris SPARC 10 Update 6 in a pure IPv6 environment. However, Sybase ASE 15.0.3 works on Solaris SPARC 10 Update 5.

When running Sybase ASE 15.0.3 GA on a pure IPv6 environment on Solaris SPARC 10 Update 6, you may receive a segmentation fault message. For example:

```
Building Adaptive Server 'CDGV240AIPV6':
Writing entry into directory services...
Directory services entry complete.
Building master device...
Segmentation Fault - core dumped
Task failed
Server 'CDGV240AIPV6' was not created.
```

This is a Sybase known issue. You should use Sybase Adaptive Server Enterprise Suite version 15.0.3 ESD 1 that supports Solaris 10 Update 6 or later. For details, refer to the Sybase Product Download Center regarding ESD 1.

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

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

#### Workaround:

##### To resolve this known issue

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

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

### 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/rac11g1/.DB_NAME
(No such file or directory).
SFORA vxreptadm ERROR V-81-8847 Cannot get filename from sid
for 'rac11g1', rc=-1.
SFORA vxreptadm ERROR V-81-6550 Could not connect to repository
database.
VxVM vxdg ERROR V-5-1-582 Disk group SNAP_rac11dg1: No such disk
group SFORA
vxsnapadm ERROR V-81-5623 Could not get CVM information for
SNAP_rac11dg1.
SFORA dbed_vmclonedb ERROR V-81-5578 Import SNAP_rac11dg1 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 SFM Web console (1850100)

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

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

**Workaround:** Reinstall is required for SFM 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 (1880622)

A volume's placement class tags are not visible in the Veritas Enterprise Administrator (VEA) GUI when you are creating a dynamic storage tiering (DST) 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.

## Issues when removing the VxVM 5.1SP1 patch

If you back out the VxVM 5.1SP1 patch, note the following issues:

- VxVM 5.1SP1 introduces a new disk group version. If you upgrade disk groups or create new disk groups with the new disk group version, VxVM 5.1 cannot access these disk groups if you back out the 5.1SP1 patch.
- When you back out the VxVM 5.1SP1 patch, VxVM recreates the `/etc/vx/volboot` file with the default contents. If the existing VxVM 5.1 configuration had a modified `/etc/vx/volboot` file, these modifications are lost when you back out the patch.
- The VxVM 5.1SP1 patch changes certain files in the `/etc/vx` directory, such as the `dmppolicy.info` file. After backing out the patch, the VxVM 5.1 may have issues in parsing these files.

### Workaround:

Do not upgrade disk groups to version 160 until you are sure you do not need to back out the patch.

## 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
```

### **vxdisk -f init can overwrite some of the public region contents (1190117)**

If a disk was initialized by a previous VxVM version or defined with a smaller private region than the new default of 32 MB, then the public region data will be overridden.

#### **Workaround:**

Specify explicitly the length of privoffset, puboffset, publen, and privlen while initializing the disk.

### **The relayout operation fails when there are too many disks in the disk group. (2015135)**

The attempted relayout operation on a disk group containing approximately more than 300 LUNs or disks may fail with the following error:

```
Cannot setup space
```

### **Enabling tagmeta=on on a disk group causes delay in disk group split/join operations (2105547)**

When vxvg set tagmeta=on is run on a diskgroup, multiple iterations of disk group split/join operations on the disk group causes huge delay in split/join operations.

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

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

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

### **Co-existence check might fail for CDS disks**

In Veritas Volume Manager (VxVM) 5.1 SP1, VxVM introduces the ability to support Cross-platform Data Sharing (CDS) on disks larger than 1 TB. VxVM uses the SUN VTOC Table to initialize the cdsdisk layout on devices up to 1 TB. VxVM uses the GUID Partition Table (GPT) to initialize the cdsdisk layout on devices larger than 1 TB.

In layouts where SUN VTOC Table is used for initialization (typically, when the disk size has never exceeded 1 TB), the AIX co-existence label can be found at sector 7 and VxVM ID block (also known as HP co-existence label) can be found at sector 16.

In layouts where GPT is used for initialization (typically, when the disk size is currently greater than or had earlier exceeded 1 TB), the AIX co-existence label is placed at sector 55 and VxVM ID block (also known as HP co-existence label) is placed at sector 64. Consequently, AIX utilities would not be able to recognize a cdsdisk initialized using GPT to be a valid VxVM disk. Symantec is working with IBM and third party OEMs to enhance the co-existence check in these utilities.

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

### **Removing a volume from a thin LUN in an alternate boot disk group triggers disk reclamation (2080609)**

If you remove a volume from an alternate boot disk group on a thin LUN, this operation triggers thin reclamation, which may remove information required for the disk to be bootable. This issue does not affect the current boot disk, since VxVM avoids performing a reclaim on disks under the bootdg.

**Workaround:** If you remove a volume or plex from an alternate boot disk group with the `vxedit` command, specify the `-n` option to avoid triggering thin reclamation. For example:

```
# vxedit -g diskgroup -rfn rm volumename
```

### **I/O fails on some paths after array connectivity is restored, due to high restore daemon interval (2091619)**

If a path loses connectivity to the array, the path is marked with the `NODE_SUSPECT` flag. After the connectivity is restored, the restore daemon detects that the path is restored when the restore daemon probes the paths. The restore daemon clears the `NODE_SUSPECT` flag and makes the path available for I/O. The restore daemon probes the paths at the interval set with the tunable parameter `dmp_restore_interval`. If you set the `dmp_restore_interval` parameter to a high value, the paths are not available for I/O until the next interval.

### **Suppressing the primary path of an encapsulated SAN boot disk from Veritas Volume Manager causes the system reboot to fail (1933631)**

If you suppress the primary path of an array from VxVM control and then reboot the system, the system boot fails.

If you have an encapsulated SAN boot device with multiple primary paths, the issue occurs when you suppress the first primary path. When you configure a SAN boot device, the primary path is set as a boot device. In general, the first path of the SAN boot device corresponds to the first configured path during SAN boot. Even if another primary path is configured as a boot device, suppressing the first device from VxVM causes the boot to fail.

**Workaround:**

When the boot device is suppressed from VxVM, change the OS boot device sequencing accordingly.

For Solaris SPARC system, use the `eeeprom boot-device` command to set the boot device sequencing.

For Solaris x86-64 systems, use the `eeeprom bootpath` command to set the boot device sequencing.

## **Node is not able to join the cluster with high I/O load on the array with Veritas Cluster Server (2124595)**

When the array has a high I/O load, the DMP database exchange between master node and joining node takes a longer time. This situation results in VCS resource online timeout, and then VCS stops the join operation.

**Workaround:**

Increase the online timeout value for the HA resource to 600 seconds. The default value is 300 seconds.

**To set the OnlineTimeout attribute for the HA resource type CVMCluster**

- 1 Make the VCS configuration to be read/write:

```
# haconf -makerw
```

- 2 Change the OnlineTimeout attribute value of CVMCluster:

```
# hatype -modify CVMCluster OnlineTimeout 600
```

- 3 Display the current value of OnlineTimeout attribute of CVMCluster:

```
# hatype -display CVMCluster -attribute OnlineTimeout
```

- 4 Save and close the VCS configuration:

```
# haconf -dump -makero
```



## Changes in enclosure attributes are not persistent after an upgrade to VxVM 5.1 SP1 (2082414)

The Veritas Volume Manager (VxVM) 5.1 SP1 includes several array names that differ from the array names in previous releases. Therefore, if you upgrade from a previous release to VxVM 5.1 SP1, changes in the enclosure attributes may not remain persistent. Any enclosure attribute set for these arrays may be reset to the default value after an upgrade to VxVM 5.1 SP1. Manually reconfigure the enclosure attributes to resolve the issue.

[Table 1-11](#) shows the Hitachi arrays that have new array names.

**Table 1-11** Hitachi arrays with new array names

Previous name	New name
TagmaStore-USP	Hitachi_USP
TagmaStore-NSC	Hitachi_NSC
TagmaStoreUSPV	Hitachi_USP-V
TagmaStoreUSPVM	Hitachi_USP-VM
<New Addition>	Hitachi_R700
Hitachi AMS2300 Series arrays	New array names are based on the Model Number 8x. For example, AMS_100, AMS_2100, AMS_2300, AMS_2500, etc.

In addition, the Array Support Library (ASL) for the enclosures XIV and 3PAR now converts the cabinet serial number that is reported from Hex to Decimal, to correspond with the value shown on the GUI. The persistence of the enclosure name is achieved with the `/etc/vx/array.info` file, which stores the mapping between cabinet serial number and array name. Because the cabinet serial number has changed, any enclosure attribute set for these arrays may be reset to the default value after an upgrade to VxVM 5.1 SP1. Manually reconfigure the enclosure attributes to resolve the issue.

The cabinet serial numbers are changed for the following enclosures:

- IBM XIV Series arrays
- 3PAR arrays

## Veritas File System known issues

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

## VxFS read ahead can cause stalled I/O on all write operations (1965647)

Changing the `read_ahead` parameter can lead to frozen I/O. Under heavy load, the system can take several minutes to recover from this state.

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

## Shrinking a file system that is larger than 1 TB takes a long time (2097673)

Shrinking a file system shrink via either the `fsadm` command or `vxresize` command can take a long time to complete in some cases, such as if the shrink size is large and some large extent of a file is overlapping with the area to be shrunk.

**Workaround:** One possible workaround is to use the `vxtunefs` command and set `write_pref_io` and `write_nstream` to high values, such that `write_pref_io` multiplied by `write_nstream` is around 8 MB.

## Storage Checkpoints can exceed the quota limit (2102201)

Under some circumstances, Storage Checkpoints can exceed the quota limit set by the `fsckptadm setquotalimit` command. This issue can arise if all of the following conditions are met:

- The Storage Checkpoint quota has been enabled.
- The Storage Checkpoint quota is not exceeded.
- A file content modification operation, including removing a file, needs to push some or all blocks of the file to the Storage Checkpoint.
- Number of blocks that need to be pushed to the Storage Checkpoint is enough to exceed Storage Checkpoint quota hard limit.

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

## vxfsconvert can only convert file systems that are less than 1 TB (2108929)

The `vxfsconvert` command can only convert file systems that are less than 1 TB. If the file system is greater than 1 TB, the `vxfsconvert` command fails with the "Out of Buffer cache" error.

## Running `fsppadm enforce` twice results in the "Too many open files" error (2118911)

If you run the `fsppadm enforce` command twice, with the second instantiation running before the first instantiation completes, one of the instantiations displays the "Too many open files" error. This error only displays if the maximum open file limit on the system is too low.

**Workaround:** Set the maximum open file limit with the `ulimit` command to higher than the current limit.

## Truncate operation of a file with a shared extent in the presence of a Storage Checkpoint containing FileSnaps results in an error (2149659)

This issue occurs when Storage Checkpoints are created in the presence of FileSnaps or space optimized copies, and one of the following conditions is also true:

- In certain cases, if a FileSnap is truncated in the presence of a Storage Checkpoint, the `i_nblocks` field of the inode, which tracks the total number of blocks used by the file, can be miscalculated, resulting in inode being marked bad on the disk.
- In certain cases, when more than one FileSnap is truncated simultaneously in the presence of a Storage Checkpoint, the file system can end up in a deadlock state.

This issue causes the following error to display:

```
f:xted_validate_cuttran:10 or f:vx_te_mklbtran:1b
```

**Workaround:** In the first case, run a full `fsck` to correct the inode. In the second case, restart the node that is mounting the file system that has this deadlock.

## When online migration is in progress, `df` command with no mount point or device argument fails with error 1 (2162822)

When online migration is in progress, the `df` command with no mount point or device argument fails with error 1.

The `df` command also gives an error for every file system undergoing migration. The error is similar to the following example:

```
df: cannot statvfs /mntpt/lost+found/file_system:  
No such file or directory
```

**Workaround:** To avoid the error, specify a mount point or device.

## Tunable not enabling the lazy copy-on-write optimization for FileSnaps (2164568)

The lazy copy-on-write tunable does not enable the lazy copy-on-write optimization for FileSnaps.

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

## vxfilesnap fails to create the snapshot file when invoked with the following parameters: vxfilesnap source\_file target\_dir (2164744)

The `vxfilesnap` command fails to create the snapshot file when invoked with the following parameters:

```
# vxfilesnap source_file target_dir
```

Invoking the `vxfilesnap` command in this manner is supposed to create the snapshot with the same filename as the source file inside of the target directory.

**Workaround:** You must specify the source file name along with the target directory, as follows:

```
# vxfilesnap source_file target_dir/source_file
```

## cfsmount with the seconly option fails on Solaris 10 SPARC (2104499)

On Solaris 10 SPARC, the `cfsmount` command fails if you specify the `seconly` option.

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

## Panic due to null pointer de-reference in vx\_unlockmap() (2059611)

A null pointer dereference in the `vx_unlockmap()` call can cause a panic. A fix for this issue will be released in a future patch.

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

## Installing the VRTSvxfs 5.1 RP2 package on non-global zones can fail (2086894)

Installing the VRTSvxfs 5.1 RP2 patch on non-global zones can fail with the following error messages:

```
package VRTSvxfs failed to install - interrupted:
pkgadd: ERROR: duplicate pathname zone_path/root/etc/fs/vxfs/qloadadmin
pkgadd: ERROR: duplicate pathname zone_path/root/kernel/drv/vxportal.conf
pkgadd: ERROR: duplicate pathname zone_path/root/etc/vx/cdslimitstab
pkgadd: ERROR: duplicate pathname
    zone_path/root/opt/VRTSvxfs/etc/access_age_based.xml
pkgadd: ERROR: duplicate pathname
    zone_path/root/opt/VRTSvxfs/etc/access_age_based_2tier.xml
...
```

**Workaround:** The following procedure installs the VRTSvxfs 5.1 RP2 package on a non-global zone.

#### To install VRTSvxfs 5.1 RP2 on a non-global zone

- 1 Remove the VRTSvxfs 5.1 RP1 package.
- 2 Reinstall the VRTSvxfs 5.1 package.
- 3 Install the VRTSvxfs 5.1 RP2 package.

### Possible error during an upgrade and when there is a local zone located on a VxFS file system(1675714)

During an upgrade and when there is local zone located on VxFS, you may receive an error message similar to the following:

```
Storage Foundation Uninstall did not complete successfully
VRTSvxvm package failed to uninstall on pilotv240-1
```

**Workaround:** You must reboot after the upgrade completes.

### Possible write performance degradation with VxFS local mounts (1837394)

Some applications that allocate large files without explicit preallocation may exhibit reduced performance with the VxFS 5.1 release and later releases compared to the VxFS 5.0 MP3 release due to a change in the default setting for the tunable `max_seqio_extent_size`. One such application is DB2. Hosting DB2 data on a single file system extent maximizes the potential for sequential pre-fetch processing. When DB2 detects an application performing sequential reads against database data, DB2 begins to read ahead and pre-stage data in cache using efficient sequential physical I/Os. If a file contains many extents, then pre-fetch processing is continually interrupted, nullifying the benefits. A larger `max_seqio_extent_size` value reduces the number of extents for DB2 data when adding a data file into a tablespace without explicit preallocation.

The `max_seqio_extent_size` tunable controls the amount of space that VxFS automatically preallocates to files that are allocated by sequential writes. Prior to the 5.0 MP3 release, the default setting for this tunable was 2048 file system blocks. In the 5.0 MP3 release, the default was changed to the number of file system blocks equaling 1 GB. In the 5.1 release, the default value was restored to the original 2048 blocks.

The default value of `max_seqio_extent_size` was increased in 5.0 MP3 to increase the chance that VxFS will allocate the space for large files contiguously, which tends to reduce fragmentation and increase application performance. There are two separate benefits to having a larger `max_seqio_extent_size` value:

- Initial allocation of the file is faster, since VxFS can allocate the file in larger chunks, which is more efficient.
- Later application access to the file is also faster, since accessing less fragmented files is also more efficient.

In the 5.1 release, the default value was changed back to its earlier setting because the larger 5.0 MP3 value can lead to applications experiencing "no space left on device" (ENOSPC) errors if the file system is close to being full and all remaining space is preallocated to files. VxFS attempts to reclaim any unused preallocated space if the space is needed to satisfy other allocation requests, but the current implementation can fail to reclaim such space in some situations.

**Workaround:** If your workload has lower performance with the VxFS 5.1 release and you believe that the above change could be the reason, you can use the `vxtunefs` command to increase this tunable to see if performance improves.

#### To restore the benefits of the higher tunable value

- 1 Increase the tunable back to the 5.0 MP3 value, which is 1 GB divided by the file system block size.  
  
Increasing this tunable also increases the chance that an application may get a spurious ENOSPC error as described above, so change this tunable only for file systems that have plenty of free space.
- 2 Shut down any applications that are accessing any large files that were created using the smaller tunable setting.
- 3 Copy those large files to new files, which will be allocated using the higher tunable setting.
- 4 Rename the new files back to the original names.
- 5 Restart any applications that were shut down earlier.

## Veritas Volume Replicator known issues

This section describes the known issues in this release of Veritas Volume Replicator (VVR).

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

The `vradmin syncvol` command does not work with the compressed form of IPv6 addresses. In IPv6 environments, if you run the `vradmin syncvol` command and identify the target host using compressed form of the IPv6 address, the command fails with following error message:

```
# vradmin -s -full syncvol vol1 fe80::221:5eff:fe49:ad10:dg1:vol1
VxVM VVR vradmin ERROR V-5-52-420 Incorrect format for syncvol.
```

Also, if you run the `vradmin addsec` command and you specify the Secondary host using the compressed IPv6 address, the `vradmin syncvol` command also fails – even if you specify the target as `hostname`.

**Workaround:** When you use the `vradmin addsec` and `vradmin syncvol` commands, do not specify compressed IPv6 addresses; instead, use hostnames.

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

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

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

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

**Workaround:**

**To resolve this issue**

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

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

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

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

```
RVGPrimary:RVGPrimary:online:Diskgroup bunkerdgrname 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.

## Interrupting the `vradmin syncvol` command may leave volumes open (2063307)

Interrupting the `vradmin syncvol` command may leave volumes on the Secondary site in an open state.

**Workaround:** On the Secondary site, restart the `in.vxrsyncd` daemon. Enter the following:

```
# /etc/init.d/vxrsyncd.sh stop

# /etc/init.d/vxrsyncd.sh start
```



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

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

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

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

### Issue 1:

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

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

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

### Issue 2:

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

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

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

**Workaround:** The following workarounds resolve these issues.

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

For example:

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

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

For example:

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

## Storage Foundation 5.0MP3 Rolling Patch 2 required for replication between 5.0 MP3 and 5.1 SP1 (1800600)

In order to replicate between Primary sites running Storage Foundation 5.0 MP3 and Secondary sites running Storage Foundation 5.1 SP1, or vice versa, you must install the Storage Foundation 5.0MP3 Rolling Patch 2 on the nodes using 5.0MP3. This patch resolves several outstanding issues for replicating between versions.

## In an IPv6-only environment RVG, data volumes or SRL names cannot contain a colon

Issue: After upgrading VVR to an IPv6-only environment in 5.1 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 an SFCFS or 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:

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

## While `vradmin changeip` is running, `vradmind` may temporarily lose heart beats (2162625)

This issue occurs when you use the `vradmin changeip` command to change the host name or IP address set in the Primary and Secondary RLINKs. While the `vradmin changeip` command runs, `vradmind` may temporarily lose heart beats, and the command terminates with an error message.

**Workaround:**

To resolve this issue

- 1 Depending on the application I/O workload, 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` to put the new `IPM_HEARTBEAT_TIMEOUT` value into affect. Enter the following:

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

## If using VEA to create a replicated data set fails, messages display corrupt strings in the Japanese locale (1726499, 1377599)

When using VEA to create a replicated data set, because the volumes do not have a DCM log on all nodes, the message window displays corrupt strings and unlocalized error messages.

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

## vxassist relayout removes the DCM (2162522)

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
```

## 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.

## Cannot relayout data volumes in an RVG from concat to striped-mirror (2162537)

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.

## Live Upgrade fails when you try to upgrade to Solaris 10 9/10 or later

When you try to upgrade to Solaris 10 9/10 or later, Live Upgrade fails. The Live Upgrade command, `luupgrade`, requires the `-k auto-registration-file` option, which Symantec's `vxlustart` script does not support.

### To resolve this issue

- 1 Copy the `luupgrade` command that failed during the execution of the `vxlustart` command. For example:

```
# luupgrade -u -n dest.18864 \  
-s /net/lyptus-new/image/solaris10/update9_GA63521  
blocksminiroot filesystem is <lofs>  
Mounting miniroot at  
  </net/lyptus-new/image/solaris10/update9_GA/Solaris_10/Tools/Boot>  
ERROR: The auto registration file <> does not exist or incomplete.  
The auto registration file is mandatory for this upgrade.  
Use -k <filename> argument along with luupgrade command.  
cat: cannot open /tmp/.liveupgrade.11624.24307/.lmz.list  
ERROR: vxlustart: Failed: luupgrade -u -n dest.18864  
  -s/net/lyptus-new/image/solaris10/update9_GA
```

In this example, you would copy the `luupgrade -u -n dest.18864 -s/net/lyptus-new/image/solaris10/update9_GA` command.

- 2 Paste the command, and append the command with the `-k auto-registration-file` option. For example:

```
# luupgrade -u -n dest.18864 \  
-s /net/lyptus-new/image/solaris10/update9_GA -k /regfile  
  
/regfile is absolute path for the auto-registration file.
```

- 3 Mount the destination boot environment to `/altroot.5.10`. Do the following:

- Display the source and destination boot environment. Enter:

```
# lustatus
```

- Mount the boot environment. Enter:

```
# lumount destination_boot_environment /altroot.5.1
```

- 4 After `luupgrade` completes and after mounting alternate boot environment, upgrade the Storage Foundation packages on the alternate root path using the following command:

```
# installsf -rootpath /altroot.5.10 -upgrade
```

If you are upgrading from Solaris 9 to 10, do the following in the order presented:

- Remove the currently installed Storage Foundation packages. Enter:

```
# uninstallsf -rootpath /altroot.5.10
```

- Upgrade Storage Foundation to 5.1 SP1. Enter:

```
# installsf -rootpath /altroot.5.1
```

- 5 Activate the destination boot environment. Do the following in the order presented:

- Display the source and destination boot environment. Enter:

```
# lustatus
```

- Unmount the source and destination boot environment alternate root path. Enter:

```
# luumount destination_boot_environment
```

- Activate the destination boot environment. Enter:

```
# luactivate
```

- 6 If the system was encapsulated, manually encapsulate the destination boot environment after it is booted.

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

The following are known issues in this release of Veritas Storage Foundation products.

## Upgrading Veritas Storage Foundation for Databases (SFDB) tools from 5.0.x to 5.1SP1 (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 5.1SP1. The error message is:

When upgrading from Storage Foundation version 5.0 to Storage Foundation 5.1SP1 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`.

## Database fails over during Flashsnap operations (1469310)

In an Storage Foundation environment, if the database fails over during Flashsnap operations such as the `dbed_vmsnap -o resync` command and various error messages appear. This issue occurs because Flashsnap commands do not create a VCS resource for the SNAP disk group. As such, when the database fails over, only the primary disk group is moved to another node.

### Workaround

There is no workaround for this issue.

The error messages depend on the timing of the database failover. To fix the problem, you need to bring the FlashSnap state to `SNAP_READY`. Depending on the failure, you may have to use base VxVM commands to reattach mirrors. After mirrors are attached, you need to wait until the mirrors are in `SNAPDONE` state. Re-validate the snapplan again.

## Reattach command failure in a multiple disk group environment (1840672)

In a multiple disk group environment, if the snapshot operation fails then `dbed_vmsnap` fails to reattach all the volumes. This operation must be performed as root user.



## Workaround

In case the reattach operation fails, use the following steps to reattach the volumes.

### To reattach volumes in a multiple disk group environment if the snapshot operation fails

- 1 Join the snapshot disk groups to primary disk groups. The snapshot disk group name is a concatenation of “SNAPSHOT\_DG\_PREFIX” parameter value in snapplan and primary disk group name. Use the following command to join the disk groups:

```
# vxvg join snapshot_disk_group_name  
           primary_disk_group_name
```

- 2 Start all the volumes in primary disk group.

```
# vxvol -g primary_disk_group_name startall
```

- 3 Reattach the snapshot volumes with primary volumes. The snapshot volume names is a concatenation of “SNAPSHOT\_VOL\_PREFIX” parameter value in snapplan and primary volume name. Use the following command to reattach the volumes.

```
# vxsnap -g primary_disk_group_name reattach snapshot_volume_name  
source=primary_volume_name
```

Repeat this step for all the volumes.

## Clone command fails if archive entry is spread on multiple lines (1764885)

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.

## VCS agent for Oracle: Health check monitoring is not supported for Oracle database 11g R1 and 11g R2 (1985055)

Health check monitoring is not supported for Oracle database 11g R1 and 11g R2.

Workaround: Set `MonitorOption` attribute for Oracle resource to 0.

# Software limitations

This section covers the software limitations of this release.

See [“Documentation”](#) on page 79.

## Veritas Storage Foundation software limitations

There are no Veritas Storage Foundation software limitations in the 5.1 SP1 release.

## Veritas Volume Manager software limitations

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

### Converting a multi-pathed disk (2695660)

When converting a multi-pathed disk that is smaller than 1 TB from a VTOC label to an EFI label, you must issue the `format -e` command for each path. For example, if a node has two paths, `c1t2d0s2` and `c2tsd0s2`, you must run the `format -e` command on each of the two paths.

### DMP settings for NetApp storage attached environment

To minimize the path restoration window and maximize high availability in the NetApp storage attached environment, set the following DMP tunables:

Table 1-12

Parameter name	Definition	New value	Default value
<code>dmp_restore_interval</code>	DMP restore daemon cycle	60 seconds.	300 seconds.
<code>dmp_path_age</code>	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
```

## Dynamic LUN Expansion may fail on Solaris for EMC Clariion LUNs (2148851)

For EMC Clariion LUNs, if you perform Dynamic LUN Expansion operation using the `vxdisk resize` command while the I/O is in progress, the `vxdisk resize` command may fail with the following error:

```
VxVM vxdisk ERROR V-5-1-8643 Device device_name: resize failed:
New geometry makes partition unaligned
```

### Work-around:

To resolve the issue, perform the following steps.

#### To recover from the error

- 1 Stop the I/O.
- 2 Reboot the system with the following command:

```
# reboot -- r
```

- 3 Retry the operation.

## Veritas File System software limitations

The following are software limitations in the 5.1 SP1 release of Veritas Storage Foundation.

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

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

## Veritas Volume Replicator software limitations

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

### Replication in a shared environment

Currently, replication support is limited to 4-node cluster applications.

### IPv6 software limitations

VVR does not support the following Internet Protocol configurations:

- A replication configuration from an IPv4-only node to an IPv6-only node and from an IPv6-only node to an IPv4-only node is not supported, because the IPv6-only node has no IPv4 address configured on it and therefore VVR cannot establish communication between the two nodes.
- A replication configuration in which an IPv4 address is specified for the `local_host` attribute of a primary RLINK and an IPv6 address is specified for the `remote_host` attribute of the same RLINK.
- A replication configuration in which an IPv6 address is specified for the `local_host` attribute of a primary RLINK and an IPv4 address is specified for the `remote_host` attribute of the same RLINK.
- IPv6 is not supported in a CVM and VVR cluster where some nodes in the cluster are IPv4-only and other nodes in the same cluster are IPv6-only, or all nodes of a cluster are IPv4-only and all nodes of a remote cluster are IPv6-only.
- VVR does not support Edge and NAT-PT routers that facilitate IPv4 and IPv6 address translation.

### VVR support for replicating across Storage Foundation versions

VVR supports replication between Storage Foundation 5.1SP1 and the prior major releases of Storage Foundation (5.0 MP3 and 5.1). Replication between versions is supported for disk group versions 140, 150, and 160 only. Both the Primary and Secondary hosts must be using a supported disk group version.

## Veritas Storage Foundation for Databases tools software limitations

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

### Oracle Data Guard in an Oracle RAC environment

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

## Upgrading if using Oracle 11.1.0.6

If you are running Oracle version 11.1.0.6 and upgrading a Storage Foundation product to 5.1SP1: upgrade the Oracle binaries and database to version 11.1.0.7 before moving to SP1.

## Veritas Storage Foundation and High Availability features not supported on Solaris x64

The following Storage Foundation and High Availability features that are supported on Solaris SPARC and not supported on Solaris x64:

■

## Documentation errata

The following sections, if present, cover additions or corrections for Document version: 5.1SP1.2 of the product documentation. These additions or corrections may be included in later versions of the product documentation that can be downloaded from the Symantec Support website and the Symantec Operations Readiness Tools (SORT).

See the corresponding Release Notes for documentation errata related to that component or product.

See [“Documentation”](#) on page 79.

See [“About Symantec Operations Readiness Tools”](#) on page 8.

## Veritas Storage Foundation and High Availability Virtualization Guide

The following errata applies to the *Veritas Storage Foundation and High Availability Virtualization Guide*.

### **"To enable Oracle Disk Manager file access from non-global zones with Veritas File System" procedure is missing some steps**

This procedure is in the "Veritas extension for Oracle Disk Manager" section of Chapter 2 "Storage Foundation and High Availability Solutions support for Solaris Zones." The procedure is missing the following steps:

4 Enable the `vxfslidlic` service. To do so, use the following commands in the Solaris global zone:

```
# mkdir /zones/zone_name/root/var/svc/manifest/system/vxfs
# cp /var/svc/manifest/system/vxfs/vxfsldlic.xml \
/zones/zone_name/root/var/svc/manifest/system/vxfs
```

5 If you do not inherit `/lib` in the local zone, enter the following command:

```
# cp /lib/svc/method/vxfsldlic /zones/zone_name/root/lib/svc/method
```

6. Enter the following commands in the Solaris local zone:

```
# svccfg import /var/svc/manifest/system/vxfs/vxfsldlic.xml
# svcadm enable vxfsldlic
```

7 Enable `vxodm` service:

```
# svcadm enable vxodm
```

## Veritas Volume Replicator Administrator's Guide

*Topic:* Migrating to IPv6 when VCS global clustering and VVR agents are not configured

*Issue:* The procedure, "To migrate VVR from the IPv4 network to the IPv6 network," has missing information in step 6. In the updated contents of the `main.cf` file, add the following statement to the end of the `NIC nicres1` block:

```
Protocol = IPv6
```

*Topic:* Migrating to IPv6 when VCS global clustering and VVR agents are configured

*Issues:* The procedure, "To migrate VVR to the IPv6 network," requires the following additions:

Step 4                    In the example of modifying VCS global clustering attributes, add the following command after `hares -modify gconic Device bge1`:

```
# hares -modify gconic Device Protocol IPv6
```

Step 6                    Near the bottom of the VCS `main.cf` file, add the following statement to the end of the `NIC gconic` block:

```
Protocol = IPv6
```

- Step 7            In the list of commands to modify the IP and NIC attributes of the service group, add the following command after `hares -modify nic Enabled 1`:
- ```
# hares -modify gconic Device Protocol IPv6
```
- Step 9            In the example service group content, add the following statement to the end of the NIC `nic` block:
- ```
Protocol = IPv6
```
- Step 11           To bring down the network interface, enter the following command:
- ```
# ifconfig IPv4_interface down
```

## Documentation

Product guides are available on the documentation disc in PDF formats. Symantec recommends copying pertinent information, such as installation guides and release notes, from the disc to your system's `/opt/VRTS/docs` directory for reference.

### Documentation set

[Table 1-13](#) lists the documentation for Veritas Storage Foundation.

**Table 1-13**      Veritas Storage Foundation documentation

| Document title                                                                              | File name                               |
|---------------------------------------------------------------------------------------------|-----------------------------------------|
| <i>Veritas Storage Foundation Release Notes</i>                                             | <code>sf_notes_51sp1_sol.pdf</code>     |
| <i>Veritas Storage Foundation and High Availability Installation Guide</i>                  | <code>sf_install_51sp1_sol.pdf</code>   |
| <i>Veritas Storage Foundation: Storage and Availability Management for Oracle Databases</i> | <code>sf_adv_ora_51sp1_sol.pdf</code>   |
| <i>Veritas Storage Foundation Advanced Features Administrator's Guide</i>                   | <code>sf_adv_admin_51sp1_sol.pdf</code> |

[Table 1-14](#) lists the documentation for Veritas Volume Manager and Veritas File System.

**Table 1-14** Veritas Volume Manager and Veritas File System documentation

| Document title                                          | File name                 |
|---------------------------------------------------------|---------------------------|
| <i>Veritas Volume Manager Administrator's Guide</i>     | vxvm_admin_51sp1_sol.pdf  |
| <i>Veritas Volume Manager Troubleshooting Guide</i>     | vxvm_tshoot_51sp1_sol.pdf |
| <i>Veritas File System Administrator's Guide</i>        | vxfs_admin_51sp1_sol.pdf  |
| <i>Veritas File System Programmer's Reference Guide</i> | vxfs_ref_51sp1_sol.pdf    |

[Table 1-15](#) lists the documentation for Veritas Volume Replicator.

**Table 1-15** Veritas Volume Replicator documentation

| Document title                                             | File name                       |
|------------------------------------------------------------|---------------------------------|
| <i>Veritas Volume Replicator Administrator's Guide</i>     | vvr_admin_51sp1_sol.pdf         |
| <i>Veritas Volume Replicator Planning and Tuning Guide</i> | vvr_planning_51sp1_sol.pdf      |
| <i>Veritas Volume Replicator Advisor User's Guide</i>      | vvr_advisor_users_51sp1_sol.pdf |

[Table 1-16](#) lists the documentation for Symantec Product Authentication Service (AT).

**Table 1-16** Symantec Product Authentication Service documentation

| Title                                                                | File name      |
|----------------------------------------------------------------------|----------------|
| <i>Symantec Product Authentication Service Release Notes</i>         | vxat_notes.pdf |
| <i>Symantec Product Authentication Service Administrator's Guide</i> | vxat_admin.pdf |

## 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.

