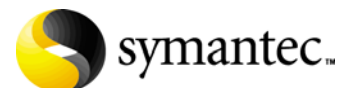


Veritas Storage Foundation™ and High Availability Solutions Read This First

Linux

5.0 Maintenance Pack 3 Rolling Patch 3



Veritas Storage Foundation and High Availability Solutions Read This First

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Storage Foundation and High Availability Solutions 5.0 Maintenance Pack 3 Rolling Pack 3

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The *Veritas Storage Foundation 5.0 Release Notes* can be viewed at the following URL:

<http://entsupport.symantec.com/docs/283859>

The *Veritas Cluster Server 5.0 Release Notes* can be viewed at the following URL:
<http://entsupport.symantec.com/docs/283850>

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Veritas Cluster Server is a licensed product. See the *Veritas Cluster Server Installation Guide* for license installation instructions.

Technical support

For technical assistance, visit

http://www.symantec.com/enterprise/support/assistance_care.jsp and select phone or email support. Use the Knowledge Base search feature to access resources such as TechNotes, product alerts, software downloads, hardware compatibility lists, and our customer email notification service.

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Veritas Storage Foundation and High Availability Solutions Read This First

This document provides release information about the products in the Veritas Storage Foundation and High Availability 5.0 Maintenance Pack 3 (MP3) Rolling Patch 3 (RP3) Linux release.

For the latest information on updates, patches, and known issues regarding this release, see the following TechNote on the Symantec Technical Support website:

<http://entsupport.symantec.com/docs/281993>

Review this entire document before installing and upgrading your Veritas Storage Foundation and High Availability product.

For further details, depending on the product for which you want to install this Rolling Patch, refer to one of the following Release Notes documents:

- n *Veritas Cluster Server 5.0 MP3 Release Notes*
- n *Veritas Storage Foundation 5.0 MP3 Release Notes*

Note: The Veritas Storage Foundation Cluster File System 5.0 MP3 Release Notes information is located in the *Veritas Storage Foundation 5.0 MP3 Release Notes*.

System requirements

This section describes the system requirements for this release.

Supported operating systems

The 5.0 MP3 RP3 release operates on the architectures and operating systems shown below:

- n Red Hat Enterprise Linux 4 (RHEL 4) with Update 3 (2.6.9-34 kernel) or later on AMD Opteron or Intel Xeon EM64T (x86_64).
- n Red Hat Enterprise Linux 5 (RHEL 5) with Update 1 (2.6.18-53.el5 kernel) or later on AMD Opteron or Intel Xeon EM64T (x86_64)
- n Oracle Enterprise Linux (OEL) 4.4 or later on AMD Opteron or Intel Xeon EM64T (x86_64)
- n Oracle Enterprise Linux (OEL) 5.1 or later on AMD Opteron or Intel Xeon EM64T (x86_64)
- n SuSE Linux Enterprise Server 9 (SLES 9) with SP3 (2.6.5-7.244 kernel or later) or SP4 (2.6.5-7.308 kernel or later) on AMD Opteron or Intel Xeon EM64T (x86_64)
- n SuSE Linux Enterprise Server 10 (SLES 10) with SP1 (2.6.16.46-0.12 kernel or later) or SP2 (2.6.16.60-0.21 kernel or later) on AMD Opteron or Intel Xeon EM64T (x86_64)

Note: Storage Foundation for Oracle RAC (SF Oracle RAC) is supported on the following operating systems:

- RHEL 4 on Linux 5.0 and 5.0 MP1
- SLES 9 on Linux 5.0 and 5.0 MP1

Storage Foundation Cluster File System for Oracle RAC replaces SF Oracle RAC from Linux 5.0 MP2 or later.

SF Oracle RAC does not support the following operating systems:

- RHEL 5
- OEL 5
- SLES 10

Storage Foundation for DB2 does not support OEL 4 or OEL 5.

Note: Veritas Cluster Server also supports the above mentioned operating systems on 32 bit (x86) architecture.

Before you install and upgrade VCS you must verify that the following RPMs are installed on the node. VCS will support any updates made to the following RPMs, provided it maintains the ABI compatibility.

Table 1-1 Operating system and package requirements

Operating system	Required Packages
RHEL 4	compat-libgcc-296-2.96-132.7.2.i386.rpm compat-libstdc++-296-2.96-132.7.2.i386.rpm compat-libstdc++-33-3.2.3-47.3.i386.rpm glibc-2.3.4-2.41.i686.rpm libgcc-3.4.6-10.i386.rpm libstdc++-3.4.6-10.i386.rpm compat-libstdc++-33-3.2.3-47.3.x86_64.rpm glibc-2.3.4-2.41.x86_64.rpm glibc-common-2.3.4-2.41.x86_64.rpm libgcc-3.4.6-10.x86_64.rpm libstdc++-3.4.6-10.x86_64.rpm
RHEL 5	compat-libgcc-296-2.96-138.i386.rpm compat-libstdc++-33-3.2.3-61.i386.rpm compat-libstdc++-296-2.96-138.i386.rpm glibc-2.5-24.i686.rpm libgcc-4.1.2-42.el5.i386.rpm libstdc++-3.4.6-10.i386.rpm compat-libstdc++-33-3.2.3-61.x86_64.rpm glibc-2.5-24.x86_64.rpm glibc-common-2.5-24.x86_64.rpm libgcc-4.1.2-42.el5.x86_64.rpm libstdc++-3.4.6-10.x86_64.rpm

Table 1-1 Operating system and package requirements

Operating system	Required Packages
SLES 9	compat-32bit-9-200407011229.x86_64.rpm glibc-32bit-9-200710191304.x86_64.rpm compat-2004.7.1-1.2.x86_64.rpm glibc-2.3.3-98.94.x86_64.rpm libgcc-3.3.3-43.54.x86_64.rpm libstdc++-3.3.3-43.54.x86_64.rpm
SLES 10	compat-32bit-2006.1.25-11.2.x86_64.rpm glibc-32bit-2.4-31.54.x86_64.rpm compat-2006.1.25-11.2.x86_64.rpm compat-libstdc++-5.0.7-22.2.x86_64.rpm glibc-2.4-31.54.x86_64.rpm libgcc-4.1.2_20070115-0.21.x86_64.rpm libstdc++-4.1.2_20070115-0.21.x86_64.rpm

If your system runs an older version of the operating system, you must upgrade to one of the supported operating systems before you install the product software.

- n See [“Upgrading the operating system and upgrading to 5.0 MP3 RP3”](#) on page 80.
- n See the *Oracle*, *Red Hat*, or *SuSE* documentation for more information on upgrading your system.

Note: All nodes in a VCS cluster must run on the same operating system version. It can however, have different patch levels.
 See [“Upgrading the patch levels of an operating system for Veritas Cluster Server”](#) on page 83

Xen platform support

The Veritas 5.0 MP3 RP3 release is also supported on the Xen platform for Linux, with some restrictions.

For information about the Veritas Storage Foundation 5.0 MP3 for Xen, refer to the following URL:

<http://entsupport.symantec.com/docs/318227>

VMware Environment support

For information about the use of this product in a VMware Environment, refer to the following URL:

<http://entsupport.symantec.com/docs/289033>

DB2 support

This release supports DB2 9.5 FixPak 1, in addition to the DB2 database versions that are supported in the 5.0 MP3 release.

Cluster support

This release supports clusters of a maximum of 32 nodes.

Storage Foundation High Availability fixed issues

The following sections describe the Veritas Storage Foundation High Availability (HA) issues that were fixed in this release.

- n [Volume Manager fixed issues](#)
- n [File System fixed issues](#)
- n [Storage Foundation fixed issues](#)
- n [Storage Foundation for Oracle fixed issues](#)
- n [Storage Foundation for DB2 fixed issues](#)
- n [Veritas Cluster Server fixed issues](#)

Volume Manager fixed issues

[Table 1-2](#) describes fixed issues in the Volume Manager 5.0 MP3 RP3 release.

Table 1-2 Volume Manager 5.0 MP3 RP3 fixed issues

Incident	Description
1729558	Fixed issue with multiple vxplex attach commands running in parallel on a volume, which led to a clearing of the DCO map and subsequent corruption in FMR2.
1711339	VVR: Restored the ability to modify VVR tunables via kdb and expose tunables using vxtune.
1675221	DDL: Fixed new naming issue encountered after conversion to user defined DA naming during vxmpadm setattr enclosure.
1677416	Fixed CVM join and takeover issues during shared A/P storage config due to “not breaking” more than 64K size kmsgs.
1664891	Fixed issue with encapsulating linux root disk not changing the grub configuration.
1596811	Fixed an issue with slowness when re-enabling individual paths on vx4.1mp2rp1
1590314	Fixed issue with EMC PP/DMP interoperability for vxmpadm getsubpaths dmpnodename=emcpower## incorrect details.
1589022	Fixed infinite looping issue in DMP error handling code path due to CLARIION APM leading to an IO hang.
1586879	Fixed issue with vxdisk online (on a single device as well as on a list of devices) taking too long on large configurations.

Table 1-2 Volume Manager 5.0 MP3 RP3 fixed issues

Incident	Description
1537027	Fixed a security issue with <code>ddl_change_naming_scheme()</code> not setting mode when creating <code>.newnames</code> .
1534379	Fixed an issue of <code>vxvg</code> split failure with internal config daemon error - VxVM 5.0 MP1_rp5_hf13.
1529157	Fulfilled request to enhance <code>vxdisk -e</code> list output.
1528115	Fixed ' <code>vxdisk scandisks \!device=sdx</code> ' partial device discovery not working as expected.
1525819	Fixed an issue with <code>vxconfigbackup</code> not working on the <code>dg</code> with 2TB LUNs.
1507291	Fixed an issue with <code>dmp_monitor_fabric=on</code> triggering unexpected offlining of paths on DMX4 array on 5.0MP3RP1.
1503168	Fixed an issue with the file <code>/etc/vx/darecs</code> not being read in 5.0MP3. <code>dg</code> causing import failure for <code>nopriv</code> disks.
1502120	Fixed an issue with <code>/dev/dmpconfig</code> device causing SELINUX an audit error.
1510204	Fixed an issue with <code>vxconfigd</code> command hanging after cluster nodes split simulation.
1503242	Fixed an issue with <code>vxddm iostat</code> stats not tallying with those of <code>sar</code> , <code>iostat</code> and <code>vxstat</code> .
1487907	Fixed an issue with <code>vxio</code> has a non-unique UDID for failed disks.
1487888	Fixed an issue with the start up process fails after upgrade to 5.0 MP3.
1487584	Fixed an issue with CVR: I/O hang on logowner after logclient crashes.
1485379	Fixed an issue of <code>vxtask</code> showing Progress with "Progress: inf% 349978624 of 0 Blocks" while LINKSYNCing 34TB vol in SuSE 9.
1483643	Fixed an issue with the raid5 volume not starting on Thin Provisioning LUNs of 3PAR.
1483164	Fixed an issue with disks with <code>nolabel</code> state being usable.
1479735	Fixed an issue with a CVR I/O hang on the slave if the master (logowner) crashes with DCM active.
1477143	Fixed an issue with <code>vxconfigd</code> sometimes hanging after pulling and re-attaching the fibre channel cable of the master node in clustered file system environments.
1475707	Added error message for unwritable disks.

Table 1-2 Volume Manager 5.0 MP3 RP3 fixed issues

Incident	Description
1475580	Fixed an issue with VTOC getting corrupted by our header "PRIVHEAD".
1470734	Fixed an issue with vxconfigd dumps core if all paths are excluded.
1471658	Fixed an issue with AxRT5.0MP3: vxconfigd core in priv_get_all_udid_entry via vold_get_udid_entry via da_udid_is_any_same_disk.
1469487	Fixed issue with (bp)->start time being modified as part of error processing.
1461717	Fixed an issue with the vxsnap make command that caused vxconfigd and IO to sleep for too long a time.
1461314	Fixed disabling of SCSI bypass for single path disks (so that for path suppressing TPD, DMP does not use SCSI bypass).
1459831	VVR: Fixed replication hangs due to deadlock on secondary nmcom receive with TCP multiconnection.
1459000	Fixed an issue with the failover command on a bad LUN sometimes causing an infinite loop in dmpCLARiiON_issue_failover.
1457132	Fixed an issue with vxdmpadm enable path/ctlr CLI taking more time than they used to take prior to 5.0.
1450348	VVR: Fixed potential hang/panic due to the race between the RU thread and the volume read completion during a DCM replay.
1443752	Fixed an issue in a clustered environment the recovery of volumes having DCO v20 taking lots of time with no I/O load.
1443706	Fixed an issue in FMR3, I/Os initiating DCO updates for clearing DRL async clear region may not wait for its completion.
1442369	Fixed an issue with a bug in vxconfigbackupd script leading to 0 byte binconfig file being created.
1441131	Fixed an issue with VxFS Corruption Detected when DCM log plex are attached with mirrored volume and VVR is not configured.
1441072	Fixed an issue with siteread policy is not honoured.
1441020	Fixed a secondary panic due to double free of message with TCP protocol and 16 connection.
1435882	Fixed a panic in volkio_to_kio_copy due to passing null ptr to bcopy.
1435471	Fixed an issue with the cluster nodes panicking in voldco_or_pvmbuf_to_pvmbuf code after installing 5.0 MP3.
1431279	Fixed an issue with vxconfigd core dumps.

Table 1-2 Volume Manager 5.0 MP3 RP3 fixed issues

Incident	Description
1428106	Fixed a system panic in vxio:voldrl_trans_copy.
1427284	Fixed an issue with vxddmpadm dumped core when executing vxddmpadm list dmpnode command.
1427267	Fixed a CVR panic in VOLSIOQ_MORE due to corrupted volsioq_start queue.
1425919	Fixed an issue with vxesd looping using 100% of one CPU.
1425338	Fixed an issue with a CVR failure to connect rlinks followed by vxconfigd hangs on secondary.
1421353	Fixed an issue with an I/O getting stuck in the drl_logbusy queue due to corruption of the agenode LRU list.
1416080	Fixed an issue with system panic in the vol_change_disk() routine due to a NULL dereference.
1414469	Fixed an issue with DMP : vxddladm listsupport all not displaying up-to-date information.
1414441	The vxsnap manual page includes mirror=enclosure parameter to avoid being mirrored on the same enclosure.
1414381	Fixed an issue with VVR I/O hanging due to the wrong generation number assignment after recovery.
1414380	Fixed an issue with VVR Rlink failing to connect due to failure of memory allocation for incoming message buffer.
1414342	Fixed an issue with disk devices not appearing in vxdisk list.
1412785	Fixed an issue with the system hanging while creating volumes in a guest Ldom.
1411636	Fixed a secondary log error causing rlink disconnect after IBC unfreeze.
1408367	Fixed an issue with system panic in mutex_panic() being called from vol_rwsleep_wrllock().
1406185	Fixed a segmentation fault on x64 system when running the vxddmpadm list dmpnode all command.
1403370	Fixed a system panic after running the vxctl enable or vxconfigd -k commands.
1403123	Fixed an issue with vxconfigd sleeping and no vx commands were responding.

Table 1-2 Volume Manager 5.0 MP3 RP3 fixed issues

Incident	Description
1402443	Fixed an issue with server panics in <code>kmsg_udp_payload()</code> 2- Node CVM cluster with SUN Cluster 3.2.0.
1397879	Enhanced the <code>vxresize</code> manual page to run from non-CVM master.
1397712	Fixed an issue with the <code>vxsnap restore</code> manual page is unable to properly freeze or thaw filesystems in a CVM environment.
1396427	Enhanced DMP to handle failing IO when it is not able to interpret sense data.
1389584	Fixed a system panic in <code>vol_putdisk()</code> code.
1389512	Able to force import diskgroup version 80 in VxVM 5.0.
1387033	Fixed a system panic in <code>bcopy()</code> due to null passed in from <code>volioctl_copyin()</code>
1385922	Fixed a system panic due to memory allocation.
1382705	Fixed an issue with the <code>vxdumpadm listexclude</code> command dumping core when you run the VRTSexplorer tool.
1381783	Improved the performance of snapshot backups.
1376656	Fixed an issue with <code>vxcached</code> never deletes old snaps when cache hits HWM.
1372340	Fixed an issue with <code>vxplex</code> core dumps during <code>vxassist addlog</code> due to DRL log length being less than 33 blocks.
1321298	Fixed an issue with heartbeat after <code>vxconfigd</code> dumped the core following reconnection of fibre channel cable link.
1321272	Fixed an issue with <code>vxcommands</code> hanging after re-connecting the FC-site link.
1317361	Fixed an issue with the <code>vxreattach</code> and <code>vxunreloc</code> commands were leaving behind tmp files.
1287975	Fixed an issue with the <code>vxclustadm</code> command SIGSEGV's when <code>main.cf</code> contains lines with > 512 characters.
1266730	Fixed the <code>vxtask</code> command to display the resync progress subtask for shared volumes with DRL.
1253830	Fixed an issue with HP CCISS raid devices failing in <code>vxvmconvert</code> .
1230360	Fixed a system panic in <code>vol_klog_start()</code> due to accessing freed mv <code>read_sio</code> .
1225953	Improved I/O performance with VxFS filesystems on mirror-concat VxVM volumes with DCO and DRL.

Table 1-2 Volume Manager 5.0 MP3 RP3 fixed issues

Incident	Description
1195591	Fixed an issue of three nodes rebooting due to customer's empty RVG.
1192105	Fixed the <code>vxdbg -n [newdg] deport [origdg]</code> command causing a memory leak.
1184280	Fixed an issue with <code>vxconfigd</code> CONNECTION FAILED event due to VE_BADPROTOV error not providing sufficient information.
1182475	Fixed the <code>vxdbg split</code> failing if the CVM master changes.
1108839	Turning on the <code>dmp_cache_open</code> tunable slows down <code>vxconfigd</code> when it is run with 2048 dual path LUNs.
1097258	Fixed an issue with <code>vxconfigd</code> hanging when an array is disconnected.
850816	Fixed an issue with parallel <code>vxsnap</code> reattach operations that can cause data corruption and also lead to orphan snap objects.
425273	Fixed an issue with VVR RU thread not starting nio after it is created from than waiting for all replicas to have NIO's created.

File System fixed issues

[Table 1-3](#) describes fixed issues in the Veritas File System 5.0 MP3 RP3 release.

Table 1-3 Veritas File System 5.0 MP3 RP3 fixed issues

Incident	Description
1805165	Updated the <code>qiomkfile</code> command man page to correctly state required credentials for running the <code>qiomkfile</code> command.
1779732	Fixed the <code>inotifywatch</code> hang issue.
1779481	Fixed <code>fsck</code> hang issue during intent log replay
1705352	Split "May Freeze Lock" handling into local and cluster wide to manage global data de-initialization correctly.
1678885	Fixed an issue with the <code>smap</code> transaction on a cluster mounted file system.
1677959	Fixed <code>vxrepquota</code> output formatting issue.
1677917	Fixed a performance issue encountered during a backup operation on a snapshot file system.
1672186	Fixed the <code>vxresize shrink</code> operation failure.
1672132	Fixed <code>setattr</code> and <code>removeattr</code> for readonly mounted clones.

Table 1-3 Veritas File System 5.0 MP3 RP3 fixed issues

Incident	Description
1671170	Fixed a vxfs binaries installation issue on SuSE 9.
1670604	Fixed a sync operation hang.
1670601	Added extra check to avoid this null pointer dereferencing.
1670598	Fixed bad map handling during a new allocation to avoid a hang-like situation.
1670586	Fixed a deadlock during a recovery operation on a cluster mounted file system.
1670549	Fixed a performance issue with DIO by adding a new tunable “dio” to convert it into buffered I/O.
1670534	Fixed performance issue seen on mmap files.
1670529	Fixed a security issue which could possibly expose uninitialized data after a VX_GROWFILE operation.
1670527	Fixed dm_get_allocinfo DMAPI to return correct information for EXT4 inodes with in-directs.
1670522	Fixed ncheck command to handle NULL terminated string correctly.
1670437	Fixed vxfsckd to correctly initialize the value of the number of threads.
1670430	Fixed the transaction flushing code to mark a map as bad only when there is an I/O error.
1670411	Fixed vxfs_ninode tunable such that the number of inodes do not extend beyond the user specified value.
1631078	Added vx_maxlink to the tunable list.
1655659	Fixed an issue in cached I/O which can lead to stale data.
1488246	Fixed up directory entry bounds checking which could cause files not to be removed.
1466362	Changed the minimum exclusion zone size for better performance with Thin Reclamation.
1459277	Fixed an issue in which Thin Storage could not be reclaimed.
1456156	Potential for CFS hang during file read ahead.
1456149	Improvements when allocating odd sized extents.
1435656	Made multi-threading improvements to the fsclustadm library.

Table 1-3 Veritas File System 5.0 MP3 RP3 fixed issues

Incident	Description
1428641	Fixed an issue with shrinking a CFS which is over 69% full can cause temporary performance issues.
1424181	Improved performance when converting a data Storage Checkpoint to a nodata Storage Checkpoint.
1414727	Fixed fsck to handle malloc failures
1414719	The <code>du</code> and <code>bdF</code> commands now report the same amount of free space without a delay after files are deleted.
1413464	Changed the maximum direct I/O size to 1 MB.
1412583	Fixed the cause of a core dump if the <code>chkptname</code> parameter was omitted when running the <code>fsapadm enforceckpt</code> command.
1412163	Fixed the cause of a core dump by a VxFS function call while setting Dynamic Storage Tiering attributes.
1411872	NFS locking fix on RHEL 5.
1407592	Added support for a fake mount of a file system.
1404722	Corrected the <code>vxumount</code> command's usage text.
1385560	Fixed an issue when reusing a special-device inodes can cause memory corruption.
1385559	Fixed a policy enforcement when converting a "data" checkpoint to a "nodata" checkpoint.
1323920	Fixed the <code>odmmkfile</code> and <code>qiomkfile</code> to only run as root user.

Storage Foundation fixed issues

[Table 1-4](#) describes fixed issues in the Storage Foundation 5.0 MP3 RP3 release.

Table 1-4 Storage Foundation 5.0 MP3 RP3 fixed issues

Incident	Description
1366109	Fixed an SELinux-related issue for mapping provider.

Storage Foundation for Oracle fixed issues

[Table 1-5](#) describes fixed issues in the Storage Foundation for Oracle 5.0 MP3 RP3 release.

Table 1-5 Storage Foundation for Oracle 5.0 MP3 RP3 fixed issues

Incidents	Description
1781146	Fixed ODM module initialization issue on RHEL4.
1476868	Fixed the <code>dbed_checkconfig</code> to provide the correct output.
1435527	Improved boot time for DBEDAgent startup script.
1434688	Storage Foundation for Oracle is no longer creating world writable files under <code>/tmp</code> .
1433571	Sybase repository database server is no longer creating world writable files under <code>/tmp</code> .
1425261	Automatic truncation of the transaction log of the repository database. In addition incomplete recovery is automatically attempted in case the online transaction log was lost.

Storage Foundation for DB2 fixed issues

[Table 1-6](#) describes fixed issues in the Storage Foundation for DB2 5.0 MP3 RP3 release.

Table 1-6 Storage Foundation for DB2 5.0 MP3 RP3 fixed issues

Incidents	Description
1435527	Improved boot time for DBEDAgent startup script.
1434688	Storage Foundation for DB2 is no longer creating world writable files under <code>/tmp</code> .
1433571	Sybase repository database server is no longer creating world writable files under <code>/tmp</code> .
1425261	Automatic truncation of the transaction log of the repository database. In addition incomplete recovery is automatically attempted in case the online transaction log was lost.

Veritas Cluster Server fixed issues

Table 1-7 describes fixed issues in the Veritas Cluster Server 5.0 MP3 RP3 release.

Table 1-7 Veritas Cluster Server 5.0 MP3 RP3 fixed issues

Incidents	Description
1507031	The LVMVolumeGroup monitor script now verifies the existence of Volume for all distributions correctly.
1487322	The default location of the Run_ServerFile in Sybase and SybaseBk agents can now be defined.
1469787	The file descriptor opened by HAD on /dev/llt now closes on exec.
1451717	hasys command displays an error message when non-existent attributes are specified with -display command.
1450300	NFS agent now supports export over multiple IP addresses.
1440459	Modified the init.d script of vxfen to ensure that the vxfen service starts after the vxvm-boot service, when the system boots up.
1425599	The setsockopt function is called with SO_BSDCOMPAT, only on linux kernel versions where it is supported.
1424929	Fixed the race condition while sending the GAB CONNECTS message.
1414709	After all the resources get offline, the IntentOnline attribute of the service group resets to 0.
1407418	Modified the logic such that the agent log files are now created when the environment variable VCS_LOG_MAXLEN is exported.
1404384	Global groups can now switch over to the target cluster when the Preswitch's attribute value is set to TRUE.
1403471	Reduced time for global cluster fault detection.
1386527	Removed the buffer overflow that occurred during CPU usage computation.
1369622	Steward process now starts as a daemon when invoked with 'steward -start'.

Storage Foundation and High Availability known issues

The following sections describe the Veritas Storage Foundation High Availability (HA) known issues in this release.

- n [Volume Manager known issues](#)
- n [File System known issues](#)
- n [Storage Foundation High Availability known issues](#)
- n [Storage Foundation Cluster File System known issues](#)
- n [Storage Foundation for Oracle known issues](#)
- n [Storage Foundation for DB2 known issues](#)
- n [Veritas Cluster Server known issues](#)

Volume Manager known issues

The following is the Volume Manager issue that is known in this release.

File system fsck and mount fails because VxVM devices are not present at system boot time (1411526)

On SLES10 systems, the system may fail to boot when a file system is mounted on a Veritas Volume Manager (VxVM) device. This issue occurs because the file system attempts to check and mount the VxVM device before the device is present.

Workaround

Edit the file system entry in `/etc/fstab` file to include the file system options `_netdev` and `hotplug`.

For example, for a VxVM logical volume `lv010`, edit the line in the `/etc/fstab` file to say:

```
/dev/vx/dsk/vg/lv010    /mnt          vxfs    _netdev,hotplug 1 2
```

File System known issues

The following is the File System issue that is known in this release.

Advisory locking over NFS (1508386)

The NFS `lockd` daemon has some known issues on all versions of Linux supported by this 5.0 MP3 RP3 release. Although the issues are unrelated to

Storage Foundation, you may experience problems when using advisory locking on an NFS-mounted VxFS file system. Symptoms can include the `lockd` process hanging, problems when trying to unmount the exported file system on the server, and error messages in the log files, such as "`nlmclnt_lock: VFS is out of sync with lock manager!`".

Workaround

Try any of the following workarounds:

- n Send a SIGKILL to the `lockd` process on the NFS server.
- n Unmount the file system from the client.
- n Reboot the system.

Symantec is working with Red Hat and Novell/SuSE on this fix.

Storage Foundation High Availability known issues

The following is the Storage Foundation High Availability issue that is known in this release.

Storage Foundation Manager 1.1.1 Central Server

The procedure to centrally manage Storage Foundation 5.0 MP3 RP3 nodes on Storage Foundation Manager 1.1.1 can be viewed at the following URL:

<http://entsupport.symantec.com/docs/315384>

Storage Foundation Cluster File System known issues

There are no known issues in 5.0 MP3 RP3 release of Storage Foundation Cluster File System.

Storage Foundation for Oracle known issues

The following is the Storage Foundation for Oracle issue that is known in this release.

DBED is slow to boot (1433244)

The boot time for the DBED repository database server startup script is slow. For more information, refer to the following Late Breaking News (LBN) URL:

<http://entsupport.symantec.com/docs/281993>

Storage Foundation for DB2 known issues

The following is the Storage Foundation for DB2 issue that is known in this release.

DBED is slow to boot (1433244)

The boot time for the DBED repository database server startup script is slow. For more information, refer to the following Late Breaking News (LBN) URL:

<http://entsupport.symantec.com/docs/281993>

Veritas Cluster Server known issues

The following are the known issues in the 5.0 MP3 RP3 release of Veritas Cluster Server.

Memberships to the GAB clients may not be formed if brought online before the Port a membership is formed (1509742)

The membership to the GAB clients will not be formed in the following situations:

- n GAB clients are not started on all the nodes.
- n Port a membership was not formed when the client was started.

Workaround

Perform the following steps to resolve this issue.

- 1 Stop the clients on any of the nodes where they are running.
- 2 Ensure that the Port a membership is formed on that node.
- 3 Restart the clients.

Refer to <http://entsupport.symantec.com/docs/281993> for information on the hotfix for this issue

The vxfcntlpre script displays error messages if the /etc/vxfentab file is commented (1512956)

The `/etc/vxfentab` file has the following comments:

```
#  
# /etc/vxfentab  
# DO NOT MODIFY this file it is generated by the  
# VXFEN rc script from the file /etc/vxfendg  
#
```


When you run the `vxfcntlclearpre` script the following errors are displayed:

```
VXFEN vxfenadm ERROR V-11-2-1116 Cannot open:
# VXFEN vxfenadm ERROR V-11-2-1132 Open of file failed, errno =
-15344
VXFEN vxfenadm ERROR V-11-2-1205 READ_KEYS failed for:
# VXFEN vxfenadm ERROR V-11-2-1133 Error returned
VXFEN vxfenadm ERROR V-11-2-1116 Cannot open:
# VXFEN vxfenadm ERROR V-11-2-1132 Open of file failed, errno =
-15856
```

Workaround

Though the `vxfcntlclearpre` script performs its operation successfully, delete the comments added to the `/etc/vxfentab` file before you run the `vxfcntlclearpre` script, to avoid these error messages.

Software limitations

The following sections describe the Veritas Storage Foundation High Availability (HA) software limitations in this release.

- n [Storage Foundation for Oracle software limitations](#)
- n [Storage Foundation for DB2 software limitations](#)

Review your 5.0 MP3 product release notes for possible additional software limitations.

Storage Foundation for Oracle software limitations

The following are the Storage Foundation for Oracle software limitations that are known in this release.

Older backups failing to be restored using the DBED scripts

If you are currently using backup and restore for the DBED repository, it is crucial to perform a full backup of the DBED repository database after installing 5.0 MP3 RP3. Otherwise, prior backups cannot be restored using the 5.0 MP3 RP3 restore script.

See the *Veritas Storage Foundation for Oracle Administrator's Guide* for the `sfua_rept_adm` command.

For more information see [“Storage Foundation for Oracle fixed issues”](#) on page 16 for incident 1425261.

Storage Foundation for DB2 software limitations

The following are the Storage Foundation for DB2 software limitations that are known in this release.

Older backups failing to be restored using the DBED scripts

If you are currently using backup and restore for the DBED repository, it is crucial to perform a full backup of the DBED repository database after installing 5.0 MP3 RP3. Otherwise, prior backups cannot be restored using the 5.0 MP3 RP3 restore script.

See the *Veritas Storage Foundation for DB2 Administrator's Guide* for the `sfua_rept_adm` command.

For more information see [“Storage Foundation for DB2 fixed issues”](#) on page 16 for incident 1425261.

Downloading the rolling patch archive

The patches comprising the 5.0 MP3 RP3 release are available for download from the Veritas website. After downloading the 5.0 MP3 RP3 file, use the `tar -z` command to uncompress and extract the archive.

RPMs included in this rolling patch

This section provides the RPMs included in this rolling patch.

- n [File System RPMs](#)
- n [Storage Foundation RPMs](#)
- n [Storage Foundation Cluster File System RPMs](#)
- n [Storage Foundation Cluster File System for Oracle RAC RPMs](#)
- n [Storage Foundation for DB2 RPMs](#)
- n [Storage Foundation for Oracle RPMs](#)
- n [Volume Manager RPMs](#)
- n [Veritas Cluster Server RPMs](#)
- n [Veritas Cluster Server Agent RPMs](#)
- n [Cluster Management Console RPMs](#)

File System RPMs

[Table 1-8](#) describes the File System RPMs that are included in this rolling patch:

Table 1-8 File System 5.0 MP3 RP3 RPMs

OS	Architecture	RPMs
RHEL 4	x86_64	VRTSaa-is 5.0.613.0-0.i686.rpm VRTSccg-is 5.0.613.0-0.i686.rpm VRTSdcli-5.0.30.00-GA_MP3_RHEL.i686.rpm VRTSddlpr-5.0.30.00-GA_MP3_RHEL4.i686.rpm VRTSfssdk-5.0.30.30-MP3RP3_RHEL4.i686.rpm VRTSob-3.3.1215.0-0.i686.rpm VRTSobc33-3.3.1215.0-0.i686.rpm VRTSvmman-5.0.30.30-MP3RP3_GENERIC.noarch.rpm VRTSvmpro-5.0.30.00-GA_RHEL4.i686.rpm VRTSvxfs-common-5.0.30.30-MP3RP3_RHEL4.i686.rpm VRTSvxfs-platform-5.0.30.30-MP3RP3_RHEL4.x86_64.rpm VRTSvxvm-common-5.0.30.30-MP3RP3_RHEL4.i686.rpm VRTSvxvm-platform-5.0.30.30-MP3RP3_RHEL4.x86_64.rpm
RHEL 5	x86_64	VRTSaa-is 5.0.613.0-0.i686.rpm VRTSccg-is 5.0.613.0-0.i686.rpm VRTSdcli-5.0.30.00-GA_MP3_RHEL.i686.rpm VRTSddlpr-5.0.30.00-GA_MP3_RHEL5.i686.rpm VRTSfssdk-5.0.30.30-MP3RP3_RHEL5.i686.rpm VRTSob-3.3.1215.0-0.i686.rpm VRTSobc33-3.3.1215.0-0.i686.rpm VRTSvmman-5.0.30.30-MP3RP3_GENERIC.noarch.rpm VRTSvmpro-5.0.30.00-GA_RHEL5.i686.rpm VRTSvxfs-common-5.0.30.30-MP3RP3_RHEL5.i686.rpm VRTSvxfs-platform-5.0.30.30-MP3RP3_RHEL5.x86_64.rpm VRTSvxvm-common-5.0.30.30-MP3RP3_RHEL5.i686.rpm VRTSvxvm-platform-5.0.30.30-MP3RP3_RHEL5.x86_64.rpm

Table 1-8 File System 5.0 MP3 RP3 RPMs

OS	Architecture	RPMs
SLES 9	x86_64	VRTSaa-5.0.613.0-0.i686.rpm VRTSccg-5.0.613.0-0.i686.rpm VRTSdcli-5.0.30.00-GA_MP3_SLES.i586.rpm VRTSddlpr-5.0.30.00-GA_MP3_SLES9.i586.rpm VRTSfssdk-5.0.30.30-MP3RP3_SLES9.i586.rpm VRTSob-3.3.1215.0-0.i686.rpm VRTSobc33-3.3.1215.0-0.i686.rpm VRTSvmman-5.0.30.30-MP3RP3_GENERIC.noarch.rpm VRTSvmpro-5.0.30.00-GA_SLES9.i586.rpm VRTSvxfs-common-5.0.30.30-MP3RP3_SLES9.i586.rpm VRTSvxfs-platform-5.0.30.30-MP3RP3_SLES9.x86_64.rpm VRTSvxvm-common-5.0.30.30-MP3RP3_SLES9.i586.rpm VRTSvxvm-platform-5.0.30.30-MP3RP3_SLES9.x86_64.rpm
SLES 10	x86_64	VRTSaa-5.0.613.0-0.i686.rpm VRTSccg-5.0.613.0-0.i686.rpm VRTSdcli-5.0.30.00-GA_MP3_SLES.i586.rpm VRTSddlpr-5.0.30.00-GA_MP3_SLES10.i586.rpm VRTSfssdk-5.0.30.30-MP3RP3_SLES10.i586.rpm VRTSob-3.3.1215.0-0.i686.rpm VRTSobc33-3.3.1215.0-0.i686.rpm VRTSvmman-5.0.30.30-MP3RP3_GENERIC.noarch.rpm VRTSvmpro-5.0.30.00-GA_SLES10.i586.rpm VRTSvxfs-common-5.0.30.30-MP3RP3_SLES10.i586.rpm VRTSvxfs-platform-5.0.30.30-MP3RP3_SLES10.x86_64.rpm VRTSvxvm-common-5.0.30.30-MP3RP3_SLES10.i586.rpm VRTSvxvm-platform-5.0.30.30-MP3RP3_SLES10.x86_64.rpm

Storage Foundation RPMs

Table 1-9 describes the Storage Foundation RPMs that are included in this rolling patch:

Table 1-9 Storage Foundation 5.0 MP3 RP3 RPMs

OS	Architecture	RPMs
RHEL 4	x86_64	VRTScavf-5.0.30.20-MP3RP2a_GENERIC.noarch.rpm VRTSdcli-5.0.30.00-GA_MP3_RHEL4.i686.rpm VRTSddlpr-5.0.30.00-GA_MP3_RHEL4.i686.rpm VRTSfssdk-5.0.30.30-MP3RP3_RHEL4.i686.rpm VRTSgab-5.0.30.20-MP3RP2_RHEL4.x86_64.rpm VRTSllt-5.0.30.20-MP3RP2_RHEL4.x86_64.rpm VRTSllmconv-5.0.30.30-MP3RP3_RHEL4.i686.rpm VRTSmapro-common-5.0.30.30-MP3RP3_RHEL4.i686.rpm VRTSvcs-5.0.30.20-MP3RP2_RHEL4.i686.rpm VRTSvcsag-5.0.30.20-MP3RP2_RHEL4.i686.rpm VRTSvmman-5.0.30.30-MP3RP3_GENERIC.noarch.rpm VRTSvmpro-5.0.30.00-MP3_RHEL4.i686.rpm VRTSvxfen-5.0.30.20-MP3RP2_RHEL4.x86_64.rpm VRTSvxfs-common-5.0.30.30-MP3RP3_RHEL4.i686.rpm VRTSvxfs-platform-5.0.30.30-MP3RP3_RHEL4.x86_64.rpm VRTSvxvm-common-5.0.30.30-MP3RP3_RHEL4.i686.rpm VRTSvxvm-platform-5.0.30.30-MP3RP3_RHEL4.x86_64.rpm

Table 1-9 Storage Foundation 5.0 MP3 RP3 RPMs

OS	Architecture	RPMs
RHEL 5	x86_64	VRTScavf-5.0.30.20-MP3RP2a_GENERIC.noarch.rpm VRTSdcli-5.0.30.00-GA_MP3_RHEL.i686.rpm VRTSddlpr-5.0.30.00-GA_MP3_RHEL5.i686.rpm VRTSfssdk-5.0.30.30-MP3RP3_RHEL5.i686.rpm VRTSgab-5.0.30.20-MP3RP2_RHEL5.x86_64.rpm VRTSllt-5.0.30.20-MP3RP2_RHEL5.x86_64.rpm VRTSvmconv-5.0.30.30-MP3RP3_RHEL5.i686.rpm VRTSmapro-common-5.0.30.30-MP3RP3_RHEL5.i686.rpm VRTSvcs-5.0.30.20-MP3RP2_RHEL5.i686.rpm VRTSvcsag-5.0.30.20-MP3RP2_RHEL5.i686.rpm VRTSvmman-5.0.30.30-MP3RP3_GENERIC.noarch.rpm VRTSvmpro-5.0.30.00-MP3_RHEL5.i686.rpm VRTSvxfen-5.0.30.20-MP3RP2_RHEL5.x86_64.rpm VRTSvxfs-common-5.0.30.30-MP3RP3_RHEL5.i686.rpm VRTSvxfs-platform-5.0.30.30-MP3RP3_RHEL5.x86_64.rpm VRTSvxvm-common-5.0.30.30-MP3RP3_RHEL5.i686.rpm VRTSvxvm-platform-5.0.30.30-MP3RP3_RHEL5.x86_64.rpm

Table 1-9 Storage Foundation 5.0 MP3 RP3 RPMs

OS	Architecture	RPMs
SLES 9	x86_64	VRTScavf-5.0.30.20-MP3RP2a_GENERIC.noarch.rpm VRTSdcli-5.0.30.00-GA_MP3_SLES.i586.rpm VRTSddlpr-5.0.30.00-GA_MP3_SLES9.i586.rpm VRTSfssdk-5.0.30.30-MP3RP3_SLES9.i586.rpm VRTSgab-5.0.30.20-MP3RP2_SLES9.x86_64.rpm VRTSllt-5.0.30.20-MP3RP2_SLES9.x86_64.rpm VRTSllmconv-5.0.30.30-MP3RP3_SLES9.i686.rpm VRTSmapro-common-5.0.30.30-MP3RP3_SLES9.i586.rpm VRTSvcs-5.0.30.20-MP3RP2_SLES9.i586.rpm VRTSvcsag-5.0.30.20-MP3RP2_SLES9.i586.rpm VRTSvmman-5.0.30.30-MP3RP3_GENERIC.noarch.rpm VRTSvmpro-5.0.30.00-MP3_SLES9.i586.rpm VRTSvxfen-5.0.30.20-MP3RP2_SLES9.x86_64.rpm VRTSvxfs-common-5.0.30.30-MP3RP3_SLES9.i586.rpm VRTSvxfs-platform-5.0.30.30-MP3RP3_SLES9.x86_64.rpm VRTSvxvm-common-5.0.30.30-MP3RP3_SLES9.i586.rpm VRTSvxvm-platform-5.0.30.30-MP3RP3_SLES9.x86_64.rpm

Table 1-9 Storage Foundation 5.0 MP3 RP3 RPMs

OS	Architecture	RPMs
SLES 10	x86_64	VRTScavf-5.0.30.20-MP3RP2a_GENERIC.noarch.rpm VRTSdcli-5.0.30.00-GA_MP3_SLES.i586.rpm VRTSddlpr-5.0.30.00-GA_MP3_SLES10.i586.rpm VRTSfssdk-5.0.30.30-MP3RP3_SLES10.i586.rpm VRTSgab-5.0.30.20-MP3RP2_SLES10.x86_64.rpm VRTSllt-5.0.30.20-MP3RP2_SLES10.x86_64.rpm VRTSlmconv-5.0.30.30-MP3RP3_SLES10.i686.rpm VRTSmapro-common-5.0.30.30-MP3RP3_SLES10.i586.rpm VRTSvcs-5.0.30.20-MP3RP2_SLES10.i586.rpm VRTSvcsag-5.0.30.20-MP3RP2_SLES10.i586.rpm VRTSvmman-5.0.30.30-MP3RP3_GENERIC.noarch.rpm VRTSvmpro-5.0.30.00-MP3_SLES10.i586.rpm VRTSvxfen-5.0.30.20-MP3RP2_SLES10.x86_64.rpm VRTSvxfs-common-5.0.30.30-MP3RP3_SLES10.i586.rpm VRTSvxfs-platform-5.0.30.30-MP3RP3_SLES10.x86_64.rpm VRTSvxvm-common-5.0.30.30-MP3RP3_SLES10.i586.rpm VRTSvxvm-platform-5.0.30.30-MP3RP3_SLES10.x86_64.rpm

Storage Foundation Cluster File System RPMs

[Table 1-10](#) describes the Storage Foundation Cluster File System RPMs that are included in this rolling patch:

Table 1-10 Storage Foundation Cluster File System 5.0 MP3 RP3 RPMs

OS	Architecture	RPMs
RHEL 4	x86_64	VRTSaa-is-5.0.613.0-0.i686.rpm VRTScavf-5.0.30.20-MP3RP2a_GENERIC.noarch.rpm VRTSccg-5.0.613.0-0.i686.rpm VRTSemccc-5.0.30.20-MP3RP2_RHEL4.i686.rpm VRTScmcs-5.0.30.20-MP3RP2_RHEL4.i686.rpm VRTSdcli-5.0.30.00-GA_MP3_RHEL.i686.rpm VRTSddlpr-5.0.30.00-GA_MP3_RHEL4.i686.rpm VRTSfssdk-5.0.30.30-MP3RP3_RHEL4.i686.rpm VRTSgab-5.0.30.20-MP3RP2_RHEL4.x86_64.rpm VRTSllt-5.0.30.20-MP3RP2_RHEL4.x86_64.rpm VRTSlmconv-5.0.30.30-MP3RP3_RHEL4.i686.rpm VRTSob-3.3.1215.0-0.i686.rpm VRTSobc33-3.3.1215.0-0.i686.rpm VRTSvcs-5.0.30.20-MP3RP2_RHEL4.i686.rpm VRTSvcsag-5.0.30.20-MP3RP2_RHEL4.i686.rpm VRTSvmman-5.0.30.30-MP3RP3_GENERIC.noarch.rpm VRTSvmpro-5.0.30.00-MP3_RHEL4.i686.rpm VRTSvxfen-5.0.30.20-MP3RP2_RHEL4.x86_64.rpm VRTSvxfs-common-5.0.30.30-MP3RP3_RHEL4.i686.rpm VRTSvxfs-platform-5.0.30.30-MP3RP3_RHEL4.x86_64.rpm VRTSvxvm-common-5.0.30.30-MP3RP3_RHEL4.i686.rpm VRTSvxvm-platform-5.0.30.30-MP3RP3_RHEL4.x86_64.rpm

Table 1-10 Storage Foundation Cluster File System 5.0 MP3 RP3 RPMs

OS	Architecture	RPMs
RHEL 5	x86_64	VRTSaa-is-5.0.613.0-0.i686.rpm VRTScavf-5.0.30.20-MP3RP2a_GENERIC.noarch.rpm VRTSccg-5.0.613.0-0.i686.rpm VRTSemccc-5.0.30.20-MP3RP2_RHEL5.i686.rpm VRTSemcs-5.0.30.20-MP3RP2_RHEL5.i686.rpm VRTSdcli-5.0.30.00-GA_MP3_RHEL5.i686.rpm VRTSddlpr-5.0.30.00-GA_MP3_RHEL5.i686.rpm VRTSfssdk-5.0.30.30-MP3RP3_RHEL5.i686.rpm VRTSgab-5.0.30.20-MP3RP2_RHEL5.x86_64.rpm VRTSllt-5.0.30.20-MP3RP2_RHEL5.x86_64.rpm VRTSlmconv-5.0.30.30-MP3RP3_RHEL5.i686.rpm VRTSob-3.3.1215.0-0.i686.rpm VRTSobc33-3.3.1215.0-0.i686.rpm VRTSvcs-5.0.30.20-MP3RP2_RHEL5.i686.rpm VRTSvcsag-5.0.30.20-MP3RP2_RHEL5.i686.rpm VRTSvmman-5.0.30.30-MP3RP3_GENERIC.noarch.rpm VRTSvmpro-5.0.30.00-MP3_RHEL5.i686.rpm VRTSvxfen-5.0.30.20-MP3RP2_RHEL5.x86_64.rpm VRTSvxfs-common-5.0.30.30-MP3RP3_RHEL5.i686.rpm VRTSvxfs-platform-5.0.30.30-MP3RP3_RHEL5.x86_64.rpm VRTSvxvm-common-5.0.30.30-MP3RP3_RHEL5.i686.rpm VRTSvxvm-platform-5.0.30.30-MP3RP3_RHEL5.x86_64.rpm

Table 1-10 Storage Foundation Cluster File System 5.0 MP3 RP3 RPMs

OS	Architecture	RPMs
SLES 9	x86_64	VRTSaa-is-5.0.613.0-0.i686.rpm VRTScavf-5.0.30.20-MP3RP2a_GENERIC.noarch.rpm VRTSccg-5.0.613.0-0.i686.rpm VRTScmccc-5.0.30.20-MP3RP2_SLES9.i586.rpm VRTScmcs-5.0.30.20-MP3RP2_SLES9.i586.rpm VRTSdcli-5.0.30.00-GA_MP3_SLES.i586.rpm VRTSddlpr-5.0.30.00-GA_MP3_SLES9.i586.rpm VRTSfssdk-5.0.30.30-MP3RP3_SLES9.i586.rpm VRTSgab-5.0.30.20-MP3RP2_SLES9.x86_64.rpm VRTSllt-5.0.30.20-MP3RP2_SLES9.x86_64.rpm VRTSllmconv-5.0.30.30-MP3RP3_SLES9.i686.rpm VRTSob-3.3.1215.0-0.i686.rpm VRTSobc33-3.3.1215.0-0.i686.rpm VRTSvcs-5.0.30.20-MP3RP2_SLES9.i586.rpm VRTSvcsag-5.0.30.20-MP3RP2_SLES9.i586.rpm VRTSvmman-5.0.30.30-MP3RP3_GENERIC.noarch.rpm VRTSvmpro-5.0.30.00-MP3_SLES9.i586.rpm VRTSvxfen-5.0.30.20-MP3RP2_SLES9.x86_64.rpm VRTSvxfs-common-5.0.30.30-MP3RP3_SLES9.i586.rpm VRTSvxfs-platform-5.0.30.30-MP3RP3_SLES9.x86_64.rpm VRTSvxvm-common-5.0.30.30-MP3RP3_SLES9.i586.rpm VRTSvxvm-platform-5.0.30.30-MP3RP3_SLES9.x86_64.rpm

Table 1-10 Storage Foundation Cluster File System 5.0 MP3 RP3 RPMs

OS	Architecture	RPMs
SLES 10	x86_64	VRTSaa-is-5.0.613.0-0.i686.rpm VRTScavf-5.0.30.20-MP3RP2a_GENERIC.noarch.rpm VRTSccg-5.0.613.0-0.i686.rpm VRTSemccc-5.0.30.20-MP3RP2_SLES10.i586.rpm VRTSemcs-5.0.30.20-MP3RP2_SLES10.i586.rpm VRTSdcli-5.0.30.00-GA_MP3_SLES.i586.rpm VRTSddlpr-5.0.30.00-GA_MP3_SLES10.i586.rpm VRTSfssdk-5.0.30.30-MP3RP3_SLES10.i586.rpm VRTSgab-5.0.30.20-MP3RP2_SLES10.x86_64.rpm VRTSllt-5.0.30.20-MP3RP2_SLES10.x86_64.rpm VRTSlmconv-5.0.30.30-MP3RP3_SLES10.i686.rpm VRTSob-3.3.1215.0-0.i686.rpm VRTSobc33-3.3.1215.0-0.i686.rpm VRTSvcs-5.0.30.20-MP3RP2_SLES10.i586.rpm VRTSvcsag-5.0.30.20-MP3RP2_SLES10.i586.rpm VRTSvmman-5.0.30.30-MP3RP3_GENERIC.noarch.rpm VRTSvmpro-5.0.30.00-MP3_SLES10.i586.rpm VRTSvxfen-5.0.30.20-MP3RP2_SLES10.x86_64.rpm VRTSvxfs-common-5.0.30.30-MP3RP3_SLES10.i586.rpm VRTSvxfs-platform-5.0.30.30-MP3RP3_SLES10.x86_64.rpm VRTSvxvm-common-5.0.30.30-MP3RP3_SLES10.i586.rpm VRTSvxvm-platform-5.0.30.30-MP3RP3_SLES10.x86_64.rpm

Storage Foundation Cluster File System for Oracle RAC RPMs

[Table 1-11](#) describes the Storage Foundation Cluster File System for Oracle RAC RPMs that are included in this rolling patch:

Table 1-11 Storage Foundation Cluster File System for Oracle RAC 5.0MP3 RP3 RPMs

OS	Architecture	RPMs
RHEL 4	x86_64	VRTSaa-is-5.0.613.0-0.i686.rpm VRTScavf-5.0.30.20-MP3RP2a_GENERIC.noarch.rpm VRTSccg-5.0.613.0-0.i686.rpm VRTSemccc-5.0.30.20-MP3RP2_RHEL4.i686.rpm VRTSemcs-5.0.30.20-MP3RP2_RHEL4.i686.rpm VRTSdcli-5.0.30.00-GA_MP3_RHEL.i686.rpm VRTSddlpr-5.0.30.00-GA_MP3_RHEL4.i686.rpm VRTSfssdk-5.0.30.30-MP3RP3_RHEL4.i686.rpm VRTSgab-5.0.30.20-MP3RP2_RHEL4.x86_64.rpm VRTSllt-5.0.30.20-MP3RP2_RHEL4.x86_64.rpm VRTSob-3.3.1215.0-0.i686.rpm VRTSobc33-3.3.1215.0-0.i686.rpm VRTSvcs-5.0.30.20-MP3RP2_RHEL4.i686.rpm VRTSvcsag-5.0.30.20-MP3RP2_RHEL4.i686.rpm VRTSvmman-5.0.30.30-MP3RP3_GENERIC.noarch.rpm VRTSvmpro-5.0.30.00-MP3_RHEL4.i686.rpm VRTSvxfen-5.0.30.20-MP3RP2_RHEL4.x86_64.rpm VRTSvxfs-common-5.0.30.30-MP3RP3_RHEL4.i686.rpm VRTSvxfs-platform-5.0.30.30-MP3RP3_RHEL4.x86_64.rpm VRTSvxvm-common-5.0.30.30-MP3RP3_RHEL4.i686.rpm VRTSvxvm-platform-5.0.30.30-MP3RP3_RHEL4.x86_64.rpm VRTSodm-common-5.0.30.30-MP3RP3_RHEL4.i686.rpm VRTSodm-platform-5.0.30.30-MP3RP3_RHEL4.x86_64.rpm

Table 1-11 Storage Foundation Cluster File System for Oracle RAC 5.0 MP3 RP3 RPMs

OS	Architecture	RPMs
RHEL 5	x86_64	VRTSaa-is-5.0.613.0-0.i686.rpm VRTScavf-5.0.30.20-MP3RP2a_GENERIC.noarch.rpm VRTSccg-5.0.613.0-0.i686.rpm VRTScmccc-5.0.30.20-MP3RP2_RHEL5.i686.rpm VRTScmcs-5.0.30.20-MP3RP2_RHEL5.i686.rpm VRTSdcli-5.0.30.00-GA_MP3_RHEL.i686.rpm VRTSddlpr-5.0.30.00-GA_MP3_RHEL5.i686.rpm VRTSfssdk-5.0.30.30-MP3RP3_RHEL5.i686.rpm VRTSgab-5.0.30.20-MP3RP2_RHEL5.x86_64.rpm VRTSllt-5.0.30.20-MP3RP2_RHEL5.x86_64.rpm VRTSob-3.3.1215.0-0.i686.rpm VRTSobc33-3.3.1215.0-0.i686.rpm VRTSvcs-5.0.30.20-MP3RP2_RHEL5.i686.rpm VRTSvcsag-5.0.30.20-MP3RP2_RHEL5.i686.rpm VRTSvmman-5.0.30.30-MP3RP3_GENERIC.noarch.rpm VRTSvmpro-5.0.30.00-MP3_RHEL5.i686.rpm VRTSvxfen-5.0.30.20-MP3RP2_RHEL5.x86_64.rpm VRTSvxfs-common-5.0.30.30-MP3RP3_RHEL5.i686.rpm VRTSvxfs-platform-5.0.30.30-MP3RP3_RHEL5.x86_64.rpm VRTSvxvm-common-5.0.30.30-MP3RP3_RHEL5.i686.rpm VRTSvxvm-platform-5.0.30.30-MP3RP3_RHEL5.x86_64.rpm VRTSodm-common-5.0.30.30-MP3RP3_RHEL5.i686.rpm VRTSodm-platform-5.0.30.30-MP3RP3_RHEL5.x86_64.rpm

Table 1-11 Storage Foundation Cluster File System for Oracle RAC 5.0 MP3 RP3 RPMs

OS	Architecture	RPMs
SLES 9	x86_64	VRTSaa-is-5.0.613.0-0.i686.rpm VRTScavf-5.0.30.20-MP3RP2a_GENERIC.noarch.rpm VRTSccg-5.0.613.0-0.i686.rpm VRTScmccc-5.0.30.20-MP3RP2_SLES9.i586.rpm VRTScmcs-5.0.30.20-MP3RP2_SLES9.i586.rpm VRTSdcli-5.0.30.00-GA_MP3_SLES.i586.rpm VRTSddlpr-5.0.30.00-GA_MP3_SLES9.i586.rpm VRTSfssdk-5.0.30.30-MP3RP3_SLES9.i586.rpm VRTSgab-5.0.30.20-MP3RP2_SLES9.x86_64.rpm VRTSllt-5.0.30.20-MP3RP2_SLES9.x86_64.rpm VRTSob-3.3.1215.0-0.i686.rpm VRTSobc33-3.3.1215.0-0.i686.rpm VRTSvcs-5.0.30.20-MP3RP2_SLES9.i586.rpm VRTSvcsag-5.0.30.20-MP3RP2_SLES9.i586.rpm VRTSvmman-5.0.30.30-MP3RP3_GENERIC.noarch.rpm VRTSvmpro-5.0.30.00-MP3_SLES9.i586.rpm VRTSvxfen-5.0.30.20-MP3RP2_SLES9.x86_64.rpm VRTSvxfs-common-5.0.30.30-MP3RP3_SLES9.i586.rpm VRTSvxfs-platform-5.0.30.30-MP3RP3_SLES9.x86_64.rpm VRTSvxvm-common-5.0.30.30-MP3RP3_SLES9.i586.rpm VRTSvxvm-platform-5.0.30.30-MP3RP3_SLES9.x86_64.rpm VRTSodm-common-5.0.30.30-MP3RP3_SLES9.i586.rpm VRTSodm-platform-5.0.30.30-MP3RP3_SLES9.x86_64.rpm

Table 1-11 Storage Foundation Cluster File System for Oracle RAC 5.0 MP3 RP3 RPMs

OS	Architecture	RPMs
SLES 10	x86_64	VRTSaa-is-5.0.613.0-0.i686.rpm VRTScavf-5.0.30.20-MP3RP2a_GENERIC.noarch.rpm VRTSccg-5.0.613.0-0.i686.rpm VRTScmccc-5.0.30.20-MP3RP2_SLES10.i586.rpm VRTScmcs-5.0.30.20-MP3RP2_SLES10.i586.rpm VRTSdcli-5.0.30.00-GA_MP3_SLES.i586.rpm VRTSddlpr-5.0.30.00-GA_MP3_SLES10.i586.rpm VRTSfssdk-5.0.30.30-MP3RP3_SLES10.i586.rpm VRTSgab-5.0.30.20-MP3RP2_SLES10.x86_64.rpm VRTSllt-5.0.30.20-MP3RP2_SLES10.x86_64.rpm VRTSob-3.3.1215.0-0.i686.rpm VRTSobc33-3.3.1215.0-0.i686.rpm VRTSvcs-5.0.30.20-MP3RP2_SLES10.i586.rpm VRTSvcsag-5.0.30.20-MP3RP2_SLES10.i586.rpm VRTSvmman-5.0.30.30-MP3RP3_GENERIC.noarch.rpm VRTSvmpro-5.0.30.00-MP3_SLES10.i586.rpm VRTSvxfen-5.0.30.20-MP3RP2_SLES10.x86_64.rpm VRTSvxfs-common-5.0.30.30-MP3RP3_SLES10.i586.rpm VRTSvxfs-platform-5.0.30.30-MP3RP3_SLES10.x86_64.rpm VRTSvxvm-common-5.0.30.30-MP3RP3_SLES10.i586.rpm VRTSvxvm-platform-5.0.30.30-MP3RP3_SLES10.x86_64.rpm VRTSodm-common-5.0.30.30-MP3RP3_SLES10.i586.rpm VRTSodm-platform-5.0.30.30-MP3RP3_SLES10.x86_64.rpm

Storage Foundation for DB2 RPMs

[Table 1-12](#) describes the Storage Foundation for DB2 RPMs that are included in this rolling patch:

Table 1-12 Storage Foundation for DB2 5.0 MP3 RP3 RPMs

OS	Architecture	RPMs
RHEL 4	x86_64	VRTScavf-5.0.30.20-MP3RP2a_GENERIC.noarch.rpm VRTSd2gui-common-5.0.30.30-MP3RP3_RHEL4.i686.rpm VRTSdb2ed-common-5.0.30.30-MP3RP3_RHEL4.i686.rpm VRTSdbcom-common-5.0.30.30-MP3RP3_RHEL4.i686.rpm VRTSdcli-5.0.30.00-GA_MP3_RHEL.i686.rpm VRTSddlpr-5.0.30.00-GA_MP3_RHEL4.i686.rpm VRTSfssdk-5.0.30.30-MP3RP3_RHEL4.i686.rpm VRTSgab-5.0.30.20-MP3RP2_RHEL4.x86_64.rpm VRTSllt-5.0.30.20-MP3RP2_RHEL4.x86_64.rpm VRTSllmconv-5.0.30.30-MP3RP3_RHEL4.i686.rpm VRTSvcs-5.0.30.20-MP3RP2_RHEL4.i686.rpm VRTSvcsag-5.0.30.20-MP3RP2_RHEL4.i686.rpm VRTSvmman-5.0.30.30-MP3RP3_GENERIC.noarch.rpm VRTSvmpro-5.0.30.00-MP3_RHEL4.i686.rpm VRTSvxfen-5.0.30.20-MP3RP2_RHEL4.x86_64.rpm VRTSvxfs-common-5.0.30.30-MP3RP3_RHEL4.i686.rpm VRTSvxfs-platform-5.0.30.30-MP3RP3_RHEL4.x86_64.rpm VRTSvxvm-common-5.0.30.30-MP3RP3_RHEL4.i686.rpm VRTSvxvm-platform-5.0.30.30-MP3RP3_RHEL4.x86_64.rpm

Table 1-12 Storage Foundation for DB2 5.0 MP3 RP3 RPMs

OS	Architecture	RPMs
RHEL 5	x86_64	VRTScavf-5.0.30.20-MP3RP2a_GENERIC.noarch.rpm VRTSd2gui-common-5.0.30.30-MP3RP3_RHEL5.i686.rpm VRTSdb2ed-common-5.0.30.30-MP3RP3_RHEL5.i686.rpm VRTSdbcom-common-5.0.30.30-MP3RP3_RHEL5.i686.rpm VRTSdcli-5.0.30.00-GA_MP3_RHEL.i686.rpm VRTSddlpr-5.0.30.00-GA_MP3_RHEL5.i686.rpm VRTSfssdk-5.0.30.30-MP3RP3_RHEL5.i686.rpm VRTSgab-5.0.30.20-MP3RP2_RHEL5.x86_64.rpm VRTSllt-5.0.30.20-MP3RP2_RHEL5.x86_64.rpm VRTSlmconv-5.0.30.30-MP3RP3_RHEL5.i686.rpm VRTSvcs-5.0.30.20-MP3RP2_RHEL5.i686.rpm VRTSvcsag-5.0.30.20-MP3RP2_RHEL5.i686.rpm VRTSvmman-5.0.30.30-MP3RP3_GENERIC.noarch.rpm VRTSvmpro-5.0.30.00-MP3_RHEL5.i686.rpm VRTSvxfen-5.0.30.20-MP3RP2_RHEL5.x86_64.rpm VRTSvxfs-common-5.0.30.30-MP3RP3_RHEL5.i686.rpm VRTSvxfs-platform-5.0.30.30-MP3RP3_RHEL5.x86_64.rpm VRTSvxvm-common-5.0.30.30-MP3RP3_RHEL5.i686.rpm VRTSvxvm-platform-5.0.30.30-MP3RP3_RHEL5.x86_64.rpm

Table 1-12 Storage Foundation for DB2 5.0 MP3 RP3 RPMs

OS	Architecture	RPMs
SLES 9	x86_64	VRTScavf-5.0.30.20-MP3RP2a_GENERIC.noarch.rpm VRTSd2gui-common-5.0.30.30-MP3RP3_SLES9.i586.rpm VRTSdb2ed-common-5.0.30.30-MP3RP3_SLES9.i586.rpm VRTSdbcom-common-5.0.30.30-MP3RP3_SLES9.i586.rpm VRTSdcli-5.0.30.00-GA_MP3_SLES.i586.rpm VRTSddlpr-5.0.30.00-GA_MP3_SLES9.i586.rpm VRTSfssdk-5.0.30.30-MP3RP3_SLES9.i586.rpm VRTSgab-5.0.30.20-MP3RP2_SLES9.x86_64.rpm VRTSllt-5.0.30.20-MP3RP2_SLES9.x86_64.rpm VRTSlmconv-5.0.30.30-MP3RP3_SLES9.i686.rpm VRTSvcs-5.0.30.20-MP3RP2_SLES9.i586.rpm VRTSvcsag-5.0.30.20-MP3RP2_SLES9.i586.rpm VRTSvmman-5.0.30.30-MP3RP3_GENERIC.noarch.rpm VRTSvmpro-5.0.30.00-MP3_SLES9.i586.rpm VRTSvxfen-5.0.30.20-MP3RP2_SLES9.x86_64.rpm VRTSvxfs-common-5.0.30.30-MP3RP3_SLES9.i586.rpm VRTSvxfs-platform-5.0.30.30-MP3RP3_SLES9.x86_64.rpm VRTSvxvm-common-5.0.30.30-MP3RP3_SLES9.i586.rpm VRTSvxvm-platform-5.0.30.30-MP3RP3_SLES9.x86_64.rpm

Table 1-12 Storage Foundation for DB2 5.0 MP3 RP3 RPMs

OS	Architecture	RPMs
SLES 10	x86_64	VRTScavf-5.0.30.20-MP3RP2a_GENERIC.noarch.rpm VRTSd2gui-common-5.0.30.30-MP3RP3_SLES10.i586.rpm VRTSdb2ed-common-5.0.30.30-MP3RP3_SLES10.i586.rpm VRTSdbcom-common-5.0.30.30-MP3RP3_SLES10.i586.rpm VRTSdcli-5.0.30.00-GA_MP3_SLES.i586.rpm VRTSddlpr-5.0.30.00-GA_MP3_SLES10.i586.rpm VRTSfssdk-5.0.30.30-MP3RP3_SLES10.i586.rpm VRTSgab-5.0.30.20-MP3RP2_SLES10.x86_64.rpm VRTSllt-5.0.30.20-MP3RP2_SLES10.x86_64.rpm VRTSlmconv-5.0.30.30-MP3RP3_SLES10.i686.rpm VRTSvcs-5.0.30.20-MP3RP2_SLES10.i586.rpm VRTSvcsag-5.0.30.20-MP3RP2_SLES10.i586.rpm VRTSvmman-5.0.30.30-MP3RP3_GENERIC.noarch.rpm VRTSvmpro-5.0.30.00-MP3_SLES10.i586.rpm VRTSvxfen-5.0.30.20-MP3RP2_SLES10.x86_64.rpm VRTSvxfs-common-5.0.30.30-MP3RP3_SLES10.i586.rpm VRTSvxfs-platform-5.0.30.30-MP3RP3_SLES10.x86_64.rpm VRTSvxvm-common-5.0.30.30-MP3RP3_SLES10.i586.rpm VRTSvxvm-platform-5.0.30.30-MP3RP3_SLES10.x86_64.rpm

Storage Foundation for Oracle RPMs

[Table 1-13](#) describes the Storage Foundation for Oracle RPMs that are included in this rolling patch:

Table 1-13 Storage Foundation for Oracle 5.0 MP3 RP3 RPMs

OS	Architecture	RPMs
RHEL 4	x86_64	VRTScavf-5.0.30.20-MP3RP2a_GENERIC.noarch.rpm VRTSdbcom-common-5.0.30.30-MP3RP3_RHEL4.i686.rpm VRTSdbed-common-5.0.30.30-MP3RP3_RHEL4.i686.rpm VRTSdcli-5.0.30.00-GA_MP3_RHEL.i686.rpm VRTSddlpr-5.0.30.00-GA_MP3_RHEL4.i686.rpm VRTSfssdk-5.0.30.30-MP3RP3_RHEL4.i686.rpm VRTSgab-5.0.30.20-MP3RP2_RHEL4.x86_64.rpm VRTSllt-5.0.30.20-MP3RP2_RHEL4.x86_64.rpm VRTSlmconv-5.0.30.30-MP3RP3_RHEL4.i686.rpm VRTSorgui-common-5.0.30.30-MP3RP3_RHEL4.i686.rpm VRTSvcs-5.0.30.20-MP3RP2_RHEL4.i686.rpm VRTSvcsag-5.0.30.20-MP3RP2_RHEL4.i686.rpm VRTSvmman-5.0.30.30-MP3RP3_GENERIC.noarch.rpm VRTSvmpro-5.0.30.00-MP3_RHEL4.i686.rpm VRTSvxfen-5.0.30.20-MP3RP2_RHEL4.x86_64.rpm VRTSvxfs-common-5.0.30.30-MP3RP3_RHEL4.i686.rpm VRTSvxfs-platform-5.0.30.30-MP3RP3_RHEL4.x86_64.rpm VRTSvxvm-common-5.0.30.30-MP3RP3_RHEL4.i686.rpm VRTSvxvm-platform-5.0.30.30-MP3RP3_RHEL4.x86_64.rpm VRTSodm-common-5.0.30.30-MP3RP3_RHEL4.i686.rpm VRTSodm-platform-5.0.30.30-MP3RP3_RHEL4.x86_64.rpm

Table 1-13 Storage Foundation for Oracle 5.0 MP3 RP3 RPMs

OS	Architecture	RPMs
RHEL 5	x86_64	VRTScavf-5.0.30.20-MP3RP2a_GENERIC.noarch.rpm VRTSdbcom-common-5.0.30.30-MP3RP3_RHEL5.i686.rpm VRTSdbed-common-5.0.30.30-MP3RP3_RHEL5.i686.rpm VRTSdcli-5.0.30.00-GA_MP3_RHEL.i686.rpm VRTSddlpr-5.0.30.00-GA_MP3_RHEL5.i686.rpm VRTSfssdk-5.0.30.30-MP3RP3_RHEL5.i686.rpm VRTSgab-5.0.30.20-MP3RP2_RHEL5.x86_64.rpm VRTSllt-5.0.30.20-MP3RP2_RHEL5.x86_64.rpm VRTSlmconv-5.0.30.30-MP3RP3_RHEL5.i686.rpm VRTSorgui-common-5.0.30.30-MP3RP3_RHEL5.i686.rpm VRTSvcs-5.0.30.20-MP3RP2_RHEL5.i686.rpm VRTSvcsag-5.0.30.20-MP3RP2_RHEL5.i686.rpm VRTSvmman-5.0.30.30-MP3RP3_GENERIC.noarch.rpm VRTSvmpro-5.0.30.00-MP3_RHEL5.i686.rpm VRTSvxfen-5.0.30.20-MP3RP2_RHEL5.x86_64.rpm VRTSvxfs-common-5.0.30.30-MP3RP3_RHEL5.i686.rpm VRTSvxfs-platform-5.0.30.30-MP3RP3_RHEL5.x86_64.rpm VRTSvxvm-common-5.0.30.30-MP3RP3_RHEL5.i686.rpm VRTSvxvm-platform-5.0.30.30-MP3RP3_RHEL5.x86_64.rpm VRTSodm-common-5.0.30.30-MP3RP3_RHEL5.i686.rpm VRTSodm-platform-5.0.30.30-MP3RP3_RHEL5.x86_64.rpm

Table 1-13 Storage Foundation for Oracle 5.0 MP3 RP3 RPMs

OS	Architecture	RPMs
SLES 9	x86_64	VRTScavf-5.0.30.20-MP3RP2a_GENERIC.noarch.rpm VRTSdbcom-common-5.0.30.30-MP3RP3_SLES9.i586.rpm VRTSdbed-common-5.0.30.30-MP3RP3_SLES9.i586.rpm VRTSdcli-5.0.30.00-GA_MP3_SLES.i586.rpm VRTSddlpr-5.0.30.00-GA_MP3_SLES9.i586.rpm VRTSfssdk-5.0.30.30-MP3RP3_SLES9.i586.rpm VRTSgab-5.0.30.20-MP3RP2_SLES9.x86_64.rpm VRTSllt-5.0.30.20-MP3RP2_SLES9.x86_64.rpm VRTSllmconv-5.0.30.30-MP3RP3_SLES9.i686.rpm VRTSorgui-common-5.0.30.30-MP3RP3_SLES9.i586.rpm VRTSvcs-5.0.30.20-MP3RP2_SLES9.i586.rpm VRTSvcsag-5.0.30.20-MP3RP2_SLES9.i586.rpm VRTSvmman-5.0.30.30-MP3RP3_GENERIC.noarch.rpm VRTSvmpro-5.0.30.00-MP3_SLES9.i586.rpm VRTSvxfen-5.0.30.20-MP3RP2_SLES9.x86_64.rpm VRTSvxfs-common-5.0.30.30-MP3RP3_SLES9.i586.rpm VRTSvxfs-platform-5.0.30.30-MP3RP3_SLES9.x86_64.rpm VRTSvxvm-common-5.0.30.30-MP3RP3_SLES9.i586.rpm VRTSvxvm-platform-5.0.30.30-MP3RP3_SLES9.x86_64.rpm VRTSodm-common-5.0.30.30-MP3RP3_SLES9.i586.rpm VRTSodm-platform-5.0.30.30-MP3RP3_SLES9.x86_64.rpm

Table 1-13 Storage Foundation for Oracle 5.0 MP3 RP3 RPMs

OS	Architecture	RPMs
SLES 10	x86_64	VRTScavf-5.0.30.20-MP3RP2a_GENERIC.noarch.rpm VRTSdbcom-common-5.0.30.30-MP3RP3_SLES10.i586.rpm VRTSdbed-common-5.0.30.30-MP3RP3_SLES10.i586.rpm VRTSdcli-5.0.30.00-GA_MP3_SLES.i586.rpm VRTSddlpr-5.0.30.00-GA_MP3_SLES10.i586.rpm VRTSfssdk-5.0.30.30-MP3RP3_SLES10.i586.rpm VRTSgab-5.0.30.20-MP3RP2_SLES10.x86_64.rpm VRTSllt-5.0.30.20-MP3RP2_SLES10.x86_64.rpm VRTSlmconv-5.0.30.30-MP3RP3_SLES10.i686.rpm VRTSorgui-common-5.0.30.30-MP3RP3_SLES10.i586.rpm VRTSvcs-5.0.30.20-MP3RP2_SLES10.i586.rpm VRTSvcsag-5.0.30.20-MP3RP2_SLES10.i586.rpm VRTSvmman-5.0.30.30-MP3RP3_GENERIC.noarch.rpm VRTSvmpro-5.0.30.00-MP3_SLES10.i586.rpm VRTSvxfen-5.0.30.20-MP3RP2_SLES10.x86_64.rpm VRTSvxfs-common-5.0.30.30-MP3RP3_SLES10.i586.rpm VRTSvxfs-platform-5.0.30.30-MP3RP3_SLES10.x86_64.rpm VRTSvxvm-common-5.0.30.30-MP3RP3_SLES10.i586.rpm VRTSvxvm-platform-5.0.30.30-MP3RP3_SLES10.x86_64.rpm VRTSodm-common-5.0.30.30-MP3RP3_SLES10.i586.rpm VRTSodm-platform-5.0.30.30-MP3RP3_SLES10.x86_64.rpm

Volume Manager RPMs

[Table 1-14](#) describes the Volume Manager RPMs that are included in this rolling patch:

Table 1-14 Volume Manager 5.0 MP3 RP3 RPMs

OS	Architecture	RPMs
RHEL 4	x86_64	VRTSaa-is-5.0.613.0-0.i686.rpm VRTSccg-5.0.613.0-0.i686.rpm VRTSdcli-5.0.30.00-GA_MP3_RHEL.i686.rpm VRTSddlpr-5.0.30.00-GA_MP3_RHEL4.i686.rpm VRTSslmconv-5.0.30.30-MP3RP3_RHEL4.i686.rpm VRTSob-3.3.1215.0-0.i686.rpm VRTSobc33-3.3.1215.0-0.i686.rpm VRTSvmman-5.0.30.30-MP3RP3_GENERIC.noarch.rpm VRTSvmpro-5.0.30.00-MP3_RHEL4.i686.rpm VRTSvxvm-common-5.0.30.30-MP3RP3_RHEL4.i686.rpm VRTSvxvm-platform-5.0.30.30-MP3RP3_RHEL4.x86_64.rpm
RHEL 5	x86_64	VRTSaa-is-5.0.613.0-0.i686.rpm VRTSccg-5.0.613.0-0.i686.rpm VRTSdcli-5.0.30.00-GA_MP3_RHEL.i686.rpm VRTSddlpr-5.0.30.00-GA_MP3_RHEL5.i686.rpm VRTSslmconv-5.0.30.30-MP3RP3_RHEL5.i686.rpm VRTSob-3.3.1215.0-0.i686.rpm VRTSobc33-3.3.1215.0-0.i686.rpm VRTSvmman-5.0.30.30-MP3RP3_GENERIC.noarch.rpm VRTSvmpro-5.0.30.00-MP3_RHEL5.i686.rpm VRTSvxvm-common-5.0.30.30-MP3RP3_RHEL5.i686.rpm VRTSvxvm-platform-5.0.30.30-MP3RP3_RHEL5.x86_64.rpm

Table 1-14 Volume Manager 5.0 MP3 RP3 RPMs

OS	Architecture	RPMs
SLES 9	x86_64	VRTSaa-is 5.0.613.0-0.i686.rpm VRTSccg-5.0.613.0-0.i686.rpm VRTSdcli-5.0.30.00-GA_MP3_SLES.i586.rpm VRTSddlpr-5.0.30.00-GA_MP3_SLES9.i586.rpm VRTSvmconv-5.0.30.30-MP3RP3_SLES9.i686.rpm VRTSob-3.3.1215.0-0.i686.rpm VRTSobc33-3.3.1215.0-0.i686.rpm VRTSvmman-5.0.30.30-MP3RP3_GENERIC.noarch.rpm VRTSvmpro-5.0.30.00-MP3_SLES9.i586.rpm VRTSvxvm-common-5.0.30.30-MP3RP3_SLES9.i586.rpm VRTSvxvm-platform-5.0.30.30-MP3RP3_SLES9.x86_64.rpm
SLES 10	x86_64	VRTSaa-is 5.0.613.0-0.i686.rpm VRTSccg-5.0.613.0-0.i686.rpm VRTSdcli-5.0.30.00-GA_MP3_SLES.i586.rpm VRTSddlpr-5.0.30.00-GA_MP3_SLES10.i586.rpm VRTSvmconv-5.0.30.30-MP3RP3_SLES10.i686.rpm VRTSob-3.3.1215.0-0.i686.rpm VRTSobc33-3.3.1215.0-0.i686.rpm VRTSvmman-5.0.30.30-MP3RP3_GENERIC.noarch.rpm VRTSvmpro-5.0.30.00-MP3_SLES10.i586.rpm VRTSvxvm-common-5.0.30.30-MP3RP3_SLES10.i586.rpm VRTSvxvm-platform-5.0.30.30-MP3RP3_SLES10.x86_64.rpm

Veritas Cluster Server RPMs

Table 1-15 describes the Veritas Cluster Server RPMs that are included in this rolling patch:

Table 1-15 Veritas Cluster Server 5.0 MP3 RP3 RPMs

OS	Architecture	RPMs
RHEL 4	x86	VRTSllt-5.0.30.20-MP3RP2_RHEL4.i686.rpm VRTSvcsag-5.0.30.20-MP3RP2_RHEL4.i686.rpm VRTSgab-5.0.30.20-MP3RP2_RHEL4.i686.rpm VRTSvcs-5.0.30.20-MP3RP2_RHEL4.i686.rpm VRTSvxfen-5.0.30.20-MP3RP2_RHEL4.i686.rpm
RHEL 4	x86_64	VRTSllt-5.0.30.20-MP3RP2_RHEL4.x86_64.rpm VRTSvcsag-5.0.30.20-MP3RP2_RHEL4.i686.rpm VRTSgab-5.0.30.20-MP3RP2_RHEL4.x86_64.rpm VRTSvcs-5.0.30.20-MP3RP2_RHEL4.i686.rpm VRTSvxfen-5.0.30.20-MP3RP2_RHEL4.x86_64.rpm
RHEL 5	x86	VRTSllt-5.0.30.20-MP3RP2_RHEL5.i686.rpm VRTSvcsag-5.0.30.20-MP3RP2_RHEL5.i686.rpm VRTSgab-5.0.30.20-MP3RP2_RHEL5.i686.rpm VRTSvcs-5.0.30.20-MP3RP2_RHEL5.i686.rpm VRTSvxfen-5.0.30.20-MP3RP2_RHEL5.i686.rpm
RHEL 5	x86_64	VRTSllt-5.0.30.20-MP3RP2_RHEL5.x86_64.rpm VRTSvcsag-5.0.30.20-MP3RP2_RHEL5.i686.rpm VRTSgab-5.0.30.20-MP3RP2_RHEL5.x86_64.rpm VRTSvcs-5.0.30.20-MP3RP2_RHEL5.i686.rpm VRTSvxfen-5.0.30.20-MP3RP2_RHEL5.x86_64.rpm
SLES 9	x86	VRTSllt-5.0.30.20-MP3RP2_SLES9.i586.rpm VRTSvcsag-5.0.30.20-MP3RP2_SLES9.i586.rpm VRTSgab-5.0.30.20-MP3RP2_SLES9.i586.rpm VRTSvcs-5.0.30.20-MP3RP2_SLES9.i586.rpm VRTSvxfen-5.0.30.20-MP3RP2_SLES9.i686.rpm

Table 1-15 Veritas Cluster Server 5.0 MP3 RP3 RPMs

OS	Architecture	RPMs
SLES 9	x86_64	VRTSllt-5.0.30.20-MP3RP2_SLES9.x86_64.rpm VRTSvcsag-5.0.30.20-MP3RP2_SLES9.i586.rpm VRTSgab-5.0.30.20-MP3RP2_SLES9.x86_64.rpm VRTSvcs-5.0.30.20-MP3RP2_SLES9.i586.rpm VRTSvxfen-5.0.30.20-MP3RP2_SLES9.x86_64.rpm
SLES 10	x86	VRTSllt-5.0.30.20-MP3RP2_SLES10.i586.rpm VRTSvcsag-5.0.30.20-MP3RP2_SLES10.i586.rpm VRTSgab-5.0.30.20-MP3RP2_SLES10.i586.rpm VRTSvcs-5.0.30.20-MP3RP2_SLES10.i586.rpm VRTSvxfen-5.0.30.20-MP3RP2_SLES10.i686.rpm
SLES 10	x86_64	VRTSllt-5.0.30.20-MP3RP2_SLES9.x86_64.rpm VRTSvcsag-5.0.30.20-MP3RP2_SLES9.i586.rpm VRTSgab-5.0.30.20-MP3RP2_SLES9.x86_64.rpm VRTSvcs-5.0.30.20-MP3RP2_SLES9.i586.rpm VRTSvxfen-5.0.30.20-MP3RP2_SLES9.x86_64.rpm

Veritas Cluster Server Agent RPMs

[Table 1-16](#) describes the Veritas Cluster Server Agent RPMs that are included in this rolling patch:

Table 1-16 Veritas Cluster Server 5.0 MP3 RP3 Agents RPMs

OS	Architecture	RPMs
RHEL 4	x86, x86_64	VRTSvcsdb-5.0.30.30-MP3RP3_GENERIC.noarch.rpm VRTSvcsor-5.0.30.30-MP3RP3_RHEL4.i686.rpm VRTSvcssy-5.0.30.30-MP3RP3_RHEL4.i686.rpm
RHEL 5	x86, x86_64	VRTSvcsdb-5.0.30.30-MP3RP3_GENERIC.noarch.rpm VRTSvcsor-5.0.30.30-MP3RP3_RHEL5.i686.rpm VRTSvcssy-5.0.30.30-MP3RP3_RHEL5.i686.rpm
SLES 9	x86, x86_64	VRTSvcsdb-5.0.30.30-MP3RP3_GENERIC.noarch.rpm VRTSvcsor-5.0.30.30-MP3RP3_SLES9.i586.rpm VRTSvcssy-5.0.30.30-MP3RP3_SLES9.i586.rpm

Table 1-16 Veritas Cluster Server 5.0 MP3 RP3 Agents RPMs

OS	Architecture	RPMs
SLES 10	x86, x86_64	VRTSvcsdb-5.0.30.30-MP3RP3_GENERIC.noarch.rpm VRTSvcsor-5.0.30.30-MP3RP3_SLES10.i586.rpm VRTSvcssy-5.0.30.30-MP3RP3_SLES10.i586.rpm

Cluster Management Console RPMs

[Table 1-17](#) describes the CMC RPMs that are included in this rolling patch:

Table 1-17 Cluster Manager Console for VCS RPMs

OS	Architecture	RPMs
RHEL 4	x86, x86_64	VRTScmcs-5.0.30.20-MP3RP2_RHEL4.i686.rpm VRTScmccc-5.0.30.20-MP3RP2_RHEL4.i686.rpm
RHEL 5	x86, x86_64	VRTScmcs-5.0.30.20-MP3RP2_RHEL5.i686.rpm VRTScmccc-5.0.30.20-MP3RP2_RHEL5.i686.rpm
SLES 9	x86, x86_64	VRTScmcs-5.0.30.20-MP3RP2_SLES9.i586.rpm VRTScmccc-5.0.30.20-MP3RP2_SLES9.i586.rpm
SLES 10	x86, x86_64	VRTScmcs-5.0.30.20-MP3RP2_SLES10.i586.rpm VRTScmccc-5.0.30.20-MP3RP2_SLES10.i586.rpm

Installing the Veritas software for the first time

This section describes how to install a Storage Foundation and High Availability Solutions product for the first time on a node and install 5.0 MP3 RP3.

- n [Installing Storage Foundation and 5.0 MP3 RP3](#)
- n [Installing Storage Foundation Cluster File System and 5.0 MP3 RP3](#)
- n [Installing Storage Foundation Cluster File System for Oracle RAC and 5.0 MP3 RP3](#)
- n [Installing Veritas Cluster Server and 5.0 MP3 RP3](#)

Installing Storage Foundation and 5.0 MP3 RP3

This section describes how to install Storage Foundation for the first time on a node and install 5.0 MP3 RP3.

Review the *Veritas Storage Foundation 5.0 MP3 Installation Guide* for pre-installation instructions at the following URL:

ftp://exftpp.symantec.com/pub/support/products/Foundation_Suite/306937.pdf

Also review the *Veritas Storage Foundation 5.0 MP3 Release Notes* for important release information at the following URL:

ftp://exftpp.symantec.com/pub/support/products/Foundation_Suite/306947.pdf

To install Storage Foundation and 5.0 MP3 RP3

- 1 Install the Storage Foundation 5.0 MP3 software from the release disc.
For example, if you are installing the Storage Foundation software, enter the following command from the top-level directory of the mounted CD:

```
# ./installsf -installonly [-rsh] node1 node2 ... nodeN
```

The `-installonly` option is required to perform the installation without configuring the software. For other products, substitute the appropriate script.
- 2 Review the system requirements and the installation prerequisites for upgrading to 5.0 MP3 RP3.
 - n See “[System requirements](#)” on page 4.
 - n See “[Prerequisites for upgrading to 5.0 MP3 RP3](#)” on page 56.
- 3 Run the following command to change to the RPMs directory. For example:

```
# cd /extract_dir/dvdno-os/dist_arch/product/rpms
```

where `extract_dir` is the directory path under the location you extracted the downloaded 5.0 MP3 RP3 archive file.
where `dvdno-os` is either `dvd1-redhatlinux` or `dvd2-suselinux`.
where `dist` is either `rhel4`, `rhel5`, `sles9`, or `sles10`.

n If you are running OEL 4, use *rhel4* for the *dist* name.

n If you are running OEL 5, use *rhel5* for the *dist* name.

where *arch* is either *i686*, or *x86_64*.

where *product* is the name of the product either *storage_foundation*, *storage_foundation_for_db2*, or *storage_foundation_for_oracle* depending on the product you are installing.

- 4 Run the following command to upgrade manually to 5.0 MP3 RP3.

```
# rpm -Uvh *.rpm
```

See “[RPMs included in this rolling patch](#)” on page 22.

- 5 Run the same installation script that you used in [step 1](#), this time specifying the `-configure` option to configure the software. For example,

```
# ./installsf -configure [-rsh] node1 node2 ... nodeN
```

For other products, substitute the appropriate script.

See the *Veritas Storage Foundation 5.0 MP3 Installation Guide* for more information on configuring Storage Foundation and High Availability products.

- 6 Restart the node.

Installing Storage Foundation Cluster File System and 5.0 MP3 RP3

This section describes how to install Storage Foundation Cluster File System for the first time on a node and install 5.0 MP3 RP3.

Review the *Veritas Storage Foundation 5.0 MP3 Installation Guide* for SFCFS pre-installation instructions at the following URL:

ftp://exftpp.symantec.com/pub/support/products/Foundation_Suite/306937.pdf

Also review the *Veritas Storage Foundation 5.0 MP3 Release Notes* for important SFCFS release information at the following URL:

ftp://exftpp.symantec.com/pub/support/products/Foundation_Suite/306947.pdf

To install Storage Foundation Cluster File System and 5.0 MP3 RP3

- 1 Install the Storage Foundation Cluster File System 5.0 MP3 software from the release disc.

For example, if you are installing the Storage Foundation Cluster File System software, enter the following command from the top-level directory of the mounted CD:

```
# ./installsfdfs -installonly [-rsh] node1 node2 ... nodeN
```

The `-installonly` option is required to perform the installation without configuring the software. For other products, substitute the appropriate script.

- 2 Review the system requirements and the installation prerequisites for upgrading to 5.0 MP3 RP3.

n See “[System requirements](#)” on page 4.

n See “[Prerequisites for upgrading to 5.0 MP3 RP3](#)” on page 56.

- 3 Run the following command to change to the RPMs directory. For example:

```
# cd /extract_dir/dvdno-os/dist_arch/product/rpms
```

where `extract_dir` is the directory path under the location you extracted the downloaded 5.0 MP3 RP3 archive file.

where `dvdno-os` is either `dvd1-redhatlinux` or `dvd2-suselinux`.

where `dist` is either `rhel4`, `rhel5`, `sles9`, or `sles10`.

n If you are running OEL 4, use `rhel4` for the `dist` name.

n If you are running OEL 5, use `rhel5` for the `dist` name.

where `arch` is either `i686`, or `x86_64`.

where `product` is `storage_foundation_cluster_file_system`.

- 4 Run the following command to upgrade manually to 5.0 MP3 RP3.

```
# rpm -Uvh *.rpm
```

See “[RPMs included in this rolling patch](#)” on page 22.

- 5 Run the same installation script that you used in [step 1](#), this time specifying the `-configure` option to configure the software. For example,


```
# ./installsfcfs -configure [-rsh] node1 node2 ... nodeN
```

See the *Veritas Storage Foundation 5.0 MP3 Installation Guide* for more SFCFS information.

- 6 Restart the node.

Installing Storage Foundation Cluster File System for Oracle RAC and 5.0 MP3 RP3

This section describes how to install Storage Foundation Cluster File System for Oracle RAC for the first time on a node and install 5.0 MP3 RP3.

Also review the *Veritas Storage Foundation 5.0 MP3 Release Notes* for important SFCFS release information at the following URL:

ftp://exftpp.symantec.com/pub/support/products/Foundation_Suite/306947.pdf

To install Storage Foundation Cluster File System for Oracle RAC and 5.0 MP3 RP3

- 1 Install the Storage Foundation Cluster File System for Oracle RAC 5.0 MP3 software from the release disc.

For example, if you are installing the Storage Foundation Cluster File System for Oracle RAC software, enter the following command from the top-level directory of the mounted CD:

```
# ./installsfcfsrac -installonly [-rsh] node1 node2 ... nodeN
```

The `-installonly` option is required to perform the installation without configuring the software.

- 2 Review the system requirements and the installation prerequisites for upgrading to 5.0 MP3 RP3.

n See “[System requirements](#)” on page 4.

See “[Prerequisites for upgrading to 5.0 MP3 RP3](#)” on page 56.

- 3 Run the following command to change to the RPMs directory. For example:

```
# cd /extract_dir/dvdno-os/dist_arch/product/rpms
```

where *extract_dir* is the directory path under the location you extracted the downloaded 5.0 MP3 RP3 archive file.
where *dvdno-os* is either *dvd1-redhatlinux* or *dvd2-suselinux*.
where *dist* is either *rhel4*, *rhel5*, *sles9*, or *sles10*.
 - n If you are running OEL 4, use *rhel4* for the *dist* name.
 - n If you are running OEL 5, use *rhel5* for the *dist* name.where *arch* is *x86_64*.
where *product* is
storage_foundation_cluster_file_system_for_oracle_rac.
- 4 Run the following command to upgrade manually to 5.0 MP3 RP3.

```
# rpm -Uvh *.rpm
```

See “RPMs included in this rolling patch” on page 22.
- 5 Run the same installation script that you used in [step 1](#), this time specifying the `-configure` option to configure the software. For example,

```
# ./installsfcsrac -configure [-rsh] node1 node2 ... nodeN
```
- 6 Restart the node.

Installing Veritas Cluster Server and 5.0 MP3 RP3

This section describes how to install VCS for the first time on a node and install 5.0 MP3 RP3.

Review the *Veritas Cluster Server 5.0MP3 Installation Guide* for pre-installation instructions at the following URL:

http://sfdoccentral.symantec.com/sf/5.0MP3/linux/pdf/vcs_install.pdf

Also review the *Veritas Cluster Server 5.0 MP3 Release Notes* for important release information at the following URL:

http://sfdoccentral.symantec.com/sf/5.0MP3/linux/pdf/vcs_notes.pdf

To install Veritas Cluster Server and 5.0MP3RP3

- 1 Install the Veritas Cluster Server 5.0 MP3 software from the release disc, using the following command, from the top-level directory of the mounted disc:

```
# ./installvcs -installonly [-rsh] node1 node2 ... node
```

The `-installonly` option is required to perform the installation without configuring the software.
- 2 Review the system requirements and the installation prerequisites for upgrading to 5.0 MP3 RP3.
 - n See “[System requirements](#)” on page 4.

- n See [“Prerequisites for upgrading to 5.0 MP3 RP3”](#) on page 56.
- 3 Run the following command to change to the RPMs directory. For example:

```
# cd /extract_dir/dvdno-os/dist_arch/cluster_server/rpms
```

where,
extract_dir is the directory path under the location you extracted the downloaded 5.0 MP3 RP3 archive file.
dvdno-os is either dvd1-redhatlinux or dvd2-suselinux.
dist is either rhel4, rhel5, sles9, or sles10.
 - n If you are running OEL 4, use rhel4 for the *dist* name.
 - n If you are running OEL 5, use rhel5 for the *dist* name.*arch* is either i586, i686, or x86_64.
- 4 Run the following command to upgrade manually to 5.0 MP3 RP3.

```
# rpm -Uvh *.rpm
```

See [“RPMs included in this rolling patch”](#) on page 22
- 5 Run the same installation script that you used in step 1, this time specifying the `-configure` option to configure the software. For example,

```
# ./installvcs -configure [-rsh] node1 node2 ... node
```

For more information on installing and configuring Veritas Cluster Server, see the *Veritas Cluster Server 5.0 MP3 Installation Guide*.
- 6 Restart the node.

Prerequisites for upgrading to 5.0 MP3 RP3

This section describes the prerequisites for upgrading 5.0 MP3 RP3.

- n [Prerequisites on Storage Foundation](#)
- n [Prerequisites on Storage Foundation Cluster File System](#)
- n [Prerequisites on Storage Foundation Cluster File System for Oracle RAC](#)
- n [Prerequisites on Storage Foundation for Oracle](#)
- n [Prerequisites on Storage Foundation for Oracle HA](#)
- n [Prerequisites on Storage Foundation for DB2](#)
- n [Prerequisites on Storage Foundation for DB2 HA](#)
- n [Prerequisites on Veritas Cluster Server](#)

Prerequisites on Storage Foundation

You must have the following operating system and Storage Foundation release installed on the system before you upgrade to 5.0 MP3 RP3:

Table 1-18 Operating system and Storage Foundation release

Operating system	Product release
RHEL 4	Storage Foundation 5.0 MP3
RHEL 5	Storage Foundation 5.0 MP3
OEL 4	Storage Foundation 5.0 MP3
OEL 5	Storage Foundation 5.0 MP3
SLES 9	Storage Foundation 5.0 MP3
SLES 10	Storage Foundation 5.0 MP3

Prerequisites on Storage Foundation Cluster File System

You must have the following operating system and SFCFS release installed on the system before you upgrade to 5.0 MP3 RP3:

Table 1-19 Operating system and SFCFS release

Operating system	Product release
RHEL 4	SFCFS 5.0 MP3
RHEL 5	SFCFS 5.0 MP3

Table 1-19 Operating system and SFCFS release

Operating system	Product release
OEL 4	SFCFS 5.0 MP3
OEL 5	SFCFS 5.0 MP3
SLES 9	SFCFS 5.0 MP3
SLES 10	SFCFS 5.0 MP3

Prerequisites on Storage Foundation Cluster File System for Oracle RAC

You must have the following operating system and SFCFS for Oracle RAC release installed on the system before you upgrade to 5.0 MP3 RP3:

Table 1-20 Operating system and SFCFS for Oracle RAC release

Operating system	Product release
RHEL 4	SFCFS for Oracle RAC 5.0 MP3
RHEL 5	SFCFS for Oracle RAC 5.0 MP3
OEL 4	SFCFS for Oracle RAC 5.0 MP3
OEL 5	SFCFS for Oracle RAC 5.0 MP3
SLES 9	SFCFS for Oracle RAC 5.0 MP3
SLES 10	SFCFS for Oracle RAC 5.0 MP3

Prerequisites on Storage Foundation for Oracle

You must have the following operating system and SF for Oracle release installed on the system before you upgrade to 5.0 MP3 RP3:

Table 1-21 Operating system and SF for Oracle release

Operating system	Product release
RHEL 4	SF for Oracle 5.0 MP3
RHEL 5	SF for Oracle 5.0 MP3
OEL 4	SF for Oracle 5.0 MP3
OEL 5	SF for Oracle 5.0 MP3
SLES 9	SF for Oracle 5.0 MP3

Table 1-21 Operating system and SF for Oracle release

Operating system	Product release
SLES 10	SF for Oracle 5.0 MP3

Prerequisites on Storage Foundation for Oracle HA

You must have the following operating system and SF for Oracle HA release installed on the system before you upgrade to 5.0 MP3 RP3:

Table 1-22 Operating system and SF for Oracle HA release

Operating system	Product release
RHEL 4	SF for Oracle HA 5.0 MP3
RHEL 5	SF for Oracle HA 5.0 MP3
OEL 4	SF for Oracle HA 5.0 MP3
OEL 5	SF for Oracle HA 5.0 MP3
SLES 9	SF for Oracle HA 5.0 MP3
SLES 10	SF for Oracle HA 5.0 MP3

Prerequisites on Storage Foundation for DB2

You must have the following operating system and SF for DB2 release installed on the system before you upgrade to 5.0 MP3 RP3:

Table 1-23 Operating system and SF for DB2 release

Operating system	Product release
RHEL 4	SF for DB2 5.0 MP3
RHEL 5	SF for DB2 5.0 MP3
OEL 4	SF for DB2 5.0 MP3
OEL 5	SF for DB2 5.0 MP3
SLES 9	SF for DB2 5.0 MP3
SLES 10	SF for DB2 5.0 MP3

Prerequisites on Storage Foundation for DB2 HA

You must have the following operating system and SF for DB2 HA release installed on the system before you upgrade to 5.0 MP3 RP3:

Table 1-24 Operating system and SFCFS for DB2 HA release

Operating system	Product release
RHEL 4	SF for DB2 HA 5.0 MP3
RHEL 5	SF for DB2 HA 5.0 MP3
OEL 4	SF for DB2 HA 5.0 MP3
OEL 5	SF for DB2 HA 5.0 MP3
SLES 9	SF for DB2 HA 5.0 MP3
SLES 10	SF for DB2 HA 5.0 MP3

Prerequisites on Veritas Cluster Server

You must have the following operating system and VCS release installed on the system before you upgrade to 5.0 MP3 RP3:

Table 1-25 Operating system and VCS release

Operating system	Product release
RHEL 4	VCS 5.0 MP3
RHEL 5	VCS 5.0 MP3
OEL 4	VCS 5.0 MP3
OEL 5	VCS 5.0 MP3
SLES 9	VCS 5.0 MP3
SLES 10	VCS 5.0 MP3

Upgrading 5.0 MP3 to 5.0 MP3 RP3

This section describes how to upgrade from 5.0 MP3 to 5.0 MP3 RP3. You can upgrade to 5.0 MP3 RP3 only if you have installed and configured the 5.0 MP3 version of the product.

The operating system must be one of the supported operating systems, ref to [“System requirements”](#) on page 4

If you need to upgrade the operating system, ref to [“Upgrading the operating system and upgrading to 5.0 MP3 RP3”](#) on page 80.

This section includes the following topics:

- n [Upgrading to 5.0 MP3 RP3 on a cluster](#)
Use the procedures to upgrade to 5.0 MP3 RP3 on a cluster that has VCS, SFHA, SF for Oracle HA or SF for DB2 HA, SFCFS, SFCFS HA, SFCFS for Oracle RAC installed.
- n [Upgrading to 5.0 MP3 RP3 on a standalone system](#)
Use the procedure to upgrade to 5.0 MP3 RP3 on a system that has Storage Foundation, SF for Oracle, or SF for DB2 installed.

Upgrading to 5.0 MP3 RP3 on a cluster

Upgrading on a cluster requires stopping cluster failover functionality during the entire procedure. However, if you use SFCFS and Cluster Volume Manager (CVM), the SFCFS and CVM services remain available.

The following are the stages of upgrading on a cluster:

- 1 Select one or a group of nodes to upgrade first, and leave the other nodes with VCS and the other applications running.
- 2 Freeze service groups and stop VCS on the selected group of nodes.
- 3 Take the first group of nodes offline and install the software patches.
- 4 Take the second group of nodes offline.
- 5 Bring the first group (with the newly installed patches) online to restart cluster failover services.
- 6 Follow [step 1](#) through [step 3](#) for the second group of nodes. The cluster is fully restored.

Depending on your cluster’s configuration, select one of the following procedures to upgrade to 5.0 MP3 RP3:

- n [Upgrading to 5.0 MP3 RP3 on a SFCFS cluster](#)
- n [Upgrading to 5.0 MP3 RP3 on a SFCFS for Oracle RAC cluster](#)

- n [Upgrading to 5.0 MP3 RP3 on a Storage Foundation HA cluster](#)
- n [Upgrading to 5.0 MP3 RP3 on a VCS cluster](#)

Upgrading to 5.0 MP3 RP3 on a SFCFS cluster

The following procedure describes upgrading on a SFCFS cluster.

To upgrading to 5.0 MP3 RP3 on a SFCFS cluster

- 1 Log in as superuser.
- 2 Verify that `/opt/VRTS/bin` is in your PATH so you can execute all product commands.
- 3 Select the group of nodes that are to be upgraded. On each node in the group being upgraded, offline the group:

```
# hagr -offline group -sys nodename01
# hagr -offline group -sys nodename02
# hagr -offline group -sys nodename03
# hagr -offline group -sys nodename04
```

where *group* is the VCS service group that has the CVMVolDg and CFSSMount resource.

where *nodenameN* is the node names in the cluster.

Repeat this step for each SFCFS service group.

- 4 If you have a failover service group, switch the service group to another node that is running:

```
# hagr -switch service_group -to nodename
```
- 5 From any node in the cluster, make the VCS configuration writable:

```
# haconf -makerw
```
- 6 Add an additional argument to the CFSSMount resource type:

```
# hatype -modify CFSSMount ArgList -add Primary
```
- 7 Enter the following command to freeze HA service group operations on each node:

```
# hasys -freeze -persistent nodename
```
- 8 Make the configuration read-only:

```
# haconf -dump -makero
```
- 9 On the group of nodes that are to be upgraded first, and follow [step 10](#) through [step 36](#) for these nodes.
- 10 Stop VCS by entering the following command on each node in the group being upgraded:

```
# hastop -local
```
- 11 Stop the VCS command server:

```
# killall CmdServer
```

- 12 Stop ODM, GMS, cluster fencing, GAB, and LLT in the following order:

```
# /etc/init.d/vxodm stop
# /etc/init.d/vxgms stop
# /etc/init.d/vxfen stop
# /etc/init.d/gab stop
# /etc/init.d/llt stop
```

- 13 Run the following command to check if each node's root disk is under VxVM control.

```
# df -v /
```

The root disk is under VxVM control if `/dev/vx/dsk/rootvol` is listed as being mounted as the root (`/`) file system. If so, unmirror and unencapsulate the root disk as described in the following steps:

- a Use the `vxplex` command to remove all the plexes of the volumes `rootvol`, `swapvol`, `usr`, `var`, `opt` and `home` that are on disks other than the root disk.

For example, the following command removes the plexes `mirrootvol-01`, and `mirswapvol-01` that are configured on a disk other than the root disk:

```
# vxplex -o rm dis mirrootvol-01 mirswapvol-01
```

Note: Do not remove the plexes on the root disk that correspond to the original disk partitions.

- b Enter the following command to convert all the encapsulated volumes in the root disk back to being accessible directly through disk partitions instead of through volume devices. There must be at least one other disk in the `rootdg` disk group in addition to the root disk for `vxunroot` to succeed.

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

Following the removal of encapsulation, the system is rebooted from the unencapsulated root disk.

- 14 If required, you can upgrade the nodes at this stage, and patch them to a supported kernel version.

See “[System requirements](#)” on page 4.

- 15 On each node, use the following command to check if any Storage Checkpoints are mounted:

```
# df -T | grep vxfs
```

If any Storage Checkpoints are mounted, on each node in the cluster unmount all Storage Checkpoints.

```
# umount /checkpoint_name
```

- 16 On each node, use the following command to check if any VxFS file systems are mounted:

```
# df -T | grep vxfs
```

- a If any VxFS file systems are present, on each node in the cluster unmount all the VxFS file systems:

```
# umount /filesystem
```

- 17 If you have created any Veritas Volume Replicator (VVR) replicated volume groups (RVGs) on your system, perform the following steps:

- a Stop all applications that are involved in replication. For example, if a data volume contains a file system, unmount it.

- b Use the `vrxvrg stop` command to stop each RVG individually:

```
# vxrvrg -g diskgroup stop rvg_name
```

- c On the Primary node, use the `vxrlink status` command to verify that all RLINKs are up-to-date:

```
# vxrlink -g diskgroup status rlink_name
```

Caution: To avoid data corruption, do not proceed until all RLINKs are up-to-date.

- 18 Stop activity to all VxVM volumes.

For example, stop any applications such as databases that access the volumes, and unmount any file systems that have been created on the volumes.

- 19 On each node, stop all VxVM volumes by entering the following command for each disk group:

```
# vxvol -g diskgroup stopall
```

To verify that no volumes remain open, use the following command:

```
# vxprint -Aht -e v_open
```

- 20 Check if the VEA service is running:

```
# /opt/VRTS/bin/vxsvcctl status
```

If the VEA service is running, stop it:

```
# /opt/VRTS/bin/vxsvcctl stop
```

- 21 On each node, run the following command to change to the RPMs directory. For example:

```
# cd /extract_dir/dvdno_os/dist_arch/product/rpms
```

where `extract_dir` is the directory path under the location you extracted the downloaded 5.0 MP3 RP3 archive file.

where `dvdno-os` is either `dvd1-redhatlinux` or `dvd2-suselinux`.

where `dist` is either `rhel4`, `rhel5`, `sles9`, or `sles10`.

where `arch` is either `i686`, or `x86_64`.

where `product` is the name of the product

`storage_foundation_cluster_file_system`.

- 22 On each node, run the following command to upgrade manually to 5.0 MP3 RP3.

```
# rpm -Uvh *.rpm
```

See “[RPMs included in this rolling patch](#)” on page 22.
- 23 Shut down and reboot each of the upgraded nodes. After the nodes come back up, application failover capability is available for that group.
- 24 If you need to re-encapsulate and mirror the root disk on each of the nodes, follow the procedures in the “Administering Disks” chapter of the *Veritas Volume Manager Administrator’s Guide*.
- 25 If necessary, reinstate any missing mount points in the `/etc/fstab` file on each node.
- 26 Repeat [step 3](#) to [step 21](#) for the second group of nodes.
- 27 Start VCS on each upgraded node:

```
# hastart
```
- 28 Make the VCS configuration writable again from any node in the upgraded group:

```
# haconf -makerw
```
- 29 Enter the following command on each node in the upgraded group to unfreeze HA service group operations:

```
# hasys -unfreeze -persistent nodename
```
- 30 Make the configuration read-only:

```
# haconf -dump -makero
```
- 31 Switch the service group to the original node:

```
# hagr -switch service_group -to nodename
```
- 32 Bring the CVM service group online on each node in the upgraded group:

```
# hagr -online cvm -sys nodename
```
- 33 Restart all the volumes by entering the following command for each disk group:

```
# vxvol -g diskgroup startall
```
- 34 If you stopped any RVGs in [step 17](#), restart each RVG:

```
# vxrv -g diskgroup start rvg_name
```
- 35 Remount all VxFS file systems on all nodes:

```
# mount /filesystem
```
- 36 Remount all Storage Checkpoints on all nodes:

```
# mount /checkpoint_name
```
- 37 Repeat [step 22](#) through [step 25](#) and then [step 27](#) through [step 36](#) for the second group of nodes.

Upgrading to 5.0 MP3 RP3 on a SFCFS for Oracle RAC cluster

The following procedure describes upgrading on a SFCFS for Oracle RAC cluster.

To upgrading to 5.0 MP3 RP3 on a SFCFS for Oracle RAC cluster

- 1 Log in as superuser.
- 2 Verify that `/opt/VRTS/bin` is in your PATH so you can execute all product commands.
- 3 Run the following command on any node in the cluster:

```
# haconf -makerw
# hatype -modify CFSMount ArgList -add Primary
# haconf -dump -makero
```
- 4 Select the group of nodes that are to be upgraded first. Switch the failover service group, if any, to a node in the second group that is upgraded later in the procedure.

```
# hagr -switch service_group -to nodename
```
- 5 Follow [step 6](#) through [step 19](#) for the first group of nodes to be upgraded.
- 6 Stop CRS on all each node. Use the following command:

```
# /etc/init.d/init.crs stop
```

On stopping CRS if any gsd relevant process remains active, you must stop that process manually.
- 7 All Oracle users must stop all applications using the CFS mounts not under VCS control.
 - a To verify that no processes use the CFS mount point, enter the following command:

```
# fuser -c mount_point
```
 - b Stop any processes using a CFS mount point with the mechanism provided by the application.
- 8 All Oracle users must unmount any CFS file systems not under VCS control on all nodes. To unmount CFS file systems not under VCS control:
 - a Log in as root.
 - b Determine the file systems to unmount by checking the output of the mount file. For example:

```
# mount | grep vxfs | grep cluster
```
 - c By specifying the mount point for the file system, unmount each file system that is listed in the output:

```
# umount mount_point
```
- 9 Stop VCS by entering the following command on each node in the group being upgraded:

```
# hstop -local
```

- 10 Stop the VCS command server:

```
# ps -ef | grep CmdServer  
# kill -9 pid_of_CmdServer
```

where *pid_of_CmdServer* is the process ID of CmdServer.

- 11 Stop cluster GLM, fencing, ODM, GMS, GAB, and LLT:

```
# /etc/init.d/vxglm stop  
# /etc/init.d/vxfen stop  
# /etc/init.d/vxodm stop  
# /etc/init.d/vxgms stop  
# /etc/init.d/gab stop  
# /etc/init.d/llt stop
```

- 12 If required, you can upgrade the nodes at this stage, and patch them to a supported kernel version.

Note: If you are upgrading a Storage Foundation Cluster File System for Oracle RAC cluster, you must upgrade the nodes at this stage to one of the operating system versions that this RP release supports.

See “[System requirements](#)” on page 4.

- 13 On each node, use the following command to check if any VxFS file systems are mounted:

```
# mount | grep vxfs
```

- a If any VxFS file systems are present, on each node in the cluster unmount all the VxFS file systems:

```
# umount /mount-point
```

- b On each node, verify that all file systems have been cleanly unmounted:

```
# echo "8192B.p S" | fsdb -t vxfs filesystem | grep clean  
flags 0 mod 0 clean clean_value
```

- 14 A *clean_value* value of 0x5a indicates the file system is clean, 0x3c indicates the file system is dirty, and 0x69 indicates the file system is dusty. A dusty file system has pending extended operations.

- c If a file system is not clean, enter the following commands for that file system:

```
# fsck -t vxfs filesystem-device  
# mount -t vxfs filesystem-device mountpoint  
# umount mountpoint
```

This should complete any extended operations that were outstanding on the file system and unmount the file system cleanly.

There may be a pending large fileset clone removal extended operation if the `umount` command fails with the following error:

```
file system device busy
```

You know for certain that an extended operation is pending if the following message is generated on the console:

```
Storage Checkpoint asynchronous operation on file_system  
file system still in progress.
```

- d If an extended operation is pending, you must leave the file system mounted for a longer time to allow the operation to complete. Removing a very large fileset clone can take several hours.
- e Repeat the following command to verify that the unclean file system is now clean:

```
# echo "8192B.p S" | fsdb -t vxfs filesystem | grep clean  
flags 0 mod 0 clean clean_value
```

- 15 Stop activity to all VxVM volumes. For example, stop any applications such as databases that access the volumes, and unmount any file systems that have been created on the volumes.

- 16 On each node, stop all VxVM volumes by entering the following command for each disk group:

```
# vxvol -g diskgroup stopall
```

To verify that no volumes remain open, use the following command:

```
# vxprint -Aht -e v_open
```

- 17 Check if the VEA service is running:

```
# /opt/VRTS/bin/vxsvcctl status
```

If the VEA service is running, stop it:

```
# /opt/VRTS/bin/vxsvcctl stop
```

- 18 Run the following command to change to the RPMs directory. For example:

```
# cd /extract_dir/dvdno_os/dist_arch/product/rpms
```

where *extract_dir* is the directory path under the location you extracted the downloaded 5.0 MP3 RP3 archive file.

where *dvdno-os* is either dvd1-redhatlinux or dvd2-suselinux.

where *dist* is either rhel4, rhel5, sles9, or sles10.

where *arch* is x86_64.

where *product* is the name of the product

storage_foundation_cluster_file_system_for_rac.

- 19 Run the following command:

```
# rpm -Uvh *.rpm
```

- 20 After all the nodes in the selected group are upgraded, shut down and reboot each of the upgraded nodes.

```
# shutdown -r now
```

After the reboots, VCS on the first set of nodes will fail to come up since VCS protocol versions would be different on the two sets of nodes. Therefore, CVM and CFS will also not come up.

- 21 If necessary, reinstate any missing mount points in the `/etc/fstab` file on each node.
- 22 On the second group of nodes, stop the failover service group. Downtime starts for failover service groups.

```
# hagrps -offline failover_service_group
```
- 23 Make the VCS configuration writable again from any node second group:

```
# haconf -makerw
```
- 24 Enter the following command on each node in the second group to freeze HA service group operations for failover service group:

```
# hasys -freeze -persistent nodename
```
- 25 Make the configuration read-only:

```
# haconf -dump -makero
```
- 26 On the second group of nodes, shutdown VCS. Execute following command on one of the nodes.

```
# hastop -all -force
```
- 27 On the first group of nodes, start VCS on each of the nodes:

```
# hastart
```

Downtime ends for the failover service groups.
- 28 On the first group of nodes, start CRS on each node. Use the following command:

```
# /etc/init.d/init.crs start
```
- 29 If not already started, check if the VEA service is started:

```
# /opt/VRTS/bin/vxsvctr1 status
```

If the VEA service is not running, start it:

```
# /opt/VRTS/bin/vxsvctr1 start
```
- 30 After all the services are up on the first group of nodes, stop VCS. Execute following command on one of the nodes.

```
# hastop -all -force
```
- 31 On the second group of nodes, start VCS on each of the nodes:

```
# hastart
```
- 32 Repeat [step 6](#) through [step 21](#) for the second group of nodes.
- 33 Make the VCS configuration writable again from any node in the second group:

```
# haconf -makerw
```
- 34 Enter the following command on each node in the second group to unfreeze HA service group operations for failover service group:

```
# hasys -unfreeze -persistent nodename
```
- 35 Make the configuration read-only:


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

36 On the first group of nodes, start VCS on each of the nodes:

```
# hstart
```

Upgrading to 5.0 MP3 RP3 on a Storage Foundation HA cluster

The following procedure describes upgrading on a Storage Foundation HA, SF for Oracle HA or SF for DB2 HA cluster.

To upgrade to 5.0 MP3 RP3 on a Storage Foundation HA cluster

- 1 Log in as superuser.
- 2 Verify that `/opt/VRTS/bin` is in your PATH so you can execute all product commands.
- 3 Switch the service group to a node that is running.

```
# hagrps -switch service_group -to nodename
```
- 4 Make the VCS configuration writable on a node that is being upgraded:

```
# haconf -makerw
```
- 5 Freeze the HA service group operations. Enter the following command on each node, if you selected a group of nodes to upgrade:

```
# hasys -freeze -persistent nodename
```
- 6 Make the VCS configuration read-only:

```
# haconf -dump makero
```
- 7 Close any instance of VCS GUI that is running on the node.
- 8 Select the group of nodes that are to be upgraded first, and follow [step 9](#) through [step 20](#) for these nodes.
- 9 Stop VCS. Enter the following command on each node in the group that is being upgraded:

```
# hastop -local
```
- 10 Stop the VCS command server:

```
# killall CmdServer
```
- 11 Stop cluster fencing, GAB, and LLT.

```
# /etc/init.d/vxfen stop  
# /etc/init.d/gab stop  
# /etc/init.d/llt stop
```
- 12 If required, you can upgrade the nodes at this stage, and patch them to a supported kernel version.
See “[System requirements](#)” on page 4.

- 13 Repeat [step 9](#) through [step 11](#), if the system reboots after upgrading the operating system. You need to perform this to stop the components started, if any, by the init scripts.

- 14 Run the following command to change to the RPMs directory. For example:

```
# cd /extract_dir/dvdno_os/dist_arch/product/rpms
```

where *extract_dir* is the directory path under the location you extracted the downloaded 5.0 MP3 RP3 archive file.

where *dvdno-os* is either *dvd1-redhatlinux* or *dvd2-suselinux*.

where *dist* is either *rhel4*, *rhel5*, *sles9*, or *sles10*.

where *arch* is either *i686*, or *x86_64*.

where *product* is the name of the product either *storage_foundation*, *storage_foundation_for_db2*, or

storage_foundation_for_oracle depending on the product you are installing.

- 15 If you are upgrading the Storage Foundation product, run the following command to upgrade manually to 5.0 MP3 RP3 on each node:

```
# rpm -Uvh *.rpm
```

If you are upgrading the Storage Foundation for DB2 product, run the following commands to upgrade manually to 5.0 MP3 RP3 on each node:

```
# rpm -Uvh --nopreun --nopostun VRTSd2ed-common.rpm  
# rpm -Uvh --nopreun --nopostun VRTSd2gui-common.rpm  
# rpm -Uvh --nopreun --nopostun VRTSdbcom-common.rpm  
# rpm -Uvh *.rpm
```

If you are upgrading the Storage Foundation for Oracle product, run the following commands to upgrade manually to 5.0 MP3 RP3 on each node:

```
# rpm -Uvh --nopreun --nopostun VRTSdbed-common.rpm  
# rpm -Uvh --nopreun --nopostun VRTSorgui-common.rpm  
# rpm -Uvh --nopreun --nopostun VRTSdbcom-common.rpm  
# rpm -Uvh *.rpm
```

See “[RPMs included in this rolling patch](#)” on page 22.

- 16 Shut down and reboot each of the upgraded nodes. After the nodes come up, application failover capability is available for that group.

- 17 Make the VCS configuration writable again from any node in the upgraded group:

```
# haconf -makerw
```

- 18 Unfreeze the service group operations. Perform this task on each node if you had upgraded a group of nodes:

```
# hasys -unfreeze -persistent nodename
```

- 19 Make the VCS configuration read-only:

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

- 20 Switch the service group to the original node:

```
# hagrps -switch service_group -to nodename
```

- 21 Repeat [step 9](#) through [step 20](#) for the second group of nodes.
- 22 If you are currently using backup and restore for the DBED repository. Perform a full backup of the DBED repository database after completing the 5.0 MP3 RP3 installation.
For more information see the “[Software limitations](#)” on page 21 about older backups failing to be restored using the DBED scripts.
See the *Veritas Storage Foundation for Oracle Administrator's Guide* for the `sfua_rept_adm` command.
For more information see “[Storage Foundation for Oracle fixed issues](#)” on page 16 or “[Storage Foundation for DB2 fixed issues](#)” on page 16 for incident 1425261.

Upgrading to 5.0 MP3 RP3 on a VCS cluster

To upgrade VCS 5.0 MP3 to VCS 5.0 MP3 RP3, follow either of the following upgrade options.

- n Manual upgrade
- n Minimal downtime upgrade

Refer to the following sections for more information:

- n See “[Performing a manual upgrade to 5.0 MP3 RP3 on a VCS cluster](#)” on page 71.
- n See “[Performing a minimal downtime upgrade to 5.0 MP3 RP3 on a VCS cluster](#)” on page 73.

Performing a manual upgrade to 5.0 MP3 RP3 on a VCS cluster

Upgrading to 5.0 MP3 RP3 on a cluster, following the manual upgrade requires you to freeze all the service groups from the nodes.

The following are the stages for upgrading on a cluster, using the manual upgrade:

- n Freeze all the service groups
- n Stop VCS
- n Perform the upgrade
- n Restart the services
- n Unfreeze the service groups

To perform a manual upgrade to 5.0 MP3RP3 on a VCS cluster

- 1 Log in as a superuser on one of the nodes.

- 2 Verify that `/opt/VRTSvcs/bin` is set in your PATH environment variable to execute all product commands.
- 3 Make the VCS configuration writable. On any node, type:
`# haconf -makerw`
- 4 Freeze the HA service groups. On each node, type:
`# hasys -freeze -persistent nodename`
- 5 Save the main.cf file with the groups frozen. On any node, type:
`# haconf -dump -makero`
- 6 Stop VCS. On any node, type:
`# hastop -all`
- 7 If the system returns an error message and fails to shut down VCS, type:
`# hastop -all -force`
- 8 Verify that VCS has shutdown.
`# ps -ef | grep -i had`
- 9 Stop the VCS command server.
`# killall CmdServer`
- 10 Stop the cluster fencing, GAB and LLT instances.
`# /etc/init.d/vxfen stop`
`# /etc/init.d/gab stop`
`# /etc/init.d/llt stop`
- 11 If required, you can upgrade the operating systems on the nodes at this stage, and patch them to a supported kernel version.
See [“Supported operating systems”](#) on page 4
- 12 Run the following command to change to the RPMs directory. For example:
`# cd /extract_dir/dvdno_os/dist_arch/product/rpms`
where `extract_dir` is the directory path under the location you extracted the downloaded 5.0 MP3 RP3 archive file.
where `dvdno-os` is either `dvd1-redhatlinux` or `dvd2-suselinux`.
where `dist` is either `rhel4`, `rhel5`, `sles9`, or `sles10`.
where `arch` is either `i586`, `i686`, or `x86_64`.
where `product` is the name of the product you are installing.
- 13 Run the following commands to upgrade to 5.0 MP3 RP3. On each node, type:
`# rpm -Uvh VRTSllt-5.0.30.20-MP3RP2_dist.arch.rpm`
`# rpm -Uvh VRTSgab-5.0.30.20-MP3RP2_dist.arch.rpm`
`# rpm -Uvh VRTSvxfen-5.0.30.20-MP3RP2_dist.arch.rpm`
`# rpm -Uvh VRTSvcs-5.0.30.20-MP3RP2_dist.arch.rpm`
`# rpm -Uvh VRTSvcsag-5.0.30.20-MP3RP2_dist.arch.rpm`
where `dist` is the supported Linux distribution and `arch` is the supported Linux architecture.

- 14 Restart services.
- 15 Ensure VCS is running on all the nodes.
- 16 Make the VCS configuration writable, on any node.
`haconf -makerw`
- 17 Unfreeze the service groups. On each node, type:
`hasys -unfreeze -persistent nodename`
- 18 Make the VCS configuration read-only.
`haconf -dump -makero`

Performing a minimal downtime upgrade to 5.0 MP3 RP3 on a VCS cluster

Upgrading to 5.0 MP3 RP3 on a cluster, using the minimal downtime upgrade requires you to take the service groups offline from a node or group of nodes that you select to upgrade.

The following are the stages for upgrading on a cluster, using the minimal downtime upgrade:

- n Select a node (or a group of nodes) in the cluster to upgrade.
- n Shut down the cluster services on the selected set of nodes.
- n Perform the upgrade on selected nodes.
- n Shut down cluster services on the second set of nodes.
- n Restart the cluster services on the upgraded node.
- n Perform the upgrade on the second set of nodes.
- n Bring the service groups online on all the upgraded nodes.

To perform a minimal downtime upgrade on a VCS cluster

- 1 Log in as superuser.
- 2 Verify that `/opt/VRTSvcs/bin` is set as your PATH so that you can execute all product commands.
- 3 Select a node (or group of nodes) in a cluster to upgrade first.
- 4 Stop VCS using the following command on all the selected set of nodes:
`hastop -local`
- 5 If fencing is configured, stop fencing using the following command:
`/etc/init.d/vxfen stop`
- 6 Stop GAB.
`/etc/init.d/gab stop`
- 7 Stop LLT.
`/etc/init.d/llt stop`

- 8 If required, you can upgrade the operating systems on the nodes at this stage, and patch them to a supported kernel version.
 See “Supported operating systems” on page 4
- 9 Run the following command to change to the RPMs directory. For example:


```
# cd /extract_dir/dvdkno_os/dist_arch/product/rpms
```

 where *extract_dir* is the directory path under the location you extracted the downloaded 5.0 MP3 RP3 archive file.
 where *dvdkno-os* is either *dvd1-redhatlinux* or *dvd2-suselinux*.
 where *dist* is either *rhel4*, *rhel5*, *sles9*, or *sles10*.
 where *arch* is either *i586*, *i686*, or *x86_64*.
 where *product* is the name of the product you are installing.
- 10 Upgrade to VCS 5.0 MP3 RP3 using the following commands:


```
# rpm -Uvh VRTS11t-5.0.30.20-MP3RP2_dist.arch.rpm
# rpm -Uvh VRTSgab-5.0.30.20-MP3RP2_dist.arch.rpm
# rpm -Uvh VRTSvxfen-5.0.30.20-MP3RP2_dist.arch.rpm
# rpm -Uvh VRTSvcs-5.0.30.20-MP3RP2_dist.arch.rpm
# rpm -Uvh VRTSvcsag-5.0.30.20-MP3RP2_dist.arch.rpm
```

 where *dist* is the supported Linux distribution and *arch* is the supported Linux architecture.
- 11 Shut down the cluster services on the second set of nodes.
- 12 Start LLT on all the upgraded nodes.


```
# /etc/init.d/llt start
```
- 13 Start GAB on all the upgraded nodes.


```
# /etc/init.d/gab start
# /sbin/gabconfig -cx
```
- 14 Ensure that the GAB Port a membership has been formed. On any node type:


```
# /sbin/gabconfig -a
```

 An output similar to the following ensures that the required membership is formed.


```
GAB Port Memberships
=====
Port a gen 907501 membership 01
```

 In case you fail to receive this output, repeat step 14 after a few seconds.
- 15 Start Fencing.


```
# /etc/init.d/vxfen start
```
- 16 Start the remaining VCS components.


```
# /etc/init.d/vcs start
```
- 17 Upgrade the second set of nodes.
- 18 Start all VCS components on all the upgraded nodes from the second set.


```
# /etc/init.d/llt start
```

```
# /etc/init.d/gab start
# /etc/init.d/vxfen start
# /etc/init.d/vcs start
```

- 19 Bring service groups online on the cluster.

Upgrading to 5.0 MP3 RP3 on a standalone system

You can use this procedure to upgrade on a standalone system that runs Storage Foundation, SF for Oracle, or SF for DB2.

To upgrading to 5.0 MP3 RP3 on a standalone system

- 1 Log in as superuser.
- 2 Verify that `/opt/VRTS/bin` is in your PATH so you can execute all product commands.
- 3 Check if the root disk is under VxVM control by running this command:

```
# df -v /
```

The root disk is under VxVM control if `/dev/vx/dsk/rootvol` is listed as being mounted as the root (`/`) file system. If so, unmirror and unencapsulate the root disk as described in the following steps:

- a Use the `vxplex` command to remove all the plexes of the volumes `rootvol`, `swapvol`, `usr`, `var`, `opt` and `home` that are on disks other than the root disk.

For example, the following command removes the plexes `mirrootvol-01`, and `mirswapvol-01` that are configured on a disk other than the root disk:

```
# vxplex -o rm dis mirrootvol-01 mirswapvol-01
```

Note: Do not remove the plexes on the root disk that correspond to the original disk partitions.

- b Enter the following command to convert all the encapsulated volumes in the root disk back to being accessible directly through disk partitions instead of through volume devices. There must be at least one other disk in the `rootdg` disk group in addition to the root disk for `vxunroot` to succeed.

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

Following the removal of encapsulation, the system is rebooted from the unencapsulated root disk.
- 4 If required, you can upgrade the system at this stage, and patch it to a supported kernel version.

- 5 Use the following command to check if any VxFS file systems or Storage Checkpoints are mounted:

```
# df -T | grep vxfs
```
- 6 Unmount all Storage Checkpoints and file systems:

```
# umount /checkpoint_name  
# umount /filesystem
```
- 7 If you have created any Veritas Volume Replicator (VVR) replicated volume groups (RVGs) on your system, perform the following steps:
 - a Stop all applications that are involved in replication. For example, if a data volume contains a file system, unmount it.
 - b Use the `vrxvg stop` command to stop each RVG individually:

```
# vrxvg -g diskgroup stop rvg_name
```
 - c On the Primary node, use the `vrxlink status` command to verify that all RLINKs are up-to-date:

```
# vrxlink -g diskgroup status rlink_name
```

Caution: To avoid data corruption, do not proceed until all RLINKs are up-to-date.

- 8 Stop activity to all VxVM volumes. For example, stop any applications such as databases that access the volumes, and unmount any file systems that have been created on the volumes.
- 9 Stop all VxVM volumes by entering the following command for each disk group:

```
# vxvol -g diskgroup stopall
```

To verify that no volumes remain open, use the following command:

```
# vxprint -Aht -e v_open
```
- 10 Check if the VEA service is running:

```
# /opt/VRTS/bin/vxsvcctl status
```

If the VEA service is running, stop it:

```
# /opt/VRTS/bin/vxsvcctl stop
```
- 11 Run the following command to change to the RPMs directory. For example:

```
# cd /extract_dir/dvdno_os/dist_arch/product/rpms
```

where `extract_dir` is the directory path under the location you extracted the downloaded 5.0 MP3 RP3 archive file.
where `dvdno-os` is either `dvd1-redhatlinux` or `dvd2-suselinux`.
where `dist` is either `rhel4`, `rhel5`, `sles9`, or `sles10`.
where `arch` is either `i686`, or `x86_64`.
where `product` is the name of the product either `storage_foundation`, `storage_foundation_for_db2`, or

`storage_foundation_for_oracle` depending on the product you are installing.

- 12 If you are upgrading the Storage Foundation product, run the following command to upgrade manually to 5.0 MP3 RP3 on each node:

```
# rpm -Uvh *.rpm
```

If you are upgrading the Storage Foundation for DB2 product, run the following commands to upgrade manually to 5.0 MP3 RP3 on each node:

```
# rpm -Uvh --nopreun --nopostun VRTSd2ed-common.rpm
# rpm -Uvh --nopreun --nopostun VRTSd2gui-common.rpm
# rpm -Uvh --nopreun --nopostun VRTSdbcom-common.rpm
# rpm -Uvh *.rpm
```

If you are upgrading the Storage Foundation for Oracle product, run the following commands to upgrade manually to 5.0 MP3 RP3 on each node:

```
# rpm -Uvh --nopreun --nopostun VRTSdbed-common.rpm
# rpm -Uvh --nopreun --nopostun VRTSorgui-common.rpm
# rpm -Uvh --nopreun --nopostun VRTSdbcom-common.rpm
# rpm -Uvh *.rpm
```

See “[RPMs included in this rolling patch](#)” on page 22.

- 13 Shut down and restart the system.
- 14 If necessary, reinstate any missing mount points in the `/etc/fstab` file.
- 15 Restart all the volumes by entering the following command for each disk group:
- ```
vxvol -g diskgroup startall
```
- 16 If you stopped any RVGs in [step 7](#), restart each RVG:
- ```
# vxrvg -g diskgroup start rvg_name
```
- 17 Remount all VxFS file systems and Storage Checkpoints:
- ```
mount /filesystem
mount /checkpoint_name
```
- 18 Check if the VEA service was restarted:
- ```
# /opt/VRTS/bin/vxsvcctl status
```
- If the VEA service is not running, restart it:
- ```
/opt/VRTS/bin/vxsvcctl start
```
- 19 If you need to re-encapsulate and mirror the root disk, follow the procedures in the “Administering Disks” chapter of the *Veritas Volume Manager Administrator’s Guide*.
- 20 If you are currently using backup and restore for the DBED repository. Perform a full backup of the DBED repository database after completing the 5.0 MP3 RP3 installation.
- For more information see the “[Software limitations](#)” on page 21 about older backups failing to be restored using the DBED scripts.

See the *Veritas Storage Foundation for Oracle Administrator's Guide* for the `sfua_rept_adm` command.

For more information see “[Storage Foundation for Oracle fixed issues](#)” on page 16 or “[Storage Foundation for DB2 fixed issues](#)” on page 16 for incident 1425261.

## Upgrading VCS Agents

For upgrading the Oracle, Sybase and DB2 agents for VCS, refer to the README documents provided along with the patch.

## Upgrading Cluster Management Console

This section describes how to upgrade the Cluster Management Console for VCS 5.0 MP3 RP3.

Depending upon your CMC configuration, select one of the following procedures for the upgrade.

- n [Upgrading CMC Cluster Connector](#)
- n [Upgrading CMC Web Console \(Single Cluster Mode\)](#)

## Upgrading CMC Cluster Connector

**To upgrade CMC Cluster Connector**

- 1 Verify whether the CMC Cluster Connector service group is present. If it is absent, skip step 2.

- 2 Take the service group offline, if it is online.

```
hagrps -offline CMC -any
```

- 3 Change the location to the RPMs directory.

For example:

```
cd /extract_dir/dvdno_os/dist_arch/product/rpms
```

where *extract\_dir* is the directory path under the location you extracted the downloaded 5.0 MP3 RP3 archive file.

where *dvdno-os* is either *dvd1-redhatlinux* or *dvd2-suselinux*.

where *dist* is either *rhel4*, *rhel5*, *sles9*, or *sles10*.

where *arch* is either *i686*, or *x86\_64*.

where *product* is the name of the product

`cluster_management_console`.

- 4 Run the following command to upgrade CMC.

```
rpm -U VRTScmccc-5.0.30.20-MP3RP2_dist.arch.rpm
```

where *dist* is the supported Linux distribution and *arch* is the supported Linux architecture.

- 5 Bring the Cluster Connector online, if it was brought offline earlier.

```
hagrps -online CMC -any
```

## Upgrading CMC Web Console (Single Cluster Mode)

### To upgrade CMC Web Console

- 1 Verify whether CMC Web Console service group is present. If it is absent, skip step 2.

- 2 Take the resource offline, if it is online.

```
hares -offline VCSweb -sys system_name
```

Where, *system\_name* is the system on which VCSweb resource is online.

- 3 Change the location to the RPMs directory.

For example:

```
cd /extract_dir/dvdno_os/dist_arch/product/rpms
```

where *extract\_dir* is the directory path under the location you extracted the downloaded 5.0 MP3 RP3 archive file.

where *dvdno-os* is either *dvd1-redhatlinux* or *dvd2-suselinux*.

where *dist* is either *rhel4*, *rhel5*, *sles9*, or *sles10*.

where *arch* is either *i686*, or *x86\_64*.

where *product* is the name of the product

*cluster\_management\_console*.

- 4 Run the following command to upgrade CMC.

```
rpm -U VRTScmcs-5.0.30.20-MP3RP2_dist.arch.rpm
```

where *dist* is the supported Linux distribution and *arch* is the supported Linux architecture.

- 5 Bring the Cluster Web Console online, if it was brought offline earlier.

```
hares -online VCSweb -sys system_name
```

Where, *system\_name* is the system on which you want the VCSweb resource to come online.

## Upgrading the operating system and upgrading to 5.0 MP3 RP3

This section describes how to upgrade the operating system on a Storage Foundation node where you plan to upgrade to 5.0 MP3 RP3. This section includes the following topics:

- n [Upgrading RHEL 4](#)
- n [Upgrading RHEL 4 to RHEL 5](#)
- n [Upgrading RHEL 5](#)
- n [Upgrading OEL 4](#)
- n [Upgrading OEL 4 to OEL 5](#)
- n [Upgrading OEL 5](#)
- n [Upgrading SLES 9](#)
- n [Upgrading SLES 9 to SLES 10](#)
- n [Upgrading SLES 10](#)

Refer to the *Oracle*, *Red Hat*, or *SuSE* documentation for more information on upgrading your system.

### Upgrading RHEL 4

This section describes how to upgrade the OS on a Storage Foundation node and upgrade to 5.0 MP3 RP3.

#### To upgrade to a later version of RHEL 4

- 1 Stop Storage Foundation.
- 2 Upgrade to RHEL 4 Update 3 or a later version.
- 3 Upgrade to 5.0 MP3 RP3.  
See [“Upgrading 5.0 MP3 to 5.0 MP3 RP3”](#) on page 60.
- 4 Start Storage Foundation.

### Upgrading RHEL 4 to RHEL 5

This section describes how to upgrade the OS on a Storage Foundation node and upgrade to 5.0 MP3 RP3.

#### To upgrade RHEL 4 to RHEL 5

- 1 Stop Storage Foundation.

- 2 Upgrade to RHEL 5 Update 1 or a later version.
- 3 Upgrade to 5.0 MP3 RP3.  
See [“Upgrading 5.0 MP3 to 5.0 MP3 RP3”](#) on page 60.
- 4 Start Storage Foundation.

## Upgrading RHEL 5

This section describes how to upgrade the OS on a Storage Foundation node and upgrade to 5.0 MP3 RP3.

### To upgrade to a later version of RHEL 5

- 1 Stop Storage Foundation.
- 2 Upgrade to RHEL 5 Update 1 or a later version.
- 3 Upgrade to 5.0 MP3 RP3.  
See [“Upgrading 5.0 MP3 to 5.0 MP3 RP3”](#) on page 60.
- 4 Start Storage Foundation.

## Upgrading OEL 4

This section describes how to upgrade the OS on a Storage Foundation node and upgrade to 5.0 MP3 RP3.

### To upgrade to a later version of OEL 4

- 1 Stop Storage Foundation.
- 2 Upgrade to OEL 4.4 or a later version.
- 3 Upgrade to 5.0 MP3 RP3.  
See [“Upgrading 5.0 MP3 to 5.0 MP3 RP3”](#) on page 60.
- 4 Start Storage Foundation.

## Upgrading OEL 4 to OEL 5

This section describes how to upgrade the OS on a Storage Foundation node and upgrade to 5.0 MP3 RP3.

### To upgrade OEL 4 to OEL 5

- 1 Stop Storage Foundation.
- 2 Upgrade to OEL 5.1 or a later version.
- 3 Upgrade to 5.0 MP3 RP3.

See [“Upgrading 5.0 MP3 to 5.0 MP3 RP3”](#) on page 60.

- 4 Start Storage Foundation.

## Upgrading OEL 5

This section describes how to upgrade the OS on a Storage Foundation node and upgrade to 5.0 MP3 RP3.

### To upgrade to a later version of OEL 5

- 1 Stop Storage Foundation.
- 2 Upgrade to OEL 5.1 or a later version.
- 3 Upgrade to 5.0 MP3 RP3.  
See [“Upgrading 5.0 MP3 to 5.0 MP3 RP3”](#) on page 60.
- 4 Start Storage Foundation.

## Upgrading SLES 9

This section describes how to upgrade the OS on a Storage Foundation node and upgrade to 5.0 MP3 RP3.

### To upgrade to a later version of SLES 9

- 1 Stop Storage Foundation.
- 2 Upgrade to SLES 9 SP3 or a later version.
- 3 Upgrade to 5.0 MP3 RP3.  
See [“Upgrading 5.0 MP3 to 5.0 MP3 RP3”](#) on page 60.
- 4 Start Storage Foundation.

## Upgrading SLES 9 to SLES 10

This section describes how to upgrade the OS on a Storage Foundation node and upgrade to 5.0 MP3 RP3.

### To upgrade SLES 9 to SLES 10

- 1 Stop Storage Foundation.
- 2 Upgrade to SLES 10 SP1 or a later version.
- 3 Upgrade to 5.0 MP3 RP3.  
See [“Upgrading 5.0 MP3 to 5.0 MP3 RP3”](#) on page 60.
- 4 Start Storage Foundation.

## Upgrading SLES 10

This section describes how to upgrade the OS on a Storage Foundation node and upgrade to 5.0 MP3 RP3.

### To upgrade to a later version of SLES 10

- 1 Stop Storage Foundation.
- 2 Upgrade to SLES 10 SP1 or a later version.
- 3 Upgrade to 5.0 MP3 RP3.  
See [“Upgrading 5.0 MP3 to 5.0 MP3 RP3”](#) on page 60.
- 4 Start Storage Foundation.

## Upgrading the patch levels of an operating system for Veritas Cluster Server

This section describes how to upgrade the patch levels of the operating system on a Veritas Cluster Server node, where you plan to upgrade to 5.0 MP3 RP3. This section includes the following topics:

- n [To upgrade RHEL from any previous update to the currently supported update.](#)
- n [To upgrade SLES from any previous service pack to the currently supported service pack.](#)

Refer to, [“Supported operating systems”](#) on page 4 for more information on the currently supported update levels.

### To upgrade RHEL from any previous update to the currently supported update.

- 1 Switch the service groups from the target node to the node you want to upgrade later.  

```
hagrps -switch servicegroup -to nodename
```
- 2 Perform [step 3](#) through [step 6](#) on each of the selected node.
- 3 Stop VCS.  

```
hastop -local
```
- 4 Stop VCS command server.  

```
killall CmdServer
```
- 5 Stop cluster fencing, GAB and LLT.  

```
/etc/init.d/vxfen stop
/etc/init.d/gab stop
/etc/init.d/llt stop
```

- 6 Upgrade RHEL from the previous update to the currently supported update.
- 7 Reboot each of the upgraded node.
- 8 Switch back the service groups to the upgraded node.

**To upgrade SLES from any previous service pack to the currently supported service pack.**

- 1 Switch the service groups from the target node to the node you want to upgrade later.  
`# hagrps -switch servicegroup -to nodename`
- 2 Perform [step 3](#) through [step 6](#) on each of the selected node.
- 3 Stop VCS.  
`# hastop -local`
- 4 Stop VCS command server.  
`# killall CmdServer`
- 5 Stop cluster fencing, GAB and LLT.  
`# /etc/init.d/vxfen stop`  
`# /etc/init.d/gab stop`  
`# /etc/init.d/llt stop`
- 6 Upgrade SLES from the previous service pack to the currently supported service pack.
- 7 Reboot each of the upgraded node.
- 8 Switch back the service groups to the upgraded node.

## Verifying software versions

To list the Veritas RPMs installed on your system, enter the following command:

```
rpm -qa | egrep VRTS
```



## Removing 5.0 MP3 RP3

Roll back of the 5.0 MP3 RP3 to the release 5.0 MP3 version is not supported. It is recommended that you follow the steps in the following sections to remove all the installed Veritas software, and then perform a complete reinstallation of the release 5.0 MP3 software.

- n [Removing 5.0 MP3 RP3 on Storage Foundation or Storage Foundation Cluster File System](#)
- n [Removing 5.0 MP3 RP3 on a Storage Foundation Cluster File System for Oracle RAC](#)
- n [Removing 5.0 MP3 RP3 for Veritas Cluster Server](#)

## Removing 5.0 MP3 RP3 on Storage Foundation or Storage Foundation Cluster File System

You can use the following procedure to uninstall 5.0 MP3 RP3 on Storage Foundation or Storage Foundation Cluster File System (SFCFS).

### To uninstall 5.0 MP3 RP3 on Storage Foundation or SFCFS

- 1 Log in as superuser.
- 2 Verify that `/opt/VRTS/bin` is in your PATH so you can execute all product commands.
- 3 Unmount all VxFS file systems or SFCFS file systems by stopping VCS:  

```
hstop -all
```
- 4 Stop the VCS command server:  

```
killall CmdServer
```
- 5 If cluster fencing was originally configured in enabled mode, type the following on all the nodes:  

```
rm /etc/vxfenmode
```
- 6 Check if the root disk is under VxVM control by running this command:  

```
df -v /
```

The root disk is under VxVM control if `/dev/vx/dsk/rootvol` is listed as being mounted as the root (`/`) file system. If so, unmirror and unencapsulate the root disk as described in the following steps:

- a Use the `vxplex` command to remove all the plexes of the volumes `rootvol`, `swapvol`, `usr`, `var`, `opt` and `home` that are on disks other than the root disk.

For example, the following command removes the plexes `mirrootvol-01`, and `mirswapvol-01` that are configured on a disk other than the root disk:

```
vxplex -o rm dis mirrootvol-01 mirswapvol-01
```

---

**Note:** Do not remove the plexes on the root disk that correspond to the original disk partitions.

---

- b** Enter the following command to convert all the encapsulated volumes in the root disk back to being accessible directly through disk partitions instead of through volume devices. There must be at least one other disk in the `rootdg` disk group in addition to the root disk for `vxunroot` to succeed.

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

Following the removal of encapsulation, the system is restarted from the unencapsulated root disk.

- 7** Use the following command to check if any VxFS file systems or Storage Checkpoints are mounted:

```
df -T | grep vxfs
```

- 8** Unmount all Storage Checkpoints and file systems:

```
umount /checkpoint_name
umount /filesystem
```

- 9** If you have created any Veritas Volume Replicator (VVR) replicated volume groups (RVGs) on your system, perform the following steps:

- a** Stop all applications that are involved in replication. For example, if a data volume contains a file system, unmount it.

- b** Use the `vxrvrg stop` command to stop each RVG individually:

```
vxrvrg -g diskgroup stop rvg_name
```

- c** On the Primary node, use the `vxrlink status` command to verify that all RLINKs are up-to-date:

```
vxrlink -g diskgroup status rlink_name
```

---

**Caution:** To avoid data corruption, do not proceed until all RLINKs are up-to-date.

---

- 10** Stop activity to all VxVM volumes. For example, stop any applications such as databases that access the volumes, and unmount any file systems that have been created on the volumes.

- 11 Stop all VxVM volumes by entering the following command for each disk group:  

```
vxvol -g diskgroup stopall
```

To verify that no volumes remain open, use the following command:  

```
vxprint -Aht -e v_open
```
- 12 Check if the VEA service is running:  

```
/opt/VRTS/bin/vxsvcctl status
```

If the VEA service is running, stop it:  

```
/opt/VRTS/bin/vxsvcctl stop
```
- 13 To shut down and remove the installed Veritas packages, use the appropriate command in the `/opt/VRTS/install` directory. For example, to uninstall the Storage Foundation, use the following commands:  

```
cd /opt/VRTS/install
./uninstallsf [-rsh]
```

You can use this command to remove the packages from one or more systems. For other products, substitute the appropriate script for `uninstallsf` such as `uninstallsfcfs` for the Storage Foundation Cluster File System software.

After uninstalling the Veritas software, refer to the appropriate product's 5.0 MP3 Installation Guide document to reinstall the 5.0 MP3 software.

## Removing 5.0 MP3 RP3 on a Storage Foundation Cluster File System for Oracle RAC

You can use the following procedure to uninstall 5.0 MP3 RP3 on Storage Foundation Cluster File System for Oracle RAC (SFCFS for Oracle RAC):

- 1 Log in as superuser on all the nodes.
- 2 Stop CRS on all the nodes, use the following command:  

```
/etc/init.d/init.crs stop
```
- 3 From any node, stop VCS on all the nodes, use the following command:  

```
/opt/VRTS/bin/hastop -all
```
- 4 On any node, change to the install directory:  

```
cd /opt/VRTS/install
```
- 5 On the same node, from the scripts directory, run the `uninstallsfcfsrac` script and remove SFCFS for Oracle RAC:  

```
./uninstallsfcfsrac nodelist
```

where *nodelist* is list of nodes in the SFCFS for Oracle RAC cluster.

## Removing 5.0 MP3 RP3 for Veritas Cluster Server

Perform the following procedure in each node of the cluster to remove the VCS 5.0 MP3 RP3 packages.

**To remove the VCS 5.0 MP3 RP3 packages from the cluster.**

- 1 Log in as superuser.
- 2 Stop VCS along with all the online resources.
- 3 Stop the remaining resources, if any.  
`# /etc/init.d/vcs stop`
- 4 Stop the VCS command server.  
`# killall CmdServer`
- 5 Uninstall VCS.  
`# cd /opt/VRTS/install`  
`# ./uninstallvcs [-rsh]`
- 6 If vxfen was originally configured in enabled mode, type the following:  
`# rm /etc/vxfenmode`
- 7 Refer to the *Veritas Cluster Server Installation Guide* to reinstall the 5.0MP3 software.