Veritas Storage Foundation™ and High Availability Solutions Read This First

Solaris

5.0 Maintenance Pack 3 Rolling Patch 3

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

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For Solaris SPARC,

http://entsupport.symantec.com/docs/283886

For Solaris x64,

http://entsupport.symantec.com/docs/289317

The *Veritas Cluster Server 5.0 Release Notes* can be viewed at the following URL:

For Solaris SPARC,
http://entsupport.symantec.com/docs/283867

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Contents

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) release.

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

For Solaris SPARC:

http://entsupport.symantec.com/docs/281987

For Solaris x64:

http://entsupport.symantec.com/docs/286955

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:

- *Veritas Cluster Server 5.0 MP3 Release Notes*
- *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*.

- *Veritas Storage Foundation for Oracle RAC 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:

- Solaris 8 (SPARC Platform 32-bit and 64-bit)
- Solaris 9 (SPARC Platform 32-bit and 64-bit)
- Solaris 10 (SPARC and x64 Platform 64-bit)

DB2 support

This release of Storage Foundation for DB2 offers support for the following:

- DB2 9.1 (Solaris SPARC and x64)
- DB2 9.5 (Solaris SPARC and x64)
- DB2 9.7 (Solaris SPARC)

Oracle support

This release of Storage Foundation for Oracle offers support for the following:

- 10gR1 (Solaris SPARC and x64)
- 10gR2 (Solaris SPARC and x64)
- 11gR1 (Solaris SPARC)
- Oracle 11.1.0.7 (Solaris SPARC)

Storage Foundation High Availability fixed issues

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

Veritas Volume Manager fixed issues

Table 1-1 describes fixed issues in the Veritas Volume Manager 5.0 MP3 RP3 release, which are included in this release.

Table 1-1 Veritas Volume Manager 5.0 MP3 RP3 fixed issues

Incident	Description
1471784	[5.0MP3RP1 x64] vm can not create stripe-mirror/mirror- stripe/mirror volume with maxsize.
1508462	vxconfigd hung after cluster nodes split simulation - VxVM 5.0 MP3 RP1
1468647	vxdmpdebug fails to find ugettxt
963951	INSTSNAPTMP marked dco log not getting deleted during vxrecover or volume restart
1528160	An ioctl interrupted with EINTR causes frequent vxconfigd exit()'s on 4.1MP4RP3
1545835	vxconfigd core dump during system boot after VxVM4.1RP4 applied.
1538053	CVM_MSG_REQ_GSLOCK repeatedly resent resulting in hang
1637514	Issues with tentative evacuation of disks, when aborted in between using vxevac
1678292	[SxRT sparc/x64] vxdmpadm get tpdnodename error

Table 1-1 Veritas Volume Manager 5.0 MP3 RP3 fixed issues

Incident	Description
1722984	Memory leak in vold_dg_get_clone_disks(.
1732200	[DMP][Usability] When NEW dmp_native_multipathing tunable is set to 'on' - unlabelled LUNs vanish from format until turned off.
1762534	vxdctl settz and vxconfigd core dump if TZ environment variable is not set.
1673002	Need to remove thousands of empty /tmp/vx.* directories.
1779257	VVR:Disable Secondary logging through a tunable.
1797540	VxVM: vxdisk resize intermittently causes vxconfigd to dump core.
1728587	VVR: Replication started with a checkpoint remains inconsistent/cant_sync after SRL is drained if the replication is interrupted.
1822681	memory leak in vxio/voldrl_cleansio_start
1630572	Creating cdsdisk layout on GPT-labeled disks on Linux platform is defective.
1835569	Incorrect dropping of messages when the messages arrive out of order during kernel-level join leading to hang/system crash.
1762561	DMP: System panic when perform excludearray operation with powerpath.
1805826	panic in vol_klog_clear_trans on Solaris x86.
1824993	da_is_any_same_disk skipped disk, blank udid_asl "is same disk same as".
339187	CVM activation tag in vxprint -m output breaks vxprint.
990338	FMR Refreshing a snapshot should keep the same name for the snap object.
1589018	num_retries field is getting re-initialized to initial value leading to looping and delay in error handling time.
1594928	Avoid unnecessary retries on error buffers when disk partition is nullified.
1638174	vxconfigd memory leak found.
1676061	System panic'd after 2 out of 4 paths to disk were removed.
1677217	DMP does not autofailback to the Primary paths following LCC card restoration.
1678370	VM_VVR: RLINK disconnected and "vx" commands hung on Secondary while load in progress.
1715889	Unable to encapsulate an unmanaged EMC DMX PP LUN.

Table 1-1 Veritas Volume Manager 5.0 MP3 RP3 fixed issues

Incident	Description
1726902	vxconfigd dumped core while trying to choose a path in dmp_dmpdevice_to_pathlist_ebn().
1733811	System panic on voldco_isdirty code path while doing vxsnap make operation after upgrading from DCO version 10.
1742702	vxvmconvert fails, probably due to wrong disk capacity calculation.
1745992	CVR:I/O hang in 4 node CVR cluster.
1755519	kmsg layer: receiver side flowcontrol is not supported.
1755628	kmsg layer: with heavy messaging in the cluster the receiver thread slows down processing.
1755689	During recovery, -o delayrecover option does not work as expected for value of 0.
1755707	vxtask list shows the same taskid for parent and child tasks.
1755735	recovery I/Os get broken down to voliomem_chunk_size.
1755788	for a broadcast message, sender thread may end up sending the same message multiple times (not resend).
1755810	kmsg: sender thread is woken up unnecessarily during flowcontrol.
1755830	kmsg: sender: the logic for resend of messages needs to be optimized.
1787437	VXPLEX CPU USAGE IS very high for snapback operation.
1792795	supportability feature/messages for plex state change, DCO map clearance, usage of fast re-sync by vxplex.
1819777	Panic in voldiosio_start(as race window exists while handling duplicate DA records.
1728269	Incorrect cur_pri_path updation for A/PG arrays leading to dmp database inconsistency.
1060336	vxresize should not roll back if fsadm failed but disabled vxfs.
1471263	machine has panicked when added the disk from dg as a foreign device using "vxdmpadm addforeign".
1846165	Data corruption seen on cdsdisks on Solaris-x86 in several customer cases.
1638494	VVR:vxnetd stop causing 100% CPU & vx commands hanging.
1850166	vxvm vxdisk error v-5-1-8643 device <0_bpcs001_fra>: resize failed:

Table 1-1 Veritas Volume Manager 5.0 MP3 RP3 fixed issues

Incident	Description
1459000	Fail over cmd on a bad LUN can cause an infinite loop in dmpCLARiiON_issue_failover.
1537027	SECURITY: ddl_change_naming_scheme(should set mode when creating .newnames.
1594325	need to backout *unit_io and *pref_io changes after 5.0GA.
1485075	vmtest/tc/scripts/admin/voldg/cds/set.tc hits DMP ted assert dmp_select_path:2a.
1729558	multiple vxplex attach cmds running in parallel on a volume lead to clearing DCO map and subsequently lead to corruption in FMR2.
1463197	no path disable event occurs during I/O error analysis in dmp when pulling a FC cable out with 5.0MP3.
1528368	VVR: IO hang during DCM transition after vxresize operations on Primary.
1108839	Turning on dmp_cache_open tunable slows vxconfigd down when run with 2048 dual path luns.
1677416	CVM join & takeover issues in shared A/P storage config due to not breaking more than 64K size kmsgs.
1675221	DDL:vxdmpadm setattr enclosure - identical da naming issue.
1711339	VVR: Unable to modify VVR tunables via kdb, make it tunable using vxtune.
1810749	CR 6874695 - vxlustart -V deleted existing BEs.
1804262	VVR:File system I/O of size bigger than 256k fails with error ENXIO after 2TB(>2G blocks)offset.
1840832	vxrootadm does not update the partition table while doing a grow operation.
1437869	Need to examine package dependencies, especially wrt SUNWscpu.
1475692	The size of large VxVM volumes must be reported correctly to Solaris utilities.
1673764	vxconfigd loses licensing information.
1718008	Unable to initialize EFI LUNs controlled by EMC Powerpath driver, vxprtvtoc "Syntax Error" occurs.
1745894	Database corruption continues with HF for e1458199
1764972	vxdiskadm option 5 fails with "/usr/lib/vxvm/voladm.d/bin/disk.repl"

Table 1-1 Veritas Volume Manager 5.0 MP3 RP3 fixed issues

Incident	Description
1831610	master have to receive CVM_MSG_JOIN_STATE from all slaves before sending CVM_MSG_JOIN_STATE response.
1479735	CVR: I/O hang on slave if master (logowner crashes with DCM active.
1835139	CERT : pnate test hang I/O > 200 seconds during the filer giveback.
1840673	After adding new luns one of the nodes in 3 node CFS cluster hangs.
1744224	FMR3: multiple vxplex attach cmds running in parallel on a volume lead to clearing DCO map and subsequently lead to corruption.
1826088	After pulling out FC cables of local site array, plex became DETACHED/ACTIVE.
1744672	Primary slave hangs in volcvm_rvgrecovery_send_iocnt(TC remote_write_reconfigure_2.tc.
1843722	vxvoladm aborts transaction with error - Unexpected Kernel error in configuration update.

Table 1-2 describes fixed issues in the Veritas Volume Manager 5.0 MP3 RP2 release.

Table 1-2 Veritas Volume Manager 5.0 MP3 RP2 fixed issues

Incident	Description
850816	You can now delete snap objects from a mounted volume.
1097258	The `vxconfigd` daemon no longer hangs when an array is disconnected.
1108839	Turning on the `dmp_cache_open` tunable no longer slows down the `vxconfigd` daemon when run with 2048 dual path LUNs.
1184280	Added additional debug messages around the VE_BADPROTOV error message to improve debugging.
1189199	Fixed the cause of a system panic that occurred when you unloaded the vxdmp driver.
1195591	Fixed the cause of a panic when a cluster had an empty RVG.
1224659	Fixed an issue in which the `vxconfigbackup -p` script sometimes created a zero-length `.binconfig` file.
1259467	Fixed an issue in which the `accept`() call entered an infinite loop.

Table 1-2 Veritas Volume Manager 5.0 MP3 RP2 fixed issues

Incident	Description
1286298	Fixed an issue in which proper locks were not taken in all necessary places while modifying `last_sent_seqno`.
1287975	The `vxclustadm` command has a segmentation fault when the `main.cf` file contains lines that are greater than 512 characters.
1302064	Fixed an issue in which EFI disks could not be initialized or set up after formatting the disks.
1321272	Fixed the an issue in which some VxVM commands hung after disconnecting, then reconnecting to the FC site link.
1321298	Fixed the cause of a `vxconfigd` daemon core dump that occurred after reconnecting the FC site link and heartbeat link.
1370927	Fixed an issue in which the VTOC of disks in a cluster became corrupted.
1374603	Fixed a cause of data corruption in the `dmp_bypass_iodone`() call.
1380386	The appropriate number of I/O threads are now created for systems with more than 8 CPUs.
1388883	Fixed an issue in which rebooting a controller caused the diskgroups to be disabled.
1402443	Fixed the cause of a system panic in the `kmsg_udp_payload`() call.
1408367	Fixed the cause of a system panic when `mutex_panic`() was called from `vol_rwsleep_wrlock`().
1414336	Fixed an issue in which some disk devices did not appear in the `vxdisk list` command output.
1414469	Fixed an issue in which the `vxddladm listsupport all` did not display up-to-date information.
1416080	Fixed the cause of a system panic in the `vol_change_disk`() routine that was due to NULL pointer dereference.
1418659	Fixed an issue in which a Jumpstart installation of the 4.1 MP2 and 4.1 MP2 RP3 patches created duplicate entries in the `/var/svc/profile/upgrade` file.
1421353	Fixed an issue in which I/O got stuck in the drl_logbusy queue due to corruption of the age node LRU list.
1425338	Fixed an issue in which connect rlinks failed to be connected, followed by `vxconfigd` hanging on a secondary node.

Table 1-2 Veritas Volume Manager 5.0 MP3 RP2 fixed issues

Incident	Description
1437281	Fixed the cause of an error with the `vxdmpadm -v getdmpnode enclosure=<name>` command when a LUN was removed incorrectly.
1446208	Changed message V-5-1-2140 from an error message to an informational message.
1450348	Fixed a potential hang/panic that was due to a race condition between an RU thread and a volume read completing during DCM replay.
1452957	Fixed a panic in the `bcopy`() call from `dmp_recv_scsipkt`().
1457132	Fixed the cause of data corruption when running the `vxdmpadm disable path` and `vxdmpadm disable ctlr` commands.
1457758	Fixed an issue in which the `vxdiskadm` command failed to replace a disk that was removed.
1458792	Fixed in issue in which the **unit_io* and **pref_io* tunables became set to 32 MB after upgrading from the Storage Foundation 5.0 MP1 release to the 5.0 MP3 release.
1459831	Fixed an issue in which replication hung due to a deadlock on a secondary that had a TCP multiconnection and was managed by nmcom.
1461314	DMP no longer uses the SCSI bypass on single path disks for path-suppressing TPD.
1461717	Fixed an issue in which the `vxsnap make` command caused the `vxconfigd` daemon to hang.
1463547	Fixed the cause of a `vxconfigd` core dump that occurred when dynamically reconfiguring a LUN.
1469487	The I/O buffer start time is no longer modified as part of error analysis.
1471658	Fixed the cause of a `vxconfigd` daemon core dump that occurred in the `priv_get_all_udid_entry`() call.
1471763	Fixed the cause of the following error: build_devlink_list: readlink failed for /dev/vx/rdsk/ludg: Invalid argument
1472736	Fixed the cause of a system panic in the `vxdmp` module that was due to a NULL pointer dereference.
1473638	Fixed the cause of a failover in the IOCTL context for coordinator disks.
1475707	Added an error message for attempting to import unwritable disks.

Table 1-2 Veritas Volume Manager 5.0 MP3 RP2 fixed issues

Incident	Description
1477143	The cluster volume manager failback protocol is now triggered when `cur_pri` is null and at least one DMP node of the same LUN group is `DMPNODE_SHARED`.
1479729	Fixed the cause of an I/O hang on the primary node after a secondary node crashed.
1479735	Fixed the cause of an I/O hang on a slave if the master (logowner) crashed with a data change map active.
1480315	Fixed an issue in which VxVM performed a full re-sync of a volume that was created in the background when the volume's diskgroup was imported.
1483164	Fixed an issue in which disks with the `NOLABEL` state were usable via the CLI.
1483201	Fixed an issue in which the Device Discovery Layer (DDL) sometimes set the unique disk identifier (UDID) value to INVALID. Multiple disks set to INVALID resulted in the following error: VxVM vxio V-5-0-1056 new disk disk_id has a non-unique UDID
1483643	Fixed an issue in which a raid 5 volume would not start on 3PAR Thin Provisioning LUNs.
1484919	Fixed an issue in which a system that was upgraded to the 5.0 MP3 release could not be booted.
1485379	Fixed an issue in which the `vxtask -l list` command displayed incorrect progress of the `vxsnap addmir` command, which was used to link a snapshot volume to the source volume.
1488084	Fixed an issue in which the `vxdmpadm iostat` command reported different amounts of read/write blocks than the `vxstat`, `iostat`, and `sar -d` commands.
1500389	The `vxrootadm` command now automatically enables the `use-nvramrc?` variable.
1501165	Changed the V-5-1-2140 message from an error to a warning.
1502842	Fixed an issue in which the `dmppolicy.info` file did not get updated after upgrading the packages from Storage Foundation (SF) 5.0 MP3 RP1 to SF 5.1.
1503168	Fixed an issue in which the diskgroup for disks without a private region (`nopriv` disks) could not be imported.

Table 1-2 Veritas Volume Manager 5.0 MP3 RP2 fixed issues

Incident	Description
1507291	Fixed an issue in which setting the `dmp_monitor_fabric` value to ON triggered unexpected offlining of paths on a DMX4 array.
1508462	Fixed the cause of a `vxconfigd` hang that occurred due to a split brain condition on a cluster.
1512352	Fixed an issue in which the `vxconfigrestore` command failed with the following error: VxVM vxconfigrestore ERROR V-5-2-3706 Diskgroup configuration
1515581	Fixed an issue in which recreating a shared diskgroup put `CVMVolDg` in an empty `KSTATE` and offlined clustered file systems.
1525121	Fixed an issue in which EFI disks were in an error state after installing the Storage Foundation 5.0 MP3 RP1 patches.
1525819	Fixed an issue in which the `vxconfigbackup` command failed to work on a diskgroup that had 2 TB LUNs.
1527247	Fixed an issue in which the `vxstat` command showed twice the I/O activity on a mirror volume compared to the source volume.
1528368	Fixed the cause of an I/O hang during the data change map transition after performing `vxresize` operations on the primary node.
1534038	Fixed an issue in which DMP stats sometimes used invalid I/O stats entries, which led to a panic on the host.
1534379	Fixed an issue in which the `vxdg split` command failed with the following error: Internal configuration daemon error
1544051	Fixed an issue in which the incorrect bit was being checked for an EMC Symmetrix thin device.
1586879	Improved performance of the `vxdisk online` command when used on large configurations.
1589022	Fixed the cause of an infinite loop in the DMP error handling code path with a CLARIION array, which led to an I/O hang.
1589172	Fixed an issue in which the `vxdisksetup` and `vxdiskunsetup` commands sometimes failed for EFI disks.
1589881	Fixed an issue in which the dump device was changed to none (dumps disabled) after encapsulating a boot disk.

Table 1-2 Veritas Volume Manager 5.0 MP3 RP2 fixed issues

Incident	Description
1590314	The `vxdmpadm getsubpaths dmpnodename` command now validates the `dmpnodename` value before getting the subpath information.
1597868	Fixed an issue in which, on a secondary node, `rlink` paused and generated the “Incorrect magic number or unexpected upid” error message, and the `secondary_log_err` flag got set.
1598706	Fixed the cause of a system crash that occurred while mirroring the rootdisk.

Table 1-3 describes fixed issues in the Veritas Volume Manager 5.0 MP3 RP1 release, which are included in this release.

Table 1-3 Veritas Volume Manager 5.0 MP3 RP1 fixed issues

Incident	Description
424397	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.
853207	Fixed an issue with 4.1 vxclust reconfig step 2 timed out on joining; node, reconfiguration looping.
1058665	Fixed the `vxdiskunsetup` command failing when disk access name does not match the physical path name.
1114699	Fixed the `vxtask` command to display the resync progress subtask for shared volumes with DRL
1135462	Fixed issue that was unable not to import disk group.
1192166	Fixed the `vxdg -n [newdg] deport [origdg]` command causing a memory leak.
1224659	Fixed an issue with the `vxconfigbackupd` script leading to 0 byte binconfig file being created.
1230351	Fixed a system panic in vol_klog_start() due to accessing freed mv read_sio.
1269468	Fixed an issue with `vxconfigd` core dumps.
1281274	Fixed an issue with `vxplex` core dumps during `vxassist addlog` due to DRL log length being less than 33 blocks.
1288468	Fixed an issue with `vxconfigd` sleeping and no vx commands were responding.
1314301	Fixed an issue with `vxlustart`.

Table 1-3 Veritas Volume Manager 5.0 MP3 RP1 fixed issues

Incident	Description
1368737	Fixed an issue when there are no mirrors to read, VOL_READ_MIRRORS ioctl returns -1 instead of 1.
1373432	Fixed a system panic in bcopy() due to null passed in from volioctl_copyin().
1374927	Fixed and issue with vxvm-startup2 does not set VISSWAP flag if swap device is encapsulated and mirrored.
1375354	Fixed an issue with vxcached never deletes old snaps when cache hits HWM.
1382977	Fixed a system panic due to memory allocation.
1385126	Fixed an issue with VVR I/O hanging due to the wrong generation number assignment after recovery.
1385996	Fixed a rootdisk with B0 subdisk rendering unbootable after its removed and replaced with itself.
1386980	Fixed a system panic in vol_putdisk() code.
1389511	Fixed issue that was unable not to force import diskgroup version 80 in VxVM 5.0.
1393030	Fixed an issue with the `vxdiskunsetup` manual page failing when the dmpnode is not the primary path.
1393570	Fixed a FC-Switch port failure resulting in the loss one of four paths.
1397540	Fixed an issue with the `vxsnap restore` manual page is unable to properly freeze or thaw filesystems in a CVM environment.
1397877	Enhanced the `vxresize` manual page to run from non-CVM master.
1401188	Fixed a system panic after running the `vxdctl enable` or `vxconfigd -k` commands.
1402144	Fixed a system panic due to invalid pointer being passed to `bcopy()` by `volkio_to_kio_copy`.
1409986	Fixed a segmentation fault on x64 system when running the `vxdmpadm list dmpnode all` command.
1409991	Fixed an issue with `vxclust` configuration caused the cluster to panic.
1410216	Fixed a secondary log error causing rlink disconnect after IBC unfreeze.
1412784	Fixed an issue with the system hanging while creating volumes in the guest Ldom.

Table 1-3 Veritas Volume Manager 5.0 MP3 RP1 fixed issues

Incident	Description
1413700	Fixed an issue with the wrong label on a device lead VxVM to calculate the wrong public region size.
1414451	The `vxsnap` manual page includes `mirror=enclosure` parameter to avoid being mirrored on the same enclosure.
1416930	Fixed an issue with the `vxvm` daemon that comes online when the system is rebooted.
1421088	Fixed a secondary panic due to a corrupted `volsioq_start`.
1424479	Fixed an issue with `vxdmpadm` dumped core when executing `vxdmpadm list dmpnode` command.
1425338	Fixed an issue with CVR fails to connect rlinks followed by `vxconfigd` hangs on secondary.
1433120	Fixed an issue with after a reboot site read policy is not honored.
1435470	Fixed an issue with cluster nodes panicking after installing 5.0 MP3.
1435681	Fixed an issue with `vxesd` looping using 100% of one CPU.
1441003	Fixed a secondary panic due to double free of message with TCP protocol and 16 connection.
1443679	Fixed an issue in FMR3, I/Os initiating DCO updates for clearing DRL async clear region may not wait for its completion.
1443748	Fixed an issue in a clustered environment the recovery of volumes having DCO v20 taking lots of time with no I/O load.
1444425	The `vxsnap prepare` manual page includes support for the `mirror=` attribute.

Veritas File System fixed issues

Table 1-4 describes fixed issues in the Veritas File System 5.0 MP3 RP3 release, which are included in this release.

Table 1-4 Veritas File System 5.0 MP3 RP3 fixed issues

Incident	Description
1468377	fsadm to move any structures in shrinking a VxFS.
1484888	qiostat -l hit percentage wildly inaccurate.
1630098	busy umount cleaned the mntlock silently.

Table 1-4 Veritas File System 5.0 MP3 RP3 fixed issues

Incident	Description
1634807	Need to release CPU in vx_multi_bufinval () for local mount large extent.
1635777	New VxFS tunables and new vxfsstat counters required to massively increase the number of vmm bufs per PDT.
1635780	Incorrect use of fse_funmounted flag.
1672814	Pagezero panic with vmodsort enabled.
1716047	vxumount fails to force unmount a nested filesystem when the underlying filesystem is unavailable.
1827710	mntlock won't unlock (sol 9)
1839051	0tb fs on 50mp3rp1. Recent upgraded filesystem which moved OLT_iext > 8tb offset. Mount fail.
1842208	vxfs mount: ERROR: V-3-22168: Cannot open portal device.
1842210	Panic in segmap_release.
1844483	CIO returned ENOTSUP (124) and caused DB2 to crash.
1844535	vxupgrade 5->6 still fails with ENFILE.
1844574	file system disabled.[Fix in vx_rename_tran].
1851091	VxFS: add cast moving odm mrside to fsvm api to prevent conversion error.
1880814	fsadm shrink fs looping in vx_reorg_emap() due to VX_EBMAPMAX from vx_reorg_enter_zfod().
1885523	clone removal can block resive ops.

Table 1-5 describes fixed issues in the Veritas File System 5.0 MP3 RP2 release.

Table 1-5 Veritas File System 5.0 MP3 RP2 fixed issues

Incident	Description
1370823	Fixed an issue in which running a full `fsck` did not fix a file system.
1401516	Fixed the cause of a hang that occurred after locking a file system, disconnecting the storage cable, then using fsadm to unlock the file system.
1412465	Fixed an issue in which the `vxresize` command failed to resize the volume, even though the file system was successfully resized.
1426951	Fixed some badly formed `printf`() statements in `vxm_getinfo`() that caused a system panic.

Table 1-5 Veritas File System 5.0 MP3 RP2 fixed issues

Incident	Description
1441487	Changed GMS to use the standard `gab_api_init`() call to avoid a possible GAB panic.
1445511	The `vx_cds_control`() call now releases active level 1 on an error path.
1468377	You can now shrink a file system regardless of where the structual files reside on that file system.
1484888	Fixed an issue in which the cache hit percentage shown by `qiostat -l` command was inaccurate.
1517415	Fixed the cause of a core dump when running the `ncheck` command.
1526581	`vx_tflush_map`() no longer disables the file system if a map is marked as bad, but there is no I/O error.
1588199	Fixed an issue in which `dm_get_allocinfo`() failed with the EIO error for ext4 inodes with indirect pointers.
1601187	Reverted default `max_seqio_extent_size` to 2048, from 104857.
1634788	Fixed an issue in which the `fsadm` command dumped core intermittently when trying to defragment a file system.

Table 1-6 describes fixed issues in the Veritas File System 5.0 MP3 RP1 release, which are included in this release.

Table 1-6 Veritas File System 5.0 MP3 RP1 fixed issues

Incident	Description
1413494	Fixed a failure of the `umount -f` command to unmount a VxFS file system.
1414175	Improved VxFS performance.
1414178	Fixed an issue with VxFS using too much CPU while looking for odd-sized extents (vxi_alloc_fail).
1415188	Fixed a full `fsck` core dump that was caused by running out of swap space, which resulted in a malloc failure.
1417973	Eliminated a benign error that occurred on globally- mounted VxFS file systems in a SunCluster environment when using the `scswitch` command or `mount` command.
1423867	Optimized `vx_convnodata_files`().
1428661	Improved the performance of `fsadm resize` on SFCFS.

Table 1-6 Veritas File System 5.0 MP3 RP1 fixed issues

Incident	Description
1433066	Fixed a case of looping in vx_do_putpage () due to having a page beyond i_wsize.
1434438	Fixed a panic in vx_unlockmap() due to a null ml_tranp pointer.
1437490	The `fsclustadm`'s `lltdb.c` is now mult-threaded safe for CFSMountAgent.

Storage Foundation Cluster File System fixed issues

Table 1-7 describes fixed issues in the Storage Foundation Cluster File System 5.0 MP3 RP3 release, which are included in this release.

Table 1-7 Storage Foundation Cluster File System 5.0 MP3 RP3 fixed issues

Incident	Description
1634808	bdf commands hung in VX_CFS_GLOCK_GRANT_WAIT when CVM master switched over.
1745700	mmap shared slow with CFS.
1807542	Need to make VX_FREEZE_ALL ioctl to work with CFS file systems
1819895	State Map corruption reported, followed by a CFS hang.
1844485	switchout fsck needs to be invoked for CFS with 2 separate args: "-o" and "mounted"
1844532	fsclustadm cfsdeinit failed with "device busy". PHKL_37113 installed.
1844538	f:vx_extentalloc:1d during policy enforcement on CFS secondary
1844544	CFS - Bad inode errors on secondary nodes
1844568	filesystem performance degradation
1880816	'mv' hung on CFS
1885528	CFS hang while expanding AUs
1891140	secondaries ias_ilist not updated fully.

Table 1-8 describes fixed issues in the Storage Foundation Cluster File System 5.0 MP3 RP2 release.

Table 1-8 Storage Foundation Cluster File System 5.0 MP3 RP2 fixed issues

Incident	Description
1518713	The `vxfsckd -n` command now initializes the `nthrs` variable.
1531031	Fixed an issue in which quota hard limits could be exceeded on a clustered file system.
1539892	Fixed an issue in which a clustered file system that was mounted on one node required `fsck` to be run.
1556159	Fixed an issue in which adding a file system to a diskgroup caused the monitor to label the `cvmvoldg` resource as offline, which in turn caused other CFS file systems to become offline.
1591783	Optimized `getattr`() to operate faster when binaries are mmapped from many nodes.
1600241	Fixed the cause of a hang that occurred after another node in the cluster crashed.

Table 1-9 describes fixed issues in the Storage Foundation Cluster File System 5.0 MP3 RP1 release, which are included in this release.

Table 1-9 Storage Foundation Cluster File System 5.0 MP3 RP1 fixed issues

Incident	Description
1447197	Fixed an issue after a 5.0 MP3 upgrade, CFSMountAgent restarts and is not sending alive messages.

Storage Foundation for Oracle fixed issues

Table 1-10 describes fixed issues in the Storage Foundation for Oracle 5.0 MP3 RP3 release.

Table 1-10 Storage Foundation for Oracle 5.0 MP3 RP3 fixed issues

Incidents	Description
1834675	Fix problem that 5.0MP3RP2 VRTSdbms3 Patch 139362-02 is not Jumpstart compliant.

Table 1-10 Storage Foundation for Oracle 5.0 MP3 RP3 fixed issues

Incidents	Description
1851290	User can specify logical name for offhost processing in Database Flashsnap snapplan in this release.
1851291	Fix dbed_analyzer core dump problem. Stack shows edm_print trying to print NULL msg pointer.
1851293	Fix Frequent vxpal core dump problem from orgui provider.
1851299	Storage Foundation for Oracle no longer creates world writable directories under /var/vx/vxdba.
1854447	Fix the problem for Database Flashsnap in offline mode when cloning the database offhost by commenting out certain pfile parameters (db_recovery_file_dest,audit_file_dest etc.) in the clone pfile.
1873755	Storage Foundation for Oracle no longer creates world writable log files in /var/vx/vxdba directory. The sfua_db_config command is modified to ask for DBA group information so we can set the correct group for various directories in /var/vx/vxdba.
1888031	Fixed an issue with dbed_ckptpolicy -o update error when volume set has only one volume.
1899522	Fixed an issue with 5.0MP3_RP3(1110a):dbed checkpoints removed by VxFS without acknowledgement to dbed repository.
1902752	Fixed an issue with dbed_vmclonedb umount option not handling relocation_path properly with SNAPSHOT_MODE=offline.
1905491	Fixed an issue with dbed_vmsnap with option reverse_resync_commit giving some unneeded messages.
1910331	Fixed an issue with vxdbd start failed.
1666155	a broken soft link exists under /opt/VRTSdbed/.dba.

Table 1-11 describes fixed issues in the Storage Foundation for Oracle 5.0 MP3 RP2 release.

Table 1-11 Storage Foundation for Oracle 5.0 MP3 RP2 fixed issues

Incidents	Description
1481426	Fixed an issue in which the owner of the following directories was changed when installing patches or packages for the Storage Foundation for Oracle 5.0 or 5.0 MP3 releases: ■ `/etc` ■ `/etc/default` ■ `/etc/init.d` ■ `/etc/rc2.d` ■ `/opt`
1508346	Added a date stamp to entries in the `vxsnapadm_50.log` file, which is used for `trace vxsnapadm` issues.
1511321	Fixed multiple issues with the `dbed_checkconfig` script. For example, the script can now distinguish if the control file is on a volume set and can identify if some of the Oracle files are not on a VxFS file system.
1526653	Fixed an issue in which the `dbed_vmchecksnap` script output an error if the dco object name was renamed from `*_dco`.
1530125	Fixed an issue in which the owner of the following directories was changed when installing `VRTSdbms` packages for the Storage Foundation for Oracle 5.0 or 5.0 MP3 releases: ■ `/etc` ■ `/etc/default` ■ `/etc/init.d` ■ `/etc/rc2.d` ■ `/opt`
1533204	Fixed an issue in which the DBED GUI showed archive log mode as disabled when the archive log was actually enabled. Also, fixed an issue in which the number of file systems and the number of data files always showed as 0 (zero).
1651363	Fixed a security issue with the vxdbms server, in which an attacker could see the name and port of the server.

Table 1-12 describes fixed issues in the Storage Foundation for Oracle 5.0 MP3 RP1 release, which are included in this release.

Table 1-12 Storage Foundation for Oracle 5.0 MP3 RP1 fixed issues

Incidents	Description
1425256	Support flashsnap CVM slave.
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.
1433244	Improved boot time for the DBED repository database server startup script.
1433571	Sybase repository database server is no longer creating world writable files under `/tmp`.
1434688	Storage Foundation for Oracle is no longer creating world writable files under `/tmp`.
1435527	Improved boot time for DBEDAgent startup script.
1435906	Fixed JumpStart problem of VxDBMS package perl scripts are not executable.

Storage Foundation for DB2 fixed issues

Table 1-13 describes fixed issues in the Storage Foundation for DB2 5.0 MP3 RP3 release.

Table 1-13 Storage Foundation for DB2 5.0 MP3 RP3 fixed issues

Incidents	Description
1834675	Fix problem that 5.0MP3RP2 VRTSdbms3 Patch 139362-02 is not Jumpstart compliant.
1851299	Storage Foundation for DB2 no longer creates world writable directories under /var/vx/vxdba.
1873755	Storage Foundation for DB2 no longer creates world writable log files in /var/vx/vxdba directory. The sfua_db_config command is modified to ask for DBA group information so we can set the correct group for various directories in /var/vx/vxdba.
1854456	Fixed an issue with db2ed_vmclonedb -o recoverdb fails for online snapshot mode on DB2 9.5 FixPak 2 and beyond.
1854457	Fixed an issue with db2ed_clonedb Checkpoint clonedb fails for online,offline checkpoint on DB2 9.5 FixPak 2 and beyond.

Table 1-13 Storage Foundation for DB2 5.0 MP3 RP3 fixed issues

Incidents	Description
1885374	Fixed an issue withe the SFDB2 DBED commands not working with CFS, that should be documented.
1910331	ixed an issue with vxdbd start failed.

Table 1-14 describes fixed issues in the Storage Foundation for DB2 5.0 MP3 RP2 release.

Table 1-14 Storage Foundation for DB2 5.0 MP3 RP2 fixed issues

Incidents	Description
1481426	Fixed an issue in which the owner of the following directories was changed when installing patches or packages for the Storage Foundation for DB2 5.0 or 5.0 MP3 releases: ■ `/etc` ■ `/etc/default` ■ `/etc/init.d` ■ `/etc/rc2.d` ■ `/opt`
1508346	Added a date stamp to entries in the `vxsnapadm_50.log` file, which is used for `trace vxsnapadm` issues.
1530125	Fixed an issue in which the owner of the following directories was changed when installing `VRTSdbms` packages for the Storage Foundation for DB2 5.0 or 5.0 MP3 releases: ■ `/etc` ■ `/etc/default` ■ `/etc/init.d` ■ `/etc/rc2.d` ■ `/opt`
1651363	Fixed a security issue with the vxdbms server, in which an attacker could see the name and port of the server.

Table 1-15 describes fixed issues in the Storage Foundation for DB2 5.0 MP3 RP1 release, which are included in this release.

Table 1-15 Storage Foundation for DB2 5.0 MP3 RP1 fixed issues

Incidents	Description
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.
1433244	Improved boot time for the DBED repository database server startup script.
1433571	Sybase repository database server is no longer creating world writable files under `/tmp`.
1434688	Storage Foundation for DB2 is no longer creating world writable files under `/tmp`.
1435527	Improved boot time for DBEDAgent startup script.
1435906	Fixed JumpStart problem with VxDBMS package perl scripts are not executable.

Storage Foundation for Sybase fixed issues

There are no fixed issues for Storage Foundation for Sybase in this release.

Table 1-16 describes fixed issues in the Storage Foundation for Sybase 5.0 MP3 RP2 release.

Table 1-16 Storage Foundation for Sybase 5.0 MP3 RP2 fixed issues

Incidents	Description
1481426	Fixed an issue in which the owner of the following directories was changed when installing patches or packages for the Storage Foundation for Sybase 5.0 or 5.0 MP3 releases: ■ `/etc` ■ `/etc/default` ■ `/etc/init.d` ■ `/etc/rc2.d` ■ `/opt`

Storage Foundation for Oracle RAC fixed issues

Table 1-17 describes fixed issues in the Storage Foundation for Oracle RAC 5.0 MP3 RP3 release.

Table 1-17 Storage Foundation for Oracle RAC 5.0 MP3 RP3 fixed issues

Incidents	Description
1845328	Fix for issues of `vcsmmdebug <options>` command.
1840224	Enhancements for MultiPrivNIC Agent.
1847747	Enhancement for PrivNIC Agent.
1845330	Fix for the issue of starting vcsmm port if `/etc/vcsmmtab` is not present.
1877596	Fix for Panic lmx buffer modified after being freed.
1845337	Fix for message of mmpl_reconfig_ioctl: dev_ioctl failed error on console and in `/var/adm/message` after reboot.
1847605	Fix for the cssd agent monitor interval specifications.
1845377	Fix for the control script of Live Upgrade.

Veritas Cluster Server fixed issues

Table 1-18 describes fixed issues in the Veritas Cluster Server 5.0 MP3 RP3 release, which are included in this release.

Table 1-18 Veritas Cluster Server 5.0 MP3 RP3 fixed issues

Incidents	Description
1915936	Support Oracle 11gR2 for a single instance of Oracle for Solaris in 5.0MP3RP3
1906771	ASMagent connecting as sysdba instead of sysasm for 11gR2. 11g and above the ASMInst and ASMDG agents use the role sysasm rather than sysdba in the offline, online, clean, and monitor entry points.
1902230	World writable files and directories exist on VCS Java Gui installation
1898247	Netlsnr offline script does not kill listener process when ip is plumbed but the underlying MultiNICA resource is faulted.
1884737	[VCS][281-795-096] Port h halting system due to internal protocol error on gab_sf_dlv_gaps().
1882308	[VCSOR][240-998-619] Changes made to Oracle agent via e1722109 do not honour ContainerName attribute

Table 1-18 Veritas Cluster Server 5.0 MP3 RP3 fixed issues

Incidents	Description
1859598	Add Disk agent support for LDoms 1.2. See "Documentation addendum" on page 132.
1836633	[vcs][281-758-973] hashadow core in restart_had /var/VRTSvcs/lock/.hadargs parse resulted in attempt to deref null ptr
1836575	SMTP notification email should contain Entity name in subject line
1836512	[pri2][281-756-931] 'had' segv via notifier messages handler.
1834858	[281-772-629] RemoteGroup faults when setup as monitoronly and local SG is taken offline
1807047	[VCS][312-204-348] Issues found with SqlTest.pl script for Sybase agent
1803107	SFCFS0814a (Sol9 32bit): LLT heartbeat link status changed. Previous status = 0x9586ff; Current status = 0x77afff.
1782360	Match PidFile in SambaServer
1780698	[VCS][281-692-867] VCS Oracle agent not sending notification in case of an Oracle error defined in oraerror.dat
1779172	[Oakmont][Opteron]had core dump on the non-first node of a cluster
1767158	VCS5.0MP3RP1: For a "netbios" could not support bind interface only.
1763187	[VRTSvcs] [281-690-958] IPAgent in 5.0TOT crashed and dumped core due to NULL pointer dereference.
1751804	VCS 5.0MP1 (Solaris 10) WAC application fails to come online on the node dedps1111.
1749323	LLT should give error if an attempt is made to configure more than 8 links (LLT_MAX_LINK) under LLT
1748713	vxfenswap should remember root password instead of asking 24 times during operation
1744255	[AGFW] Agfw should not convert IntentionalOffline to Offline, (1) in first probe, (2) when probe is requested in Offline state
1739684	Case 320-192-581-- CCStor incorrect discovery as hasys outputdoesn't separate nodes by '#'
1590725	Introduce attribute to disable hostmonitor related logging
1556549	Parent group not autostarted when some of the resoures are online before VCS is started.

Table 1-18 Veritas Cluster Server 5.0 MP3 RP3 fixed issues

Incidents	Description
1545229	Need better/easier interface to tune entry point priorities

Table 1-19 describes fixed issues in the Veritas Cluster Server 5.0 MP3 RP2 release.

Table 1-19 Veritas Cluster Server 5.0 MP3 RP2 fixed issues

Incidents	Description
1070177	[Agents] Fixed an issue to include a new attribute to use the `db2start` command. There was no option to use the `db2start` command. Added optional attribute UseDB2start to allow users to start DB2 using the `db2start` command.
1362407	[LLT] Fixed an issue in which the `lltdump` command failed to display all the LLT packets and produces the following error: `bash-3.00# /opt/VRTSllt/lltdump -f /dev/bge2 CR C 60425 S 2559 D 00 P 000 rdy 0000 seq 000001dc len 0000 lltdump: cannot read messages on /dev/bge2: Error 0` The `lltdump` command gets control and data information from dlpi streams read head queue. The initial buffer size passed to get control information was 36. The latest dlpi drivers like bge and nge have control information that is larger than 36. Insufficient buffer size for control information produces the error message “Cannot read messages ". The buffer size was increased from 36 to 64.
1368385	[Agents] Fixed an issue in which DiskGroupSnap does not work if layered volumes are used. VxVM creates layered volumes by default, in case of larger volumes spanning multiple disks. The agent expects each volume to have a plex at each site but VxVM does not assign a site tag to plex and there is only one top level plex. Thus, the agent reports that the configuration is invalid. This was a limitation in the original agent when no layered volumes were supported.
1377324	[Agents] Fixed a parsing error which caused an error message to appear in the `/var/VRTSvcs/log/tmp/Oracle-0` file.
1451717	[VCS] Fixed an issue in which the correct error message was not displayed if the value of non-existing attribute was queried for a node from the remote cluster. The command `hasys -value <sys_from_remote_cluster> JunkAttribute` produces a core dump.

Table 1-19 Veritas Cluster Server 5.0 MP3 RP2 fixed issues

Incidents	Description
1465956	[VCS] Fixed an issue in which you cannot delete a system even if it has no service group configured on it. Whenever a system is added, it is added to the SystemList of the VCShmg group (if HostMonitorLogLvl is enabled) . While deleting the system from the cluster, VCS should silently delete this from the SystemList of VCShmg. However, it produces an error. VCS now lets you delete the system without displaying any error.
1482806	[GAB] Fixed an issue in which uninstalling GAB produced the following error "`Error in removing the gab entry in the /etc/devlinks.tab`" when the GAB module was not loaded in the kernel.
1487725	[Agents] Fixed an issue in which the zone agent monitor script failed with an unexpected error. In the month of December, the Zone agent monitor would fail with the message: "Month '12' out of range 0..11 at /opt/VRTSvcs/bin/Zone/monitor line 164". The Zone agent monitor code was not setting the timelocal() function properly. Correct monitor code. Note that the issue is related only to a specific month of the year.
1469788/ 1469787	[LLT] Fixed an issue in which LLT cannot be unloaded and returns the error message "Module LLT is in use" even when the system was shutdown.
1504693	[GAB/LLT] Fixed an issue in which LLT cannot provide backenable to GAB. This resulted in an error being produced from the GAB module gabwrite() function.
1509742	[GAB] Fixed an issue in which GAB membership to VCS (Port h) may not occur, if VCS is brought online before the Port a membership occurs. Clients of the GAB service may not get cluster membership. Symantec recommends that GAB must be configured to provide membership only after a minimum quorum number of nodes join the cluster. If a client of GAB comes up before GAB Port a forms membership on that node, then this client may not get cluster membership until it starts up on at least the configured quorum number of nodes, not even if Port a or any other GAB Ports receive cluster membership. Previously, seeding of Port a would trigger seeding on all other ports by seeding a CONNECTS message on all those ports. However, this led to a race which was fixed via e1424927. The fix disabled CONNECTS which used to propagate the SEED bit to other ports. SEED bit is now propagated to other ports after Port 'a' reconfigures. The master for each port just runs the reconfiguration calculation after Port a reconfigures there.
1522568	[Agents] Fixed an issue in which the agent framework crashed while setting the resource name for the dependent attribute.

Table 1-19 Veritas Cluster Server 5.0 MP3 RP2 fixed issues

Incidents	Description
1528584	[Agents] Fixed an issue where the system performance dropped when a large number of application resources are configured and the Application agent searches the process table continuously.
1537111	[VCS] VCS issues warning messages with `ha` commands on a ZFS root file system due to the priocntl() function being called with a NULL sched_class.
1537141	[Agents] Fixed an issue in which the Mount agent leaks memory despite the installation of the 5.0MP3HF1 patch.
1538208	[VCS] Fixed an issue in which the value of attribute HostUtilization is not 0 even after HostMonitor resource is deleted.
1539087	[Agents] Fixed an issue in which the agent framework seems to be leaking memory during message logging.
1540807	[GAB] Fixed an issue in which the error number returned by the gab_receive() function in the GAB library is wrong. The gab_receive() function returns -1, but the error number was set to 0.
1542326	[Agents] Fixed an issue in which the IPMultiNICB agent crashes and produces core dump when monitoring an IP address that is brought up outside of VCS control. An IP address brought up outside of VCS control, e.g., as a part of a non-global zone configuration, can be monitored by an IPMultiNICB resource. Such a configuration exercises a code path in the agent which causes a core dump. Source code agent to fix the problem.
1542382	[Agents] Fixed an issue in which starting the Mount agent created a defunct process.
1542391	[Agents] Fixed an issue in which VCS indicated that the zone was online when it was not active by modifying the zone agent for better monitoring. The Zone agent uses the RUNNING state to determine if a non-global zone resource is online. A non-global zone can go into the running state even before all the services inside the non-global zone are stared. Added the BootState attribute to determine at what level the non-global zone is considered to be online: single-user, multi-user, or multi-user-server.
1544263	[Agents] Fixed an issue in which the Oracle agent performs an action corresponding to the last error even when it encounters multiple errors, thereby ignoring the previous error numbers. This happens because when the list of errors was parsed by the agent, it moved to the last error and got its state to perform the action corresponding to that error. The priority of actions are: FAILOVER, UNKNOWN, and IGNORE. If any error has FAILOVER/NOFAILOVER, the resource is FAULTED. If any error has UNKNOWN action, the resource is moved to UNKNOWN state. Else, we safely ignore the error and return the state as ONLINE.

Table 1-19 Veritas Cluster Server 5.0 MP3 RP2 fixed issues

Incidents	Description
1545222	[Agents] Fixed an issue to provide the ability to pass the entry point timeout value as a parameter to agent entry points in their argument list. See "New attribute EntryPointTimeout" on page 52.
1545229	[Agents] Fixed an issue to allow control of entry point scheduling priorities and scheduling class using the new attributes EPPriority, EPClass, OnlinePriority, and OnlineClass. See "Attributes to control the scheduling of class and priority of agent entry points" on page 51.
1542334	[VCS] Fixed an issue in which the nfs_restart trigger was issuing too many hares -list commands, which impacted the response time of other HA commands invoked from the command line. The HA commands in nfs_postoffline trigger were replaced with more efficient HA commands. The nfs_restart trigger was obsolete and was removed. Also, the nfs_postoffline and nfs_preonline triggers were moved to the sample_triggers directory so that they are not invoked by default. Users are required to copy both the triggers from /opt/VRTSvcs/bin/sample_triggers to /opt/VRTSvcs/bin/triggers, if the configuration has the NFSRestart agent.
1589851	[GAB] Fixed the cause of a system panic that was due to depleted memory reserves.
1590726	[VCS] Fixed an issue in which VCS generated notifications about high CPU/SWAP usage when notifications were configured. The HostMonitor feature is enhanced to give control to the user for enabling or (fully / partially) disabling the feature through the cluster object attribute - HostMonLogLvl. VCS has the HostMonitor feature enabled by default through the VCShmg group with a HostMonitor type resource VCShm. If notification is configured in VCS, you see the notifications whenever the CPU/SWAP usage is beyond critical levels. A new attribute HostMonLogLvlí is added. The values can be 'ALL', 'HMAgentLog' or 'DisableHMAgent', with 'ALL'as default.
1600452	[Fencing] Fixed an issue in which the script to shutdown fencing (vxfen) produces an unexpected error message.

Table 1-19 Veritas Cluster Server 5.0 MP3 RP2 fixed issues

Incidents	Description
1600484	[VCS] Fixed an issue so that user names are checked and validated while verifying the configuration and modifying the UserNames attribute. A user with a special character in the userid is accepted if it is the second or later user in the UserNames attribute within the main.cf file. Only the first user name is checked for valid names. If the attribute UserNames has more than one user defined in the main.cf file or the command `haclus -modify UserNames u1 p1 u2 p2` is run, then even invalid user names were accepted.
1600786	[Fencing] Fixed an issue in which I/O errors occur in case of a network partition at any point when the keys on the coordinator disks are being refreshed using the `vxfenswap` command. If the keys on coordinator disks are accidently cleared, they can be refreshed using the `vxfenswap` command. However if there is a network partition at a particular point in the operation, it could result in I/O errors. If the keys that are registered on the coordinator disks are lost, the cluster may panic when a split-brain occurs. Using the `vxfenswap` script to replace the coordinator disks with the same disks will register the missing keys again without any risk of data corruption. However there is a possibility of seeing I/O errors because the algorithm registers the keys in the modify phase and if there is a network partition then the register(s) could override preempt(s) without synchronization. If the `vxfenswap` utility is run on existing coordinator disks, then the registrations are done in the commit phase instead of the modify phase.
1603120	[VCS] Fixed an issue where NFSRestart triggers were called despite no configured NFSRestart resources, which was detrimental to performance. See "Mandatory configuration change for the NFS and NFSRestart resources" on page 50.
1632806/ 1677496	[GAB] Fixed an issue in which panic results when clients access the gab_api pointer through GAB_API_INIT.

Table 1-19 Veritas Cluster Server 5.0 MP3 RP2 fixed issues

Incidents	Description
1633781	[VCS] Fixed an issue in which the NFS resource goes to faulted state even after it is restarted if rpcbind/portmap daemon is restarted. During the online monitoring of the NFS resource, if the rpcbind/portmap daemon is restarted, the NFS resource monitor entry point detects the resource as offline unexpectedly. This triggers the clean entry point for the resource. The clean entry point gets executed successfully and thereafter, the NFS resource tries to restart itself. The monitor entry point after the restart again detects the NFS resource as offline and the resource goes to FAULTED state. The clean entry point is used to check whether the server daemons are running or not. If the server daemons are running, it does nothing and exits successfully. However, the running daemons do not indicate that they are registered with rpcbind/portmap. The rpcbind/portmap restart terminates the registrations of all RPC daemons. So the RPC service daemons must be restarted whenever the rpcbind/portmap restarts itself. Thus, the monitor was returning offline even when the daemons were running. The clean entry point now always restarts the server daemons. If the server daemons are running, it kills the running daemons.
1633973	[VCS] Fixed an issue in which the node does not test the Authority attribute before bringing the faulted service group online, leading to concurrency violations and the service group being taken offline on the disaster recovery site.
1634924	[VCS] Fixed an issue in which the engine logs indicated CPU usage even after the HostMonitor resource is deleted.
1635792	[VCS] Fixed an issue in which the Zpool monitor returned unknown when ZFS filesystem snapshot was created. The Zpool agent monitor checks if all the ZFS file systems are mounted. If the Zpool agent monitor does not find a file system mounted, it sets the UNKNOWN state flag. Thus, ZFS snapshots are not mounted and this results in the UNKNOWN flag being set for the ZPool resource. If the ZFS file system is a snapshot, the check for mounted status is not done and hence, the UNKNOWN state flag is not set.
1638240	[Agents] Fixed an issue in which the Sybase agent is unable to bring the Sybase resource online if the RUN_<servername> file is moved to some other (non default) location. The non default location for the Sybase dataserver **RUN_<servername>** file is not supported by the Sybase agent. Hence, if you move the RUN_<servername> file to some other location, the agent is unable to bring the Sybase resource online. A new attribute named Run_ServerFile of type string was introduced for the the Sybase and SybaseBk agents. The value of this attribute can be set to the absolute path of the RUN_<servername> file.

Table 1-19 Veritas Cluster Server 5.0 MP3 RP2 fixed issues

Incidents	Description
1638725	[LLT] Fixed an issue in which the LLT timer function may not run as quickly as required if there are higher priority processes in the system. LLT uses the heartbeat mechanism between nodes to ensure and identify that the other node is alive. Any node in VCS/SFRAC sends heartbeat packets to all the other nodes in the cluster after every 50 millisecond. This heartbeat is sent with the LLT timer thread. Under a heavy load condition, LLT timer thread may not be scheduled to send heartbeat. If the LLT thread is on the busy node, it is not able to send a heartbeat for 16 seconds. The other node considers the busy node failed and this results in panic whenever the load of the busy node goes down and it starts communicating with the other node of cluster. The LLT heartbeat code has been moved from an llt thread context to a timer interrupt context. This ensures that the heartbeat is sent as soon as timer returns after 50 milliseconds. Interrupt handler will run real time and this removes scheduling delays.
1668609	[Agents] Fixed an issue in which the Proxy agent is updated to allow the target resource to be probed before scheduling the first probe of the Proxy resource.
1672405	[VCS] Fixed an issue in which a switch operation on a child service group with an OLH (Online Local Hard) and OLF (Online Local Firm) parent results in a switch of the OLH parent and the child group even though the OLF parent was online. In a situation, where two service groups depend on one child and one parent has an online local hard dependency (OLH) while the other parent has an online local firm dependency (OLF): The command: `hagrp -switch Hard_ParentSG -any` switches both the parents. The commad: `hagrp -switch Hard_ParentSG -to sysB` switches only the hard parent group along with the child group. When the `hargp -switch` command is executed with any of the following options: i) hagrp -switch SG_parent -any ii) hagrp -switch SG_parent -to <sys> The parent group switches (while the child group is online) only in the case of a hard dependency. The switch does not happen in the case of soft or firm dependency. The switch operation succeeds for an OLH parent, if only the parent group is online. The child group has no other parents online. The OLH parent and child group can have other parents. However, the OLH child group is always a leaf node.
1675815	[HAD] Fixed an issue so that the HostMonitor objects like VCShmg (Group), VCSHM (Resource), and HostMonitor (Type) are not counted in each object's number.

Table 1-19 Veritas Cluster Server 5.0 MP3 RP2 fixed issues

Incidents	Description
1677412	[Agents] Fixed an issue so that when the SystemList of the service group is modified, you do not start all agents but only the required agents. The agent that was stopped by a user on a system gets restarted even if the group has no resource of that agent type, when the SystemList is modified to add that system. On SystemList modification to add new systems in SystemList, the engine starts all the agents without ensuring if the group has a resource of that type. Code changes so that only agents for which the group has resources are started whenever the SystemList is modified to add a new system.
1703756	[VCS] Fixed an issue in which a warning message is displayed even when a parallel global group was brought online successfully. This happens because after a suitable target is determined, an internal variable is not incremented. This results in a re-visiting of the target selection algorithm, which causes error because the action is already initiated on the suitable target.
1713201	[Agents] Fixed an issue in which the Oracle agent starts Oracle with a non-default Oracle userid but the monitor function does not detect it as online. When you have a dummy user that belongs to the same group as the Oracle binaries and is a part of the Owner attribute, the Oracle agent starts Oracle but the monitor function does not detect it as online. This happens because the ID of the Owner attribute and the id of the /proc/PID/object/a.out file are checked. The a.out file is the same as the $ORACLE_HOME/bin/oracle binary. Since these two do not match, the agent detects it as online. The user ID of $ORACLE_HOME/bin/oracle binary was matched to that of the /proc/PID/object/a.out file. If these two user ids matched, you cache the cookie and proceed with the next process.

Table 1-20 describes fixed issues in the Veritas Cluster Server 5.0 MP3 RP1 release, which are included in this release.

Table 1-20 Veritas Cluster Server 5.0 MP3 RP1 fixed issues

Incidents	Description
1379299	LLT: fixed llt_recordmac() messages.

Table 1-20 Veritas Cluster Server 5.0 MP3 RP1 fixed issues

Incidents	Description

1392826	Fixed an issue where the Share agent was 10x slower on 5.0 MP1 with 300+ Share resources in a service group.
	
	Note: This fix changes basic VCS functionality, it is critically important for you to implement these changes for all service groups that contain NFSRestart resources.
	
	You must set the value of the PreOnline attribute to 1 for all service groups that contain NFSRestart resources. Failure to set the service group's PreOnline attribute to a value of 1 results in broken NFSRestart resource configurations.
	
	The `ha` commands to change this attribute are:
	`# haconf -makerw`
	`# hagrp -modify servicegroup_name PreOnline 1`
	`# haconf -dump -makero`

1394624	LLT: fixed an issue where the lltdlv thread spun indefinitely.
1395905	Changes implemented to close device file for device vxdmpconfig.
1397692	Removed a condition where VCS engine clients hung in connect when the target system was down.
1397738	Support provided for Solaris 8 and Solaris 9 branded zones.
1403471	Reduced time for global cluster fault detection.
1404384	Global groups can switch over to a node where WAC is not running, when PreSwitch is set to 1 and HAD runs properly.
1414709	The `hagrp -offline` command and `hares -offline` command now behave similarly when you bring the last resource in a service group offline.
1424927	Optimized GAB connect messages.
1427100	Fixed an issue where LDom CfgFile did not work with LDom 1.0.3.
1457429	Removed the VCS NOTICE V-16-1-53021 message after the `hastart` command is run.

Veritas Cluster Server agents for Veritas Volume Replicator fixed issues

There are no fixed issues for Veritas Cluster Server agents for Veritas Volume Replicator fixed issues in this release.

Table 1-21 describes fixed issues in Veritas Cluster Server agents for the Veritas Volume Replicator 5.0 MP3 RP2 release.

Table 1-21 Veritas Cluster Server agents for Veritas Volume Replicator 5.0 MP3 RP2 fixed issues

Incidents	Description
1255362	The RVG Snapshot agent now picks up volumes that are not in the RVG.
1295115	Enabled the fdsetup wizard to set up a firedrill SG in a secured VVR-GCO environment.
1433149	Fixed issues related to the OnlineTimeout attribute with RVGPrimary and RVGSharedPri agents.
1671357	Enabled the RVGPrimary agent to migrate a VVR primary to secondary in the case of having multiple secondaries.

Storage Foundation and High Availability known issues

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

Storage Foundation and High Availability known issues

The following are the Storage Foundation and High Availability issues that are known in this release.

Storage Foundation Manager 1.1.1 Central Server

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

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

Veritas Volume Manager known issues

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

The vxlufinish script fails an error message (1849558)

The `vxlufinish` script fails with the following type of message:

```
VxVM vxencap ERROR V-5-2-310 The c0t0d0 disk does not appear to be
prepared for this system.
ERROR:vxlufinish Failed: /altroot.5.10/usr/lib/vxvm/bin/vxencap -d
-C 10176 -c -p 5555 -g altrootdg rootdisk=c0t0d0s2
```

In the error message above, `c0t0d0` is a device path of the alternate root disk.

If VxVM 5.0 or later is not installed on the alternate bootdisk then install 5.0 or later.

The `vxlufinish` live-upgrade script can fail when the system is encapsulated and OS device naming (OSN) enabled.

Workaround

1 Change the naming scheme to Enclosure Based Naming (EBN)

```
# vxddladm set namingscheme=ebn
```

2 Run the `vxlufinish` command.

Or

1 Remove the following file to disable encapsulation of the alternate root disk:

```
# rm /altroot.5.10/vx_lu.5.10/.encapdisk
```

2 Run the `vxlufinish` command.

3 Manually encapsulate the root disk using the `vxdiskadm` utility when the alternate boot environment is active.

STK6x50 array in A/PF mode can get spurious path failures (1471740)

For an STK6x50 array in A/PF mode, if any open is done on any paths during failover, the open may fail. The paths may be marked as failed. The DMP node may then go into failed state, potentially causing any plexes associated with the node to become detached.

Workaround

If a plex becomes detached, manually clear the FAILING flag on the disk and reattach the plex.

Segmentation fault by vxsnap addmir (1896722)

Command line arguments that total more than 1024 characters cause `vxsnap` to dump core.

Workaround

Ensure arguments are shorter than 1024 characters total.

vxesd dumps core when it starts (1897011)

The `vxesd` dump cores on a system connected to a switch with more than 64 ports.

Workaround

Ensure there are fewer than 64 ports connected to system.

Data corruption on cdsdisks (1898130)

Disks with custom geometry are not handled correctly using CDS.

Workaround

Do not use custom geometry, or use sliced format instead of CDS.

Dump device changed to none after boot disk encapsulation (1898154)

The dump device is not set properly when original boot disk fails and mirrored boot disk is booted instead.

Workaround

After the system is up on mirrored boot disk, use the `dumpadm` command to set dump device to partition underlying `swapvol` on the mirrored boot disk.

Corrupted blocks in Oracle after Dynamic LUN expansion and vxconfigd core dump (1908350)

Lun expansion has a small timing window where I/O can go to the wrong location.

Workaround

Quiesce devices involved in DLE until complete.

vxconfigd hang on one of cluster node when performed some switch operations + vxdisk scandisks (dmpcert run) (1913954)

I/O to "insane" devices, ones that do not respond for long periods of time, can take a very long time and appear to be hung.

Veritas File System known issues

There are no known issues for Veritas File System in this release.

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 are the Storage Foundation for Oracle issues that are known in this release.

vxstorage_stats and dbed_analyzer might dump core (1899723)

vxstorage_stats and dbed_analyzer might dump core in some cases when the gapsnapshot plugin tries to claim the disk object.

Workaround

- To resolve this issue, enter the following commands:

```
# cd /opt/VRTSvxms/lib/map
# mv libgapdisk.so libgapdisk.so_bak
# mv libgapsnapshot.so libgapsnapshot.so_bak
```

The database fails over during Flashsnap operations (1469310)

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

Workaround

There is no workaround for this issue. The error messages depend on the timing of the database failover.

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

patchrm fails when removing VRTSdbcom and VRTSdbed patches (1726470)

The `patchrm` command fails because of missing backout data when removing the 5.0 MP3 RP3 versions of the `VRTSdbcom` and `VRTSdbed` patches. See Sun CR 6581364 for more information.

Workaround

To uninstall the patches:

1. Uninstall the VRTSdbcom and VRTSdbed package, as appropriate to your setup.
2. Install 5.0 GA version of the VRTSdbcom and VRTSdbed package.
3. Run the dbed_patch_50ga script:

```
# cd  /<dvd1-sol_sparc>/storage_foundation_for_oracle/scripts
# ./dbed_patch_50ga
```

4. Install the 5.0 MP3 patch for the VRTSdbcom and VRTSdbed package.

Storage Foundation for DB2 known issues

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

patchrm fails when removing VRTSdbcom and VRTSdb2ed patches (1726470)

The patchrm command fails because of missing backout data when removing the 5.0 MP3 RP3 versions of the VRTSdbcom and VRTSdb2ed patches. See Sun CR 6581364 for more information.

Workaround

To uninstall the patches:

1. Uninstall the VRTSdbcom and VRTSdb2ed package, as appropriate to your setup.
2. Install 5.0 GA version of the VRTSdbcom and VRTSdb2ed package.
3. Run the dbed_patch_50ga script:

```
# cd  /<dvd1-sol_sparc>/storage_foundation_for_oracle/scripts
# ./dbed_patch_50ga
```

4. Install the 5.0 MP3 patch for the VRTSdbcom and VRTSdb2ed package.

vxstorage_stats and dbed_analyzer might dump core (1899723)

vxstorage_stats and dbed_analyzer might dump core in some cases when the gapsnapshot plugin tries to claim the disk object.

Workaround

- To resolve this issue, enter the following commands:

```
# cd /opt/VRTSvxms/lib/map
# mv libgapdisk.so libgapdisk.so_bak
# mv libgapsnapshot.so libgapsnapshot.so_bak
```

The database fails over during Flashsnap operations (1475719)

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

Workaround

There is no workaround for this issue. The error messages depend on the timing of the database failover.

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

Storage Foundation for Oracle RAC known issues

The following are the Storage Foundation for Oracle RAC issues that are known in this release.

An issue with upgrading Storage Foundation for Oracle RAC using Live Upgrade (1912245)

During the process of Live Upgrade from Storage Foundation for Oracle RAC (SFRAC) 5.MP3 to 5.0 MP3 RP3 the device files of LLT, GAB and vxfen gets removed.

Workaround

Symantec provides a hotfix for 5.0MP3 issue.

See "Upgrading SFRAC using Live Upgrade" on page 88.

Joining a new node to the cluster may fail (1390591)

If you have a RAC cluster that has fencing enabled and a Sun StorageTek 2540 machine configured in A/PF mode, joining a new node to the cluster may fail if the cluster has a failover in progress.

Workaround

There is no workaround.

Startup of the Oracle database may fail

The database 10.2.0.4 might not start resulting in the following error:

```
ORA-600 KSFDNFY2] [ODM ERROR V-41-4-4-49-22 INVALID ARGUMENT] DB
STARTUP).
```

Workaround

To resolve this issue apply Oracle patch 7195403.

Veritas Cluster Server known issues

There are no known issues for Veritas Cluster Server in this release.

Software limitations

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

- Veritas Enterprise Administrator-Veritas Volume Replicator
- Storage Foundation for Oracle software limitations
- Storage Foundation for DB2 software limitations

Veritas Enterprise Administrator-Veritas Volume Replicator

The following are the Veritas Volume Replicator software limitations that are known in this release.

There is a issue when using ja_JP.PCK (1382431)

When using ja_JP.PCK the `vxsvc` server stops.

Workaround

To resolve this issue is to locale ja_JP.eucJP.

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 respository, 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 24 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.

No support for running DBED commands on Cluster File System

Storage Foundation for DB2 does not support running DBED commands on Cluster File System.

Older backups failing to be restored using the DBED scripts

If you are currently using backup and restore for the DBED respository, 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 27 for incident 1425261.

Veritas Cluster Server software limitations

Following is a known limitations in the 5.0 MP3 RP3 release of Veritas Cluster Server:

Changes in behavior for Storage Foundation High Availability

The following sections describe changes in product behavior in this release.

About the new installrp script

Veritas Storage Foundation and High Availability Solutions 5.0 MP3 RP3 provides a new upgrade script.

To upgrade from Veritas Storage Foundation and High Availability Solutions version 5.0 MP3 or later, the recommended upgrade method is to use the new upgrade script. To use the new upgrade script, run the `installrp` command.

The `installrp` script allows you to upgrade all the patches associated with the packages installed. After using the `installrp` script you will need to reboot your system.

See "Upgrading using the installrp script" on page 87.

installrp script options

Table 1-22 shows command line options for the product upgrade script.

Table 1-22 Available command line options

Command Line Option	Function
system1 system2...	Specifies the systems on which to run the upgrade options. If not specified, the command prompts for a system name.
-listpatches	Displays a list of all patches required for the specified product. The patches are listed in correct installation order.

Changes in Veritas Cluster Server behavior

The following sections describe changes in Veritas Cluster Server behavior for this release.

Mandatory configuration change for the NFS and NFSRestart resources

You must perform the following instructions for VCS configurations that have NFSRestart resources. Failure to perform these instructions can result in NFS/NFSRestart resources not functioning correctly.

Symantec implemented this change to prevent the invocation of NFSRestart-related triggers when no NFSRestart resources in the VCS configuration.

To copy the nfs_preonline and nfs_postoffline files

- Copy the nfs_preonline and nfs_postoffline files to the /opt/VRTSvcs/bin/triggers directory.

```
# cp /opt/VRTSvcs/bin/sample_triggers/nfs_preonline \
/opt/VRTSvcs/bin/triggers
```

```
# cp /opt/VRTSvcs/bin/sample_triggers/nfs_postoffline \
/opt/VRTSvcs/bin/triggers
```

Attributes to control the scheduling of class and priority of agent entry points

Symantec has introduced four new attributes—EPPriority, EPClass, OnlinePriority, and OnlineClass—to enable you to control the scheduling of class and priority of the agent functions or entry points. The new attributes OnlineClass and OnlinePriority are used to set the scheduling class and priority for the online entry point. The new attributes EPClass and EPPriority are used to set the scheduling class and priority for all entry points, except the online entry point.

These attributes provide a single interface to tune the scheduling parameters for all entry points (except the online entry point). It does not matter if they are implemented as C-based or script-based entry points. The OnlineClass and OnlinePriority attributes provide the same functionality for only the online entry point.

It is usually required that the monitor, clean, offline and the other entry points running on an application have a higher scheduling class or priority without which they would compete with the application for system resources. However, running the online entry point with a higher scheduling class or priority may create problems because applications inherit the scheduling parameters from the application vendors, who specify that the applications are run using the default operating system scheduling parameters. Also, the online entry point is usually invoked before you start the application and the system is not very busy.

Hence, you must usually set the values of EPPriority and EPClass attributes to a higher value than the default value. You must usually set the value of the OnlinePriority and OnlineClass attribute to the default operating system scheduling values.

Note: You must either use all four new attributes or set them to -1 to go back to using the older Agent* and Script* attributes. A combination of the two different sets of attributes is not supported.

Table 1-23 indicates the values that apply to these new attributes.

Table 1-23 Attribute values to schedule class and priority of agent entry points

Attributes	Values
OnlineClass / EPClass	The default value for the attribute is -1. This indicates that this attribute is not in use and hence VCS will use the older AgentClass / AgentPriority and ScriptClass / ScriptPriority attributes.
OnlinePriority / EPPriority	The default value for this attribute is -1. This indicates that this attribute is not in use and hence, VCS will use the older AgentClass/Priority and ScriptClass/Priority attributes. If the value of this attribute is 0, it indicates the base operating system priority for the configured scheduling class. For example, on Solaris, if the EPClass attribute is TS*, and the value of the EPPriority attribute is set to 0, then the base priority for entry points is set to 59 by the operating system. Similarly on Solaris, if scheduling class is RT*, then base priority is 100. If the value of this attribute varies from -60 to 60 (except 0 and -1), it increases or decreases the base priority by the configured value. For example, on Solaris, if EPClass is set to TS* and EPPriority is set to -20, then the scheduling priority of the entry point would be 39 (59 base value and - 20 configured value). *TS (for Solaris) = TimeShare scheduling class *RT (for Solaris) = RealTime scheduling class

New attribute EntryPointTimeout

The new attribute EntryPointTimeout is used to pass the entry point timeout value as a parameter to agent entry points in their argument list. This is an internal attribute and you are not required to change the value of this attribute. This attribute is strictly for the use of agent developers.

Downloading the rolling patch archive

The patches included in the 5.0 MP3 RP3 release are available for download from the Symantec website. After downloading the 5.0 MP3 RP3 file, use the gunzip and tar to uncompress and extract.

For the 5.0 MP3 RP3 download archive and instructions, see the following TechNote on the Symantec Technical Support website:

For Solaris SPARC,

http://entsupport.symantec.com/docs/281987

For Solaris x64,

http://entsupport.symantec.com/docs/286955

Patches included in this rolling patch

This section describes the Solaris SPARC and x64 patches included in this rolling patch.

- Veritas Cluster Server patches
- Veritas Cluster Server high availability agent patches
- Storage Foundation patches
- File System patches
- Volume Manager and Volume Replicator patches
- Storage Foundation Cluster File System patches
- Storage Foundation for Oracle RAC patches
- Storage Foundation for DB2 patches
- Storage Foundation for Oracle patches
- Storage Foundation for Sybase patches

Veritas Cluster Server patches

This sections describes the VCS Solaris SPARC and x64 patches.

Solaris SPARC

Table 1-24 describes the Solaris SPARC VCS patches that are included in this rolling patch:

Table 1-24 VCS 5.0 MP3 RP3 Solaris SPARC patches

Patches	Description	Size	Solaris 8	Solaris 9	Solaris 10
142607-03	Contains fixes for: VRTScscm	9 MB			X
139359-03	Contains fixes for: VRTSllt, VRTSgab, VRTSvxfen	6.0 MB			X
139358-03	Contains fixes for: VRTSvcs, VRTSvcsag	85 MB			X
139357-03	Contains fixes for: VRTSllt, VRTSgab, VRTSvxfen, VRTSvcs, VRTSvcs, VRTScscm	101 MB		X	
139356-03	Contains fixes for: VRTSllt, VRTSgab, VRTSvxfen, VRTSvcs, VRTSvcs, VRTScscm	101 MB	X		
123722-02	VRTSat 5.0MP3: Maintenance Patch for Authentication Server	88 MB	X	X	X

Solaris x64

Table 1-25 describes the Solaris x64 VCS patches that are included in this rolling patch:

Table 1-25 VCS 5.0 MP3 RP3 Solaris x64 patches

Patches	Description	Size	Solaris 10
142608-03	Contains fixes for: VRTScscm	8.9 MB	X
139361-03	Contains fixes for: VRTSvcs, VRTSvcsag	83 MB	X
139360-03	Contains fixes for: VRTSllt, VRTSgab, VRTSvxfen	5 MB	X

Veritas Cluster Server high availability agent patches

This sections describes the Veritas Cluster Server high availability agent patches for Oracle, Sybase, and DB2 SPARC and x64 patches.

Solaris SPARC

Table 1-24 describes the Solaris SPARC VCS agent patches that are included in this rolling patch:

Table 1-26 VCS 5.0 MP3 RP3 Solaris SPARC patches

Patches	Description	Size	Solaris 8	Solaris 9	Solaris 10
141286-03	Contains fixes for: VRTSvcssy	274 KB	X	X	X
141285-03	Contains fixes for: VRTSvcsdb	159 KB	X	X	X
141284-03	Contains fixes for: VRTSvcsor, VRTScsocw	17 MB	X	X	X

Solaris x64

Table 1-25 describes the Solaris x64 VCS agent patches that are included in this rolling patch:

Table 1-27 VCS 5.0 MP3 RP3 Solaris x64 patches

Patches	Description	Size	Solaris 10
141289-03	Contains fixes for: VRTSvcssy	226 KB	X
141288-03	Contains fixes for: VRTSvcsor, VRTScsocw	22 MB	X
141287-03	Contains fixes for: VRTSvcsdb	159 KB	X

Storage Foundation patches

This sections describes the Storage Foundation Solaris SPARC and x64 patches.

Solaris SPARC

Table 1-28 describes the Solaris SPARC Storage Foundation patches that are included in this rolling patch:

Table 1-28 SF 5.0 MP3 RP3 Solaris SPARC patches

Patches	Description	Size	Solaris 8	Solaris 9	Solaris 10
142607-03	VCS: cscm	9 MB			X
141745-01	VCS Agents for VVR 5.0: MP3RP2 for VVR 5.0	303 KB	X	X	X
141279-01	VRTSmapro 5.0MP3RP2: Rolling Patch for 5.0MP3 for Solaris 8, 9 and 1	49 KB	X	X	X
140661-01	VRTSobgui 5.0MP3RP2: Maintenance Patch for VEA GUI	126 MB	X	X	X
140657-01	VRTSdsa 5.0MP3RP2: Maintenance Patch for VRTSdsa 5.0	45 KB	X	X	X
139744-01	VRTSccg 5.0MP3RP1: Maintenance Patch for VRTSccg	401 MB	X	X	X
139743-01	VRTSaa 5.0MP3RP1: Maintenance Patch for VRTSaa	1.1 MB	X	X	X
139742-02	VRTSobc33 5.0MP3RP2: Maintenance Patch for VEA Server	84 MB	X	X	X
139741-02	VRTSob 5.0MP3RP2: Maintenance Patch for VEA Server	21 MB	X	X	X
139737-02	VRTSdcli 5.0MP3RP3: Rolling Patch 03 for for VRTSdcli 5.0MP3	28 MB	X	X	X
139359-03	VCS: gab llt vxfen	6 MB			X
139358-03	VCS: vcs vcsag	85 MB			X
139357-03	VCS: gab llt vxfen vcs vcsag cscm	101 MB		X	
139356-03	VCS: gab llt vxfen vcs vcsag cscm	101 MB	X		

Table 1-28 SF 5.0 MP3 RP3 Solaris SPARC patches

Patches	Description	Size	Solaris 8	Solaris 9	Solaris 10
139354-01	VRTSvmman 5.0MP3RP1: Rolling Patch 01 for Volume Manager 5.0MP3	1.4 MB	X	X	X
128078-02	VRTSfsman 5.0MP3: Maintenance Patch for File System 5.0	476 KB	X	X	X
123823-05	5.0MP3RP2: Rolling patch 02 for VRTSddlpr 5.0 MP3	6.5 MB	X	X	X
123821-05	VRTSalloc 5.0MP3RP3: Rolling Patch for VRTSalloc 5.0MP3	16 MB	X	X	X
123740-06	VRTSvmpro 5.0MP3RP3: Rolling Patch for VRTSvmpro 5.0MP3	15 MB	X	X	X
123722-02	5.0MP3RP1 Maintenance Patch for Authentication Server	88 MB	X	X	X
123202-06	VRTSvxfs 5.0MP3RP3: Maintenance Patch for File System 5.0-Sun5.10	32 MB			X
123201-06	VRTSvxfs 5.0MP3RP3: Maintenance Patch for File System 5.0-Sun5.9	33 MB		X	
123200-06	VRTSvxfs 5.0MP3RP3: Rolling Patch for File System 5.0MP3-Sun5.8	33 MB	X		
122058-13	VRTSvxvm 5.0MP3RP3: Rolling Patch 03 for Volume Manager 5.0MP3	198 MB	X	X	X
121714-04	VRTSfspro 5.0MP3RP3: Supplemental General Patch for Solaris 9 and 10	7.6 MB		X	X

See Table 1-30 for VxFS patches, Table 1-32 for VxVM patches, and Table 1-34 for SFCFS patches that are also included in the Storage Foundation package.

Solaris x64

Table 1-29 describes the Solaris x64 Storage Foundation patches that are included in this rolling patch:

Table 1-29 SF 5.0 MP3 RP3 Solaris x64 patches

Patches	Description	Size	Solaris 10
142608-03	VCS: cscm	8.9 MB	X
141280-01	VRTSmapro 5.0MP3RP2_x86: Rolling Patch for Solaris 10	49 KB	X
140662-01	VRTSobgui_x86 5.0MP3RP2: Maintenance Patch for VEA GUI	113 MB	X
140658-01	VRTSdsa 5.0MP3RP2_x86: Maintenance Patch for VRTSdsa 5.0	45 MB	X
139748-01	VRTSccg._x86 5.0MP3RP1: Maintenance Patch for VRTSccg	344 KB	X
139747-01	VRTSaa._x86 5.0MP3RP1: Maintenance Patch for VRTSaa	1.0 MB	X
139746-02	VRTSobc33_x86 5.0MP3RP2: Maintenance Patch for VEA Server	85 MB	X
139745-02	VRTSob_x86 5.0MP3RP2: Maintenance Patch for VEA Server	19 MB	X
139738-02	VRTSdcli 5.0MP3RP3_x86: Rolling Patch 03 for for VRTSdcli 5.0MP3	29 MB	X
139361-03	VCS: vcs vcsag	83 MB	X
139360-03	VCS: gab llt vxfen	5 MB	X
139355-01	VRTSvmman 5.0MP3RP1: Rolling Patch 01 for Volume Manager 5.0MP3_x86	1.3 MB	X
128091-02	VCS Agents for VVR 5.0: MP3RP2 for VVR 5.0 on 5.10_x86	304 KB	X
128080-02	VRTSfsman 5.0MP3: Maintenance Patch for File System 5.0_x86	439 KB	X
127363-04	VRTSvmpro 5.0MP3RP3_x86: Rolling Patch for VRTSvmpro 5.0MP3Sun5.10_x86	13 MB	X

Table 1-29 SF 5.0 MP3 RP3 Solaris x64 patches

Patches	Description	Size	Solaris 10
127362-03	VRTSddlpr 5.0MP3RP2_x86: Rolling Patch 02 for VRTSddlpr 5.0 MP3	7.1 MB	X
127361-03	VRTSalloc 5.0MP3RP3_x86: Rolling Patch for VRTSalloc 5.0MP3Sun5.10_x86	17 MB	X
127342-02	VRTSfspro 5.0MP3RP3_x86: Multiple Fixes Patch for VRTSfspro 5.0	7.3 MB	X
127337-04	VRTSvxfs 5.0MP3RP3_x86: Maintenance Patch for File System 5.0-Sun5.10	26 MB	X
127336-04	VRTSvxvm 5.0MP3RP3_x86: Rolling Patch 03 for VRTSvxvm 5.0MP3Sun5.10_x86	142 MB	X

See Table 1-31 for VxFS patches, Table 1-33 for VxVM patches, and Table 1-35 for SFCFS patches that are also included in the Storage Foundation package.

File System patches

This sections describes the File System Solaris SPARC and x64 patches.

Solaris SPARC

Table 1-30 describes the Solaris SPARC File System patches that are included in this rolling patch:

Table 1-30 VxFS 5.0 MP3 RP3 Solaris SPARC patches

Patches	Description	Size	Solaris 8	Solaris 9	Solaris 10
140661-01	VRTSobgui 5.0MP3RP2: Maintenance Patch for VEA GUI	126 MB	X	X	X
140657-01	VRTSdsa 5.0MP3RP2: Maintenance Patch for VRTSdsa 5.0	45 KB	X	X	X
139744-01	VRTSccg 5.0MP3RP1: Maintenance Patch for VRTSccg	401 MB	X	X	X
139743-01	VRTSaa 5.0MP3RP1: Maintenance Patch for VRTSaa	1.1 MB	X	X	X

Table 1-30 VxFS 5.0 MP3 RP3 Solaris SPARC patches

Patches	Description	Size	Solaris 8	Solaris 9	Solaris 10
139742-02	VRTSobc33 5.0MP3RP2: Maintenance Patch for VEA Server	84 MB	X	X	X
139741-02	VRTSob 5.0MP3RP2: Maintenance Patch for VEA Server	21 MB	X	X	X
139737-02	VRTSdcli 5.0MP3RP3: Rolling Patch 03 for for VRTSdcli 5.0MP3	28 MB	X	X	X
128078-02	VRTSfsman 5.0MP3: Maintenance Patch for File System 5.0	476 KB	X	X	X
123722-02	5.0MP3RP1 Maintenance Patch for Authentication Server	88 MB	X	X	X
123202-06	VRTSvxfs 5.0MP3RP3: Maintenance Patch for File System 5.0-Sun5.10	32 MB			X
123201-06	VRTSvxfs 5.0MP3RP3: Maintenance Patch for File System 5.0-Sun5.9	33 MB		X	
123200-06	VRTSvxfs 5.0MP3RP3: Rolling Patch for File System 5.0MP3-Sun5.8	33 MB	X		
121714-04	VRTSfspro 5.0MP3RP3: Supplemental General Patch for Solaris 9 and 10	7.6 MB		X	X

Solaris x64

Table 1-31 describes the Solaris x64 File System patches that are included in this rolling patch:

Table 1-31 VxFS 5.0 MP3 RP3 Solaris x64 patches

Patches	Description	Size	Solaris 10
141280-01	VRTSmapro 5.0MP3RP2_x86: Rolling Patch for Solaris 10	49 KB	X
140662-01	VRTSobgui_x86 5.0MP3RP2: Maintenance Patch for VEA GUI	113 MB	X
140658-01	VRTSdsa 5.0MP3RP2_x86: Maintenance Patch for VRTSdsa 5.0	45 MB	X

Table 1-31 VxFS 5.0 MP3 RP3 Solaris x64 patches

Patches	Description	Size	Solaris 10
139748-01	VRTSccg._x86 5.0MP3RP1: Maintenance Patch for VRTSccg	344 KB	X
139747-01	VRTSaa._x86 5.0MP3RP1: Maintenance Patch for VRTSaa	1.0 MB	X
139746-02	VRTSobc33_x86 5.0MP3RP2: Maintenance Patch for VEA Server	85 MB	X
139745-02	VRTSob_x86 5.0MP3RP2: Maintenance Patch for VEA Server	19 MB	X
139738-02	VRTSdcli 5.0MP3RP3_x86: Rolling Patch 03 for for VRTSdcli 5.0MP3	29 MB	X
127342-02	VRTSfspro 5.0MP3RP3_x86: Multiple Fixes Patch for VRTSfspro 5.0	7.3 MB	X
127337-04	VRTSvxfs 5.0MP3RP3_x86: Maintenance Patch for File System 5.0-Sun5.10	26 MB	X

Volume Manager and Volume Replicator patches

This sections describes the Volume Manager and Volume Replicator Solaris SPARC and x64 patches.

Solaris SPARC

Table 1-32 describes the Solaris SPARC Volume Manager and Volume Replicator patches that are included in this rolling patch:

Table 1-32 VxVM and VVR 5.0 MP3 RP3 Solaris SPARC patches

Patches	Description	Size	Solaris 8	Solaris 9	Solaris 10
141745-01	VCS Agents for VVR 5.0: MP3RP2 for VVR 5.0	303 KB	X	X	X
140661-01	VRTSobgui 5.0MP3RP2: Maintenance Patch for VEA GUI	126 MB	X	X	X
140657-01	VRTSdsa 5.0MP3RP2: Maintenance Patch for VRTSdsa 5.0	45 KB	X	X	X
139744-01	VRTSccg 5.0MP3RP1: Maintenance Patch for VRTSccg	401 MB	X	X	X
139743-01	VRTSaa 5.0MP3RP1: Maintenance Patch for VRTSaa	1.1 MB	X	X	X
139742-02	VRTSobc33 5.0MP3RP2: Maintenance Patch for VEA Server	84 MB	X	X	X
139741-02	VRTSob 5.0MP3RP2: Maintenance Patch for VEA Server	21 MB	X	X	X
139737-02	VRTSdcli 5.0MP3RP3: Rolling Patch 03 for for VRTSdcli 5.0MP3	28 MB	X	X	X
139354-01	VRTSvmman 5.0MP3RP1: Rolling Patch 01 for Volume Manager 5.0MP3	1.4 MB	X	X	X
123823-05	5.0MP3RP2: Rolling patch 02 for VRTSddlpr 5.0 MP3	6.5 MB	X	X	X
123821-05	VRTSalloc 5.0MP3RP3: Rolling Patch for VRTSalloc 5.0MP3	16 MB	X	X	X
123740-06	VRTSvmpro 5.0MP3RP3: Rolling Patch for VRTSvmpro 5.0MP3	15 MB	X	X	X

Table 1-32 VxVM and VVR 5.0 MP3 RP3 Solaris SPARC patches

Patches	Description	Size	Solaris 8	Solaris 9	Solaris 10
123722-02	5.0MP3RP1 Maintenance Patch for Authentication Server	88 MB	X	X	X
122058-13	VRTSvxvm 5.0MP3RP3: Rolling Patch 03 for Volume Manager 5.0MP3	198 MB	X	X	X
121714-04	VRTSfspro 5.0MP3RP3: Supplemental General Patch for Solaris 9 and 10	7.6 MB		X	X

Solaris x64

Table 1-33 describes the Solaris x64 Volume Manager and Volume Replicator patches that are included in this rolling patch:

Table 1-33 VxVM and VVR 5.0 MP3 RP3 Solaris x64 patches

Patches	Description	Size	Solaris 10
140662-01	VRTSobgui_x86 5.0MP3RP2: Maintenance Patch for VEA GUI	113 MB	X
140658-01	VRTSdsa 5.0MP3RP2_x86: Maintenance Patch for VRTSdsa 5.0	45 MB	X
139748-01	VRTSccg._x86 5.0MP3RP1: Maintenance Patch for VRTSccg	344 KB	X
139747-01	VRTSaa._x86 5.0MP3RP1: Maintenance Patch for VRTSaa	1.0 MB	X
139746-02	VRTSobc33_x86 5.0MP3RP2: Maintenance Patch for VEA Server	85 MB	X
139745-02	VRTSob_x86 5.0MP3RP2: Maintenance Patch for VEA Server	19 MB	X
139738-02	VRTSdcli 5.0MP3RP3_x86: Rolling Patch 03 for for VRTSdcli 5.0MP3	29 MB	X
139355-01	VRTSvmman 5.0MP3RP1: Rolling Patch 01 for Volume Manager 5.0MP3_x86	1.3 MB	X
128091-02	VCS Agents for VVR 5.0: MP3RP2 for VVR 5.0 on 5.10_x86	304 KB	X

Table 1-33 VxVM and VVR 5.0 MP3 RP3 Solaris x64 patches

Patches	Description	Size	Solaris 10
127363-04	VRTSvmpro 5.0MP3RP3_x86: Rolling Patch for VRTSvmpro 5.0MP3Sun5.10_x86	13 MB	X
127362-03	VRTSddlpr 5.0MP3RP2_x86: Rolling Patch 02 for VRTSddlpr 5.0 MP3	7.1 MB	X
127361-03	VRTSvxvm 5.0MP3RP3_x86: Rolling Patch 03 for VRTSvxvm 5.0MP3Sun5.10_x8	17 MB	X
127342-02	VRTSfspro 5.0MP3RP3_x86: Multiple Fixes Patch for VRTSfspro 5.0	7.3 MB	X
127336-04	VRTSvxvm 5.0MP3RP3_x86: Rolling Patch 03 for VRTSvxvm 5.0MP3Sun5.10_x86	142 MB	X

Storage Foundation Cluster File System patches

This sections describes the Storage Foundation Cluster File System Solaris SPARC and x64 patches.

Solaris SPARC

Table 1-34 describes the Solaris SPARC Storage Foundation Cluster File System patches that are included in this rolling patch:

Table 1-34 SFCFS 5.0 MP3 RP3 Solaris SPARC patches

Patches	Description	Size	Solaris 8	Solaris 9	Solaris 10
142607-03	VCS: cscm	9 MB			X
141745-01	VCS Agents for VVR 5.0: MP3RP2 for VVR 5.0	303 KB	X	X	X
140661-01	VRTSobgui 5.0MP3RP2: Maintenance Patch for VEA GUI	126 MB	X	X	X
140657-01	VRTSdsa 5.0MP3RP2: Maintenance Patch for VRTSdsa 5.0	45 KB	X	X	X
139755-03	VRTScavf 5.0MP3RP3: Maintenance Patch for Cluster Server Agents 5.0	586 KB			X
139754-03	VRTScavf 5.0MP3RP3: Maintenance Patch for Cluster Server Agents 5.0	585 KB		X	

Table 1-34 SFCFS 5.0 MP3 RP3 Solaris SPARC patches

Patches	Description	Size	Solaris 8	Solaris 9	Solaris 10
139753-03	VRTScavf 5.0MP3RP3: Maintenance Patch for Cluster Server Agents 5.0	584 KB	X		
139744-01	VRTSccg 5.0MP3RP1: Maintenance Patch for VRTSccg	401 MB	X	X	X
139743-01	VRTSaa 5.0MP3RP1: Maintenance Patch for VRTSaa	1.1 MB	X	X	X
139742-02	VRTSobc33 5.0MP3RP2: Maintenance Patch for VEA Server	84 MB	X	X	X
139741-02	VRTSob 5.0MP3RP2: Maintenance Patch for VEA Server	21 MB	X	X	X
139737-02	VRTSdcli 5.0MP3RP3: Rolling Patch 03 for for VRTSdcli 5.0MP3	28 MB	X	X	X
139359-03	VCS: gab llt vxfen	6 MB			X
139358-03	VCS: vcs vcsag	85 MB			X
139357-03	VCS: gab llt vxfen vcs vcsag cscm	101 MB		X	
139356-03	VCS: gab llt vxfen vcs vcsag cscm	101 MB	X		
139354-01	VRTSvmman 5.0MP3RP1: Rolling Patch 01 for Volume Manager 5.0MP3	1.4 MB	X	X	X
128078-02	VRTSfsman 5.0MP3: Maintenance Patch for File System 5.0	476 KB	X	X	X
123823-05	5.0MP3RP2: Rolling patch 02 for VRTSddlpr 5.0 MP3	6.5 MB	X	X	X
123821-05	VRTSalloc 5.0MP3RP3: Rolling Patch for VRTSalloc 5.0MP3	16 MB	X	X	X
123740-06	VRTSvmpro 5.0MP3RP3: Rolling Patch for VRTSvmpro 5.0MP3	15 MB	X	X	X
123722-02	5.0MP3RP1 Maintenance Patch for Authentication Server	88 MB	X	X	X
123202-06	VRTSvxfs 5.0MP3RP3: Maintenance Patch for File System 5.0-Sun5.10	32 MB			X

Table 1-34 SFCFS 5.0 MP3 RP3 Solaris SPARC patches

Patches	Description	Size	Solaris 8	Solaris 9	Solaris 10
123201-06	VRTSvxfs 5.0MP3RP3: Maintenance Patch for File System 5.0-Sun5.9	33 MB		X	
123200-06	VRTSvxfs 5.0MP3RP3: Rolling Patch for File System 5.0MP3-Sun5.8	33 MB	X		
123090-03	VRTSgms 5.0MP3RP2 Maintenance Patch for Group Messaging Services 5.0	168 KB			X
123089-03	VRTSgms 5.0MP3RP2 Maintenance Patch for Group Messaging Services 5.0	234 KB		X	
123088-03	VRTSgms 5.0MP3RP2 Maintenance Patch for Group Messaging Services 5.0	233 KB	X		
123087-05	VRTSglm 5.0MP3RP3 Maintenance Patch for Group Lock Manager 5.0	560 KB			X
123086-05	VRTSglm Maintenance Patch for Group Lock Manager 5.0	880 KB		X	
123085-05	RTSglm 5.0MP3RP3 Maintenance Patch for Group Lock Manager 5.0	864 KB	X		
122058-13	VRTSvxvm 5.0MP3RP3: Rolling Patch 03 for Volume Manager 5.0MP3	198 MB			X
121714-04	VRTSfspro 5.0MP3RP3: Supplemental General Patch for Solaris 9 and 10	7.6 MB		X	X

Solaris x64

Table 1-35 describes the Solaris x64 Storage Foundation Cluster File System patches that are included in this rolling patch:

Table 1-35 SFCFS 5.0 MP3 RP3 Solaris x64 patches

Patches	Description	Size	Solaris 10
142608-03	VCS: cscm	8.9 MB	X
140662-01	VRTSobgui_x86 5.0MP3RP2: Maintenance Patch for VEA GUI	113 MB	X
140658-01	VRTSdsa 5.0MP3RP2_x86: Maintenance Patch for VRTSdsa 5.0	45 MB	X
139756-03	VRTScavf 5.0MP3RP3_x86: Maintenance Patch for Cluster Server Agents 5.0	591 KB	X
139748-01	VRTSccg._x86 5.0MP3RP1: Maintenance Patch for VRTSccg	344 KB	X
139747-01	VRTSaa._x86 5.0MP3RP1: Maintenance Patch for VRTSaa	1.0 MB	X
139746-02	VRTSobc33_x86 5.0MP3RP2: Maintenance Patch for VEA Server	85 MB	X
139745-02	VRTSob_x86 5.0MP3RP2: Maintenance Patch for VEA Server	19 MB	X
139738-02	VRTSdcli 5.0MP3RP3_x86: Rolling Patch 03 for for VRTSdcli 5.0MP3	29 MB	X
139361-03	VCS: vcs vcsag	83 MB	X
139360-03	VCS: gab llt vxfen	5 MB	X
139355-01	VRTSvmman 5.0MP3RP1: Rolling Patch 01 for Volume Manager 5.0MP3_x86	1.3 MB	X
128091-02	VCS Agents for VVR 5.0: MP3RP2 for VVR 5.0 on 5.10_x86	304 KB	X
128080-02	VRTSfsman 5.0MP3: Maintenance Patch for File System 5.0_x86	439 KB	X
127363-04	VRTSvmpro 5.0MP3RP3_x86: Rolling Patch for VRTSvmpro 5.0MP3Sun5.10_x86	13 MB	X

Table 1-35 SFCFS 5.0 MP3 RP3 Solaris x64 patches

Patches	Description	Size	Solaris 10
127362-03	VRTSddlpr 5.0MP3RP2_x86: Rolling Patch 02 for VRTSddlpr 5.0 MP3	7.1 MB	X
127361-03	VRTSalloc 5.0MP3RP3_x86: Rolling Patch for VRTSalloc 5.0MP3Sun5.10_x86	17 MB	X
127342-02	VRTSfspro 5.0MP3RP3_x86: Multiple Fixes Patch for VRTSfspro 5.0	7.3 MB	X
127341-03	VRTSgms 5.0MP3RP2_x86: Maintenance Patch for GMS 5.0	158 KB	X
127337-04	VRTSvxfs 5.0MP3RP3_x86: Maintenance Patch for File System 5.0-Sun5.10	26 MB	X
127336-04	VRTSvxvm 5.0MP3RP3_x86: Rolling Patch 03 for VRTSvxvm 5.0MP3Sun5.10_x86	142 MB	X

Storage Foundation for Oracle RAC patches

This sections describes the Storage Foundation for Oracle RAC Solaris SPARC and x64 patches.

Solaris SPARC

Table 1-36 describes the Solaris SPARC Storage Foundation for Oracle RAC patches that are included in this rolling patch:

Table 1-36 SF for Oracle RAC 5.0 MP3 RP3 Solaris SPARC patches

Patches	Description	Size	Solaris 8	Solaris 9	Solaris 10
142617-03	VRTSdbac 5.0MP3RP3 Rolling Patch 03 for VRTS 5.0 MP3	9.1 MB			X
142616-03	VRTScavf 5.0MP3RP3: Maintenance Patch for Cluster Server Agents 5.0	10 MB		X	
142615-03	VRTSdbac 5.0MP3RP3 Rolling Patch 03 for VRTS 5.0 MP3	10 MB	X		
142607-03	VCS 5.0MP3RP3 Patch	9 MB			X
141745-01	VCS Agents for VVR 5.0MP3RP2 for VVR 5.0	303 KB	X	X	X
141284-03	VRTSvcsor VRTScsocw 5.0MP3RP3 Patch	17 MB	X	X	X
140661-01	VRTSobgui 5.0MP3RP2 Maintenance Patch for VEA GUI	126 MB	X	X	X
140657-01	VRTSdsa 5.0MP3RP2: Maintenance Patch for VRTSdsa 5.0	45 KB			X
139755-03	VRTScavf 5.0MP3RP3: Maintenance Patch for Cluster Server Agents 5.0	586 KB			X
139754-03	VRTScavf 5.0MP3RP3: Maintenance Patch for Cluster Server Agents 5.0	585 KB		X	
139753-03	VRTScavf 5.0MP3RP3: Maintenance Patch for Cluster Server Agents 5.0	584 KB	X		
139744-01	VRTSccg 5.0MP3RP1 Maintenance Patch for VRTSccg	401 MB	X	X	X
139743-01	VRTSaa 5.0MP3RP1 Maintenance Patch for VRTSaa	1.1 MB	X	X	X

Table 1-36 SF for Oracle RAC 5.0 MP3 RP3 Solaris SPARC patches

Patches	Description	Size	Solaris 8	Solaris 9	Solaris 10
139742-02	VRTSobc33 5.0MP3RP2 Maintenance Patch for VEA Server	84 MB	X	X	X
139741-02	VRTSob 5.0MP3RP2 Maintenance Patch for VEA Server	21 MB	X	X	X
139737-02	VRTSdcli 5.0MP3RP3: Rolling Patch 03 for VRTSdcli 5.0MP3	28 MB	X	X	X
139367-03	VRTSdbed 5.0MP3RP3 Rolling Patch for 5.0MP3 for Solaris	12 MB	X	X	X
139366-04	VRTSdbcom 5.0MP3RP3 Rolling Patch for 5.0MP3	71 MB	X	X	X
139362-03	VRTSdbms3 5.0MP3RP3: Rolling Patch	78 KB	X	X	X
139359-03	VCS 5.0MP3RP3 Patch	6.0 MB			X
139358-03	VCS 5.0MP3RP3 Patch	85 MB			X
139357-03	VCS 5.0MP3RP3 Patch	101 MB		X	
139356-03	VCS 5.0MP3RP3 Patch	101 MB	X		
139354-01	VRTSvmman 5.0MP3RP1: Rolling Patch 01 for Volume Manager 5.0MP3	1.4 MB	X	X	X
128078-02	VRTSfsman 5.0MP3: Maintenance Patch for File System 5.0	476 KB	X	X	X
123823-05	VRTSddlpr 5.0MP3RP2: Rolling patch 02 for VRTSddlpr 5.0 MP3	6.5 MB	X	X	X
123722-02	5.0MP3RP1 Maintenance Patch for Authentication Server	88 MB	X	X	X
123202-06	VRTSvxfs 5.0MP3RP3: Maintenance Patch for File System 5.0-Sun5.10	32 MB			X
123201-06	VRTSvxfs 5.0MP3RP3: Maintenance Patch for File System 5.0-Sun5.9	33 MB		X	
123200-06	VRTSvxfs 5.0MP3RP3: Rolling Patch for File System 5.0MP3-Sun5.8	33 MB	X		

Table 1-36 SF for Oracle RAC 5.0 MP3 RP3 Solaris SPARC patches

Patches	Description	Size	Solaris 8	Solaris 9	Solaris 10
123090-03	VRTSgms 5.0MP3RP2 Maintenance Patch for Group Messaging Services 5.0	168 KB			X
123089-03	VRTSgms 5.0MP3RP2 Maintenance Patch for Group Messaging Services 5.0	234 KB		X	
123088-03	VRTSgms 5.0MP3RP2 Maintenance Patch for Group Messaging Services 5.0	233 KB	X		
123087-05	VRTSglm 5.0MP3RP3 Maintenance Patch for Group Lock Manager 5.0	560 KB			X
123086-05	VRTSglm Maintenance Patch for Group Lock Manager 5.0	880 KB		X	
123085-05	VRTSglm 5.0MP3RP3 Maintenance Patch for Group Lock Manager 5.0	864 KB	X		
122058-13	VRTSvxvm 5.0MP3RP3: Rolling Patch 03 for Volume Manager 5.0MP3	198 MB	X	X	X
121714-04	VRTSfspro 5.0MP3RP3: Supplemental General Patch	7.6 MB		X	X

Solaris x64

Table 1-37 describes the Solaris x64 Storage Foundation for Oracle RAC patches that are included in this rolling patch:

Table 1-37 SF for Oracle RAC 5.0 MP3 RP3 Solaris x64 patches

Patches	Description	Size	Solaris 10
142622-03	VRTSdbac 5.0MP3RP3 Rolling Patch 03 for VRTS 5.0 MP3	7.6 MB	X
142608-03	VCS 5.0MP3RP3 Patch	8.9 MB	X
141288-03	VRTSvcsor VRTScsocw 5.0MP3RP3 Patch	22 MB	X
140662-01	VRTSobgui_x86 5.0MP3RP2: Maintenance Patch for VEA GUI	113 MB	X

Table 1-37 SF for Oracle RAC 5.0 MP3 RP3 Solaris x64 patches

Patches	Description	Size	Solaris 10
140658-01	VRTSdsa 5.0MP3RP2_x86: Maintenance Patch for VRTSdsa 5.0	45 MB	X
139756-03	VRTScavf 5.0MP3RP3_x86: Maintenance Patch for Cluster Server agents 5.0	591 KB	X
139748-01	VRTSccg._x86 5.0MP3RP3: Maintenance Patch for VRTSccg	344 KB	X
139747-01	VRTSaa._x86 5.0MP3RP3: Maintenance Patch for VRTSaa	1.0 MB	X
139746-02	VRTSobc33_x86 5.0MP3RP3: Maintenance Patch for VEA Server	85 MB	X
139745-02	VRTSob_x86 5.0MP3RP3: Maintenance Patch for VEA Server	19 MB	X
139738-02	VRTSdcli 5.0MP3RP3_x86: Rolling Patch 02 for VRTSdcli 5.0MP3	29 MB	X
139372-03	VRTSdbed 5.0MP3RP3_x86: Rolling Patch for 5.0MP3	3.6 MB	X
139371-03	VRTSdbcom 5.0MP3RP3_x86: Rolling Patch for 5.0 MP3	11 MB	X
139363-03	VRTSdbms3 5.0MP3RP3_x86: Rolling Patch for Solaris 10	78 KB	X
139361-03	SunOS 5.10: fixes for vcs, vcsag	83 MB	X
139360-03	SunOS 5.10: fixes for gab, llt, vxfen	5.0 MB	X
139355-01	VRTSvmman 5.0MP3RP1: Rolling Patch 01 for Volume Manager 5.0MP3_x86	1.3 MB	X
128091-02	VRTSvcsvr 5.0 MP3 RP3: Rolling patch 02 for VCS agents for Veritas Volume Replicator 5.0	304 KB	X
128080-02	VRTSfsman 5.0MP3 Maintenance Patch for File System 5.0_x86	439 KB	X
127362-03	VRTSddlpr 5.0MP3RP2_x86: Rolling Patch 02 for VRTSddlpr 5.0 MP3	7.1 MB	X
127342-02	VRTSfspro 5.0MP3RP3_x86: Multiple Fixes Patch for VRTSfspro 5.0	7.3 MB	X

Table 1-37 SF for Oracle RAC 5.0 MP3 RP3 Solaris x64 patches

Patches	Description	Size	Solaris 10
127341-03	VRTSgms 5.0MP3RP2_x86: Maintenance Patch for GMS 5.0	158 KB	X
127337-04	VRTSvxfs 5.0MP3RP_x86: Rolling Patch for File System 5.0MP3	26 MB	X
127336-04	VM 5.0_x64_MP3RP3: Rolling Patch 04 for Volume Manager 5.0MP3_x86	142 MB	X

Storage Foundation for DB2 patches

This sections describes the Storage Foundation for DB2 Solaris SPARC patches.

Solaris SPARC

Table 1-38 describes the Solaris SPARC Storage Foundation for DB2 patches that are included in this rolling patch:

Table 1-38 SF for DB2 5.0 MP3 RP3 Solaris SPARC patches

Patches	Description	Size	Solaris 8	Solaris 9	Solaris 10
142607-03	VCS: cscm	9 MB			X
141745-01	VCS Agents for VVR 5.0: MP3RP2 for VVR 5.0	303 KB	X	X	X
141285-03	VCS: vcsdb	159 KB	X	X	X
140661-01	VRTSobgui 5.0MP3RP2: Maintenance Patch for VEA GUI	126 MB	X	X	X
140657-01	VRTSdsa 5.0MP3RP2: Maintenance Patch for VRTSdsa 5.0	45 KB	X	X	X
139744-01	VRTSccg 5.0MP3RP1: Maintenance Patch for VRTSccg	401 MB	X	X	X
139743-01	VRTSaa 5.0MP3RP1: Maintenance Patch for VRTSaa	1.1 MB	X	X	X
139742-02	VRTSobc33 5.0MP3RP2: Maintenance Patch for VEA Server	84 MB	X	X	X
139741-02	VRTSob 5.0MP3RP2: Maintenance Patch for VEA Server	21 MB	X	X	X
139737-02	VRTSdcli 5.0MP3RP3: Rolling Patch 03 for for VRTSdcli 5.0MP3	28 MB	X	X	X
139369-03	VRTSdb2ed 5.0MP3RP3 Rolling Patch for 5.0MP3 for Solaris 8, 9 and 10	3.9 MB	X	X	X
139366-04	VRTSdbcom 5.0MP3RP3 Rolling Patch for 5.0MP3 for Solaris 8, 9 and 10	71 MB	X	X	X
139362-03	VRTSdbms3 5.0MP3RP3: Rolling Patch for Solaris 8, 9 and 10	78 KB	X	X	X

Table 1-38 SF for DB2 5.0 MP3 RP3 Solaris SPARC patches

Patches	Description	Size	Solaris 8	Solaris 9	Solaris 10
139359-03	VCS: gab llt vxfen	6 MB			X
139358-03	VCS: vcs vcsag	85 MB			X
139357-03	VCS: gab llt vxfen vcs vcsag cscm	101 MB		X	
139356-03	VCS: gab llt vxfen vcs vcsag cscm	101 MB	X		
139354-01	VRTSvmman 5.0MP3RP1: Rolling Patch 01 for Volume Manager 5.0MP3	1.4 MB	X	X	X
128078-02	VRTSfsman 5.0MP3: Maintenance Patch for File System 5.0	476 KB	X	X	X
123823-05	5.0MP3RP2: Rolling patch 02 for VRTSddlpr 5.0 MP3	6.5 MB	X	X	X
123821-05	VRTSalloc 5.0MP3RP3: Rolling Patch for VRTSalloc 5.0MP3	16 MB	X	X	X
123740-06	VRTSvmpro 5.0MP3RP3: Rolling Patch for VRTSvmpro 5.0MP3	15 MB	X	X	X
123722-02	5.0MP3RP1 Maintenance Patch for Authentication Server	88 MB	X	X	X
123202-06	VRTSvxfs 5.0MP3RP3: Maintenance Patch for File System 5.0-Sun5.10	32 MB			X
123201-06	VRTSvxfs 5.0MP3RP3: Maintenance Patch for File System 5.0-Sun5.9	33 MB		X	
123200-06	VRTSvxfs 5.0MP3RP3: Rolling Patch for File System 5.0MP3-Sun5.8	33 MB	X		
122058-13	VRTSvxvm 5.0MP3RP3: Rolling Patch 03 for Volume Manager 5.0MP3	198 MB	X	X	X
121714-04	VRTSfspro 5.0MP3RP3: Supplemental General Patch for Solaris 9 and 10	7.6 MB		X	X

Solaris x64

Table 1-39 describes the Solaris x64 Storage Foundation for DB2 patches that are included in this rolling patch:

Table 1-39 SF for DB2 5.0 MP3 RP3 Solaris x64 patches

Patches	Description	Size	Solaris 10
142608-03	VCS: cscm	8.9 MB	X
141287-03	VCS: vcsdb	159 KB	X
140662-01	VRTSobgui_x86 5.0MP3RP2: Maintenance Patch for VEA GUI	113 MB	X
140658-01	VRTSdsa 5.0MP3RP2_x86: Maintenance Patch for VRTSdsa 5.0	45 MB	X
139748-01	VRTSccg._x86 5.0MP3RP1: Maintenance Patch for VRTSccg	344 KB	X
139747-01	VRTSaa._x86 5.0MP3RP1: Maintenance Patch for VRTSaa	1.0 MB	X
139746-02	VRTSobc33_x86 5.0MP3RP2: Maintenance Patch for VEA Server	85 MB	X
139745-02	VRTSob_x86 5.0MP3RP2: Maintenance Patch for VEA Server	19 MB	X
139738-02	VRTSdcli 5.0MP3RP3_x86: Rolling Patch 03 for for VRTSdcli 5.0MP3	29 MB	X
139371-03	VRTSdbcom 5.0MP3RP3_x86: Rolling Patch for 5.0 MP3	11 MB	X
139363-03	VRTSdbms3 5.0MP3RP3_x86: Rolling Patch for Solaris 10	78 KB	X
139361-03	VCS: vcs vcsag	83 MB	X
139360-03	VCS: gab llt vxfen	5 MB	X
139355-01	VRTSvmman 5.0MP3RP1: Rolling Patch 01 for Volume Manager 5.0MP3_x86	1.3 MB	X
128091-02	VCS Agents for VVR 5.0: MP3RP2 for VVR 5.0 on 5.10_x86	304 KB	X
128080-02	VRTSfsman 5.0MP3: Maintenance Patch for File System 5.0_x86	439 KB	X

Table 1-39 SF for DB2 5.0 MP3 RP3 Solaris x64 patches

Patches	Description	Size	Solaris 10
127363-04	VRTSvmpro 5.0MP3RP3_x86: Rolling Patch for VRTSvmpro 5.0MP3Sun5.10_x86	13 MB	X
127362-03	VRTSddlpr 5.0MP3RP2_x86: Rolling Patch 02 for VRTSddlpr 5.0 MP3	7.1 MB	X
127361-03	VRTSalloc 5.0MP3RP3_x86: Rolling Patch for VRTSalloc 5.0MP3Sun5.10_x86	17 MB	X
127342-02	VRTSfspro 5.0MP3RP3_x86: Multiple Fixes Patch for VRTSfspro 5.0	7.3 MB	X
127337-04	VRTSvxfs 5.0MP3RP3_x86: Maintenance Patch for File System 5.0-Sun5.10	26 MB	X
127336-04	VRTSvxvm 5.0MP3RP3_x86: Rolling Patch 03 for VRTSvxvm 5.0MP3Sun5.10_x86	142 MB	X

Storage Foundation for Oracle patches

This sections describes the Storage Foundation for Oracle Solaris SPARC and x64 patches.

Solaris SPARC

Table 1-40 describes the Solaris SPARC Storage Foundation for Oracle patches that are included in this rolling patch:

Table 1-40 SF for Oracle 5.0 MP3 RP3 Solaris SPARC patches

Patches	Description	Size	Solaris 8	Solaris 9	Solaris 10
142607-03	VCS: cscm	9 MB			X
141745-01	VCS Agents for VVR 5.0: MP3RP2 for VVR 5.0	303 KB	X	X	X
140661-01	VRTSobgui 5.0MP3RP2: Maintenance Patch for VEA GUI	126 MB	X	X	X
140657-01	VRTSdsa 5.0MP3RP2: Maintenance Patch for VRTSdsa 5.0	45 KB	X	X	X
139744-01	VRTSccg 5.0MP3RP1: Maintenance Patch for VRTSccg	401 MB	X	X	X
139743-01	VRTSaa 5.0MP3RP1: Maintenance Patch for VRTSaa	1.1 MB	X	X	X
139742-02	VRTSobc33 5.0MP3RP2: Maintenance Patch for VEA Server	84 MB	X	X	X
139741-02	VRTSob 5.0MP3RP2: Maintenance Patch for VEA Server	21 MB	X	X	X
139737-02	VRTSdcli 5.0MP3RP3: Rolling Patch 03 for for VRTSdcli 5.0MP3	28 MB	X	X	X
139368-03	VRTSorgui 5.0MP3RP3 Rolling Patch for 5.0MP3 for Solaris 8, 9 and 10	14 MB	X	X	X
139367-03	VRTSdbed 5.0MP3RP3 Rolling Patch for 5.0MP3 for Solaris 8, 9 and 10	12 MB	X	X	X

Table 1-40 SF for Oracle 5.0 MP3 RP3 Solaris SPARC patches

Patches	Description	Size	Solaris 8	Solaris 9	Solaris 10
139366-04	VRTSdbcom 5.0MP3RP3 Rolling Patch for 5.0MP3 for Solaris 8, 9 and 10	71 MB	X	X	X
139362-03	VRTSdbms3 5.0MP3RP3: Rolling Patch for Solaris 8, 9 and 10	78 KB	X	X	X
139359-03	VCS: gab llt vxfen	6 MB			X
139358-03	VCS: vcs vcsag	85 MB			X
139357-03	VCS: gab llt vxfen vcs vcsag cscm	101 MB		X	
139356-03	VCS: gab llt vxfen vcs vcsag cscm	101 MB	X		
139354-01	VRTSvmman 5.0MP3RP1: Rolling Patch 01 for Volume Manager 5.0MP3	1.4 MB	X	X	X
128078-02	VRTSfsman 5.0MP3: Maintenance Patch for File System 5.0	476 KB	X	X	X
123823-05	5.0MP3RP2: Rolling patch 02 for VRTSddlpr 5.0 MP3	6.5 MB	X	X	X
123821-05	VRTSalloc 5.0MP3RP3: Rolling Patch for VRTSalloc 5.0MP3	16 MB	X	X	X
123740-06	VRTSvmpro 5.0MP3RP3: Rolling Patch for VRTSvmpro 5.0MP3	15 MB	X	X	X
123722-02	5.0MP3RP1 Maintenance Patch for Authentication Server	88 MB	X	X	X
123202-06	VRTSvxfs 5.0MP3RP3: Maintenance Patch for File System 5.0-Sun5.10	32 MB			X
123201-06	VRTSvxfs 5.0MP3RP3: Maintenance Patch for File System 5.0-Sun5.9	33 MB		X	
123200-06	VRTSvxfs 5.0MP3RP3: Rolling Patch for File System 5.0MP3-Sun5.8	33 MB	X		
122058-13	VRTSvxvm 5.0MP3RP3: Rolling Patch 03 for Volume Manager 5.0MP3	198 MB	X	X	X

Table 1-40 SF for Oracle 5.0 MP3 RP3 Solaris SPARC patches

Patches	Description	Size	Solaris 8	Solaris 9	Solaris 10
121714-04	VRTSfspro 5.0MP3RP3: Supplemental General Patch for Solaris 9 and 10	7.6 MB		X	X

Solaris x64

Table 1-41 describes the Solaris x64 Storage Foundation for Oracle patches that are included in this rolling patch:

Table 1-41 SF for Oracle 5.0 MP3 RP3 Solaris x64 patches

Patches	Description	Size	Solaris 10
142608-03	VCS: cscm	8.9 MB	X
140662-01	VRTSobgui_x86 5.0MP3RP2: Maintenance Patch for VEA GUI	113 MB	X
140658-01	VRTSdsa 5.0MP3RP2_x86: Maintenance Patch for VRTSdsa 5.0	45 MB	X
139748-01	VRTSccg._x86 5.0MP3RP1: Maintenance Patch for VRTSccg	344 KB	X
139747-01	VRTSaa._x86 5.0MP3RP1: Maintenance Patch for VRTSaa	1.0 MB	X
139746-02	VRTSobc33_x86 5.0MP3RP2: Maintenance Patch for VEA Server	85 MB	X
139745-02	VRTSob_x86 5.0MP3RP2: Maintenance Patch for VEA Server	19 MB	X
139738-02	VRTSdcli 5.0MP3RP3_x86: Rolling Patch 03 for for VRTSdcli 5.0MP3	29 MB	X
139373-03	VRTSorgui 5.0MP3RP3_x86: Rolling Patch for Solaris 10	9.6 MB	X
139372-03	VRTSdbed 5.0MP3RP3_x86: Rolling Patch for 5.0MP3	3.6 MB	X
139371-03	VRTSdbcom 5.0MP3RP3_x86: Rolling Patch for 5.0 MP3		X
139363-03	VRTSdbms3 5.0MP3RP3_x86: Rolling Patch for Solaris 10	11 MB	X

Table 1-41 SF for Oracle 5.0 MP3 RP3 Solaris x64 patches

Patches	Description	Size	Solaris 10
139361-03	VCS: vcs vcsag	83 MB	X
139360-03	VCS: gab llt vxfen	5 MB	X
139355-01	VRTSvmman 5.0MP3RP1: Rolling Patch 01 for Volume Manager 5.0MP3_x86	1.3 MB	X
128091-02	VCS Agents for VVR 5.0: MP3RP2 for VVR 5.0 on 5.10_x86	304 KB	X
128080-02	VRTSfsman 5.0MP3: Maintenance Patch for File System 5.0_x86	439 KB	X
127363-04	VRTSvmpro 5.0MP3RP3_x86: Rolling Patch for VRTSvmpro 5.0MP3Sun5.10_x86	13 MB	X
127362-03	VRTSddlpr 5.0MP3RP2_x86: Rolling Patch 02 for VRTSddlpr 5.0 MP3	7.1 MB	X
127361-03	VRTSalloc 5.0MP3RP3_x86: Rolling Patch for VRTSalloc 5.0MP3Sun5.10_x86	17 MB	X
127342-02	VRTSfspro 5.0MP3RP3_x86: Multiple Fixes Patch for VRTSfspro 5.0	7.3 MB	X
127337-04	VRTSvxfs 5.0MP3RP3_x86: Maintenance Patch for File System 5.0-Sun5.10	26 MB	X
127336-04	VRTSvxvm 5.0MP3RP3_x86: Rolling Patch 03 for VRTSvxvm 5.0MP3Sun5.10_x86	142 MB	X

Storage Foundation for Sybase patches

This sections describes the Storage Foundation for Sybase Solaris SPARC and x64 patches.

Solaris SPARC

Table 1-42 describes the Solaris SPARC Storage Foundation for Sybase patches that are included in this rolling patch:

Table 1-42 SF for Sybase 5.0 MP3 RP3 Solaris SPARC patches

Patches	Description	Size	Solaris 8	Solaris 9	Solaris 10
142607-03	VCS: cscm	9 MB			X
141745-01	VCS Agents for VVR 5.0: MP3RP2 for VVR 5.0	303 KB	X	X	X
141286-03	VCS: VRTSvcssy	274 KB	X	X	X
141279-01	VRTSmapro 5.0MP3RP2: Rolling Patch for 5.0MP3 for Solaris 8, 9 and 1	49 KB	X	X	X
141272-01	VRTSsybed 5.0MP3RP2: Rolling Patch for 5.0MP3 for Solaris 8, 9 and 10	46 KB	X	X	X
140661-01	VRTSobgui 5.0MP3RP2: Maintenance Patch for VEA GUI	126 MB	X	X	X
140657-01	VRTSdsa 5.0MP3RP2: Maintenance Patch for VRTSdsa 5.0	45 KB	X	X	X
139744-01	VRTSccg 5.0MP3RP1: Maintenance Patch for VRTSccg	401 MB	X	X	X
139743-01	VRTSaa 5.0MP3RP1: Maintenance Patch for VRTSaa	1.1 MB	X	X	X
139742-02	VRTSobc33 5.0MP3RP2: Maintenance Patch for VEA Server	84 MB	X	X	X
139741-02	VRTSob 5.0MP3RP2: Maintenance Patch for VEA Server	21 MB	X	X	X
139737-02	VRTSdcli 5.0MP3RP3: Rolling Patch 03 for for VRTSdcli 5.0MP3	28 MB	X	X	X
139359-03	VCS: gab llt vxfen	6 MB			X

Table 1-42 SF for Sybase 5.0 MP3 RP3 Solaris SPARC patches

Patches	Description	Size	Solaris 8	Solaris 9	Solaris 10
139358-03	VCS: vcs vcsag	85 MB			X
139357-03	VCS: gab llt vxfen vcs vcsag cscm	101 MB		X	
139356-03	VCS: gab llt vxfen vcs vcsag cscm	101 MB	X		
139354-01	VRTSvmman 5.0MP3RP1: Rolling Patch 01 for Volume Manager 5.0MP3	1.4 MB	X	X	X
128078-02	VRTSfsman 5.0MP3: Maintenance Patch for File System 5.0	476 KB	X	X	X
123823-05	5.0MP3RP2: Rolling patch 02 for VRTSddlpr 5.0 MP3	6.5 MB	X	X	X
123821-05	VRTSalloc 5.0MP3RP3: Rolling Patch for VRTSalloc 5.0MP3	16 MB	X	X	X
123740-06	VRTSvmpro 5.0MP3RP3: Rolling Patch for VRTSvmpro 5.0MP3	15 MB	X	X	X
123722-02	5.0MP3RP1 Maintenance Patch for Authentication Server	88 MB	X	X	X
123202-06	VRTSvxfs 5.0MP3RP3: Maintenance Patch for File System 5.0-Sun5.10	32 MB			X
123201-06	VRTSvxfs 5.0MP3RP3: Maintenance Patch for File System 5.0-Sun5.9	33 MB		X	
123200-06	VRTSvxfs 5.0MP3RP3: Rolling Patch for File System 5.0MP3-Sun5.8	33 MB	X		
122058-13	VRTSvxvm 5.0MP3RP3: Rolling Patch 03 for Volume Manager 5.0MP3	198 MB	X	X	X
121714-04	VRTSfspro 5.0MP3RP3: Supplemental General Patch for Solaris 9 and 10	7.6 MB		X	X

Solaris x64

Table 1-43 describes the Solaris x64 Storage Foundation for Sybase patches that are included in this rolling patch:

Table 1-43 SF for Sybase 5.0 MP3 RP3 Solaris x64 patches

Patches	Description	Size	Solaris 10
142608-03	VCS: cscm	8.9 MB	X
141289-03	VCS: VRTSvcssy	226 KB	X
141281-01	VRTSsybed 5.0MP3RP2_x86: Rolling Patch for Solaris 10	46 KB	X
141280-01	VRTSmapro 5.0MP3RP2_x86: Rolling Patch for Solaris 10	49 KB	X
140662-01	VRTSobgui_x86 5.0MP3RP2: Maintenance Patch for VEA GUI	113 MB	X
140658-01	VRTSdsa 5.0MP3RP2_x86: Maintenance Patch for VRTSdsa 5.0	45 MB	X
139748-01	VRTSccg._x86 5.0MP3RP1: Maintenance Patch for VRTSccg	344 KB	X
139747-01	VRTSaa._x86 5.0MP3RP1: Maintenance Patch for VRTSaa	1.0 MB	X
139746-02	VRTSobc33_x86 5.0MP3RP2: Maintenance Patch for VEA Server	85 MB	X
139745-02	VRTSob_x86 5.0MP3RP2: Maintenance Patch for VEA Server	19 MB	X
139738-02	VRTSdcli 5.0MP3RP3_x86: Rolling Patch 03 for for VRTSdcli 5.0MP3	29 MB	X
139361-03	VCS: vcs vcsag	83 MB	X
139360-03	VCS: gab llt vxfen	5 MB	X
139355-01	VRTSvmman 5.0MP3RP1: Rolling Patch 01 for Volume Manager 5.0MP3_x86	1.3 MB	X
128091-02	VCS Agents for VVR 5.0: MP3RP2 for VVR 5.0 on 5.10_x86	304 KB	X
128080-02	VRTSfsman 5.0MP3: Maintenance Patch for File System 5.0_x86	439 KB	X

Table 1-43 SF for Sybase 5.0 MP3 RP3 Solaris x64 patches

Patches	Description	Size	Solaris 10
127363-04	VRTSvmpro 5.0MP3RP3_x86: Rolling Patch for VRTSvmpro 5.0MP3Sun5.10_x86	13 MB	X
127362-03	VRTSddlpr 5.0MP3RP2_x86: Rolling Patch 02 for VRTSddlpr 5.0 MP3	7.1 MB	X
127361-03	VRTSalloc 5.0MP3RP3_x86: Rolling Patch for VRTSalloc 5.0MP3Sun5.10_x86	17 MB	X
127342-02	VRTSfspro 5.0MP3RP3_x86: Multiple Fixes Patch for VRTSfspro 5.0	7.3 MB	X
127337-04	VRTSvxfs 5.0MP3RP3_x86: Maintenance Patch for File System 5.0-Sun5.10	26 MB	X
127336-04	VRTSvxvm 5.0MP3RP3_x86: Rolling Patch 03 for VRTSvxvm 5.0MP3Sun5.10_x86	142 MB	X

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 host and install 5.0 MP3 RP3.

Review the 5.0 MP3 Installation Guide and Release Notes for your product.

To install the Veritas software for the first time

1. Mount the 5.0 MP3 product disc and navigate to the folder that contains the installation program. Choose one of the following to start the installation:
   - For Storage Foundation:
     ```
     # ./installsf -installonly [-rsh] node1 node2 ... nodeN
     ```
   - For Storage Foundation Cluster File System:
     ```
     # ./installsfcfs -installonly [-rsh] node1 node2 ... nodeN
     ```
   - For Storage Foundation for Oracle RAC:
     ```
     # ./installsfrac -installonly [-rsh] node1 node2 ... nodeN
     ```
   - For Veritas Cluster Server:
     ```
     # ./installvcs -installonly [-rsh] node1 node2 ... nodeN
     ```

   The `-installonly` option is required to perform the installation without configuring the software.
2. Review the installation prerequisites for upgrading to 5.0 MP3 RP3.
   See "Prerequisites for upgrading to 5.0 MP3 RP3" on page 87.
3. Mount the 5.0 MP3 RP3 product disc and navigate to the folder that contains the installation program.
   ```
   # ./installrp [-rsh] node1 node2 ... nodeN
   ```
4. Reboot the nodes:
   ```
   # /usr/sbin/shutdown -g0 -y -i6
   ```
5. Mount the 5.0 MP3 product disc and navigate to the folder that contains the installation program. Run the same 5.0 MP3 installation script that you used in step 1, this time specifying the `-configure` option to configure the software.
   - For Storage Foundation:
     ```
     # ./installsf -configure [-rsh] node1 node2 ... nodeN
     ```
   - For Storage Foundation Cluster File System:
     ```
     # ./installsfcfs -configure [-rsh] node1 node2 ... nodeN
     ```
   - For Storage Foundation for Oracle RAC:
     ```
     # ./installsfrac -configure [-rsh] node1 node2 ... nodeN
     ```
   - For Veritas Cluster Server:
     ```
     # ./installvcs -configure [-rsh] node1 node2 ... nodeN
     ```

   See the 5.0 MP3 Installation Guide for your product.

Prerequisites for upgrading to 5.0 MP3 RP3

The following list describes prerequisites for upgrading to the 5.0 MP3 RP3 release:

- For any product in the Storage Foundation stack, regardless of your operating system, you must have the 5.0 MP3 release installed before you can upgrade that product to the 5.0 MP3 RP3 release.
- Each system must have sufficient free space to accommodate patches.

Upgrading 5.0 MP3 to 5.0 MP3 RP3

This section describes how to upgrade from 5.0 MP3 to 5.0 MP3 RP3 on a cluster or a standalone system.

- Upgrading using the installrp script
  Use the procedures to upgrade to 5.0 MP3 RP3 on a cluster or standalone that has any of the Veritas products installed and configured.
- Upgrading SFRAC using Live Upgrade
  Use the procedures to upgrade SFRAC 5.0 MP3 to 5.0 MP3 RP3 using Live Upgrade.
- Performing a phased upgrade to 5.0 MP3 RP3 on a cluster
  Use the procedures to perform a phased upgrade to 5.0 MP3 RP3 on a cluster that has VCS, SFHA, SF for Oracle HA or SF for DB2 HA, SFCFS, or Storage Foundation for Oracle RAC installed and configured.
- Performing a full upgrade to 5.0 MP3 RP3 on a cluster
  Use the procedures to perform a full upgrade to 5.0 MP3 RP3 on a cluster that has VCS, SFHA, SF for Oracle HA or SF for DB2 HA, SFCFS, or Storage Foundation for Oracle RAC installed and configured.
- 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 using the installrp script

This section describes how to upgrade to 5.0 MP3 RP3 using the `installrp` script.

See "About the new installrp script" on page 49.

To upgrade the Veritas software using the installrp script

1 Load and mount the 5.0 MP3 RP3 software disc.

2 Move to the top-level directory on the disc.

3 Run the `installrp` script to upgrade to 5.0 MP3 RP3:

```
# installrp node1 node2 ...
```

The `installrp` script stops all the processes and upgrades to 5.0 MP3 RP3.

4 Once the `installrp` script completes, reboot the node(s).

Upgrading SFRAC using Live Upgrade

This section describes how to upgrade SFRAC 5.0 MP3 to 5.0 MP3 RP3 using Live Upgrade.

Prerequisites

- The node should have an alternate boot disk that is identical to the primary boot disk.
- Installation disc for SFRAC 5.0MP3 to be installed on the ABE.
- Installation disc for target OS to be installed on ABE.
- Verify that all the required OS patches for Live Upgrade are installed on the PBE as indicated in the following URL:

  http://sunsolve.sun.com/search/document.do?assetkey=1-61-72099-1
- If the upgrade is from Solaris 5.9 to 5.10, remove the currently installed SUNWluu and SUNWlur packages and install SUNWluu, SUNWlur, SUNWlucfg packages from Solaris 10.
- That the `vxlustart` script takes around 2-3 hours to complete uninterrupted. Symantec recommends to have a network connection that does not time out in the interim.

Upgrading using Live Upgrade from SFRAC 5.0 MP3 on Solaris 9 to SFRAC 5.0 MP3 RP3 on Solaris 10 in a 2 node SFRAC cluster.

Note: In an SFRAC cluster, each node can be upgraded individually using Live Upgrade procedure. However, the nodes will not form the cluster until all of the nodes are upgraded to new version of the product. At the end of live upgrade of the last node, all the nodes would have booted from the ABE and join the cluster.

Refer to minimum down time upgrade procedure in the SF Oracle RAC Installation and configuration guide for more details on the steps to be performed for managing applications during the upgrade.

On the PBE SFRAC 5.0MP3 should be installed and configured with Oracle.

To upgrade SFRAC using Live Upgrade with the hotfix

1 On each of the nodes, run `vxlustart` with the `-V` option to detect any problems that might prevent a successful upgrade. If this command reports success, proceed with running the `vxlustart` command. If it reports errors, correct the problem, and run the `vxlustart -V` command again.

Note: That this option does not catch failures that are reported by Solaris Live Upgrade commands.

```
# ./vxlustart -V -u 5.10 -s /mnt
```

where */mnt* is the location where you mounted the Solaris 10 software disc. You may use the following additional options depending on your need:

```
-f    to force the vtoc creation on the alternate disk
-m    use the already existing vtoc on the disk.
-U    Only to upgrade vxvm.
```

See the `vxlustart` manual page for more information.

2 On each of the nodes, run `vxlustart` command to start the Live Upgrade:

```
# ./vxlustart -v -u 5.10 -s /mnt
```

3 In case of OS upgrade and since the patches are different for Solaris 9 and Solaris 10 for SFRAC 5.0MP3, you will need to uninstall the SFRAC package from the alternate boot disk manually. Use following command to uninstall the SFRAC 5.0MP3 package from alternate root disk:

```
# pkgrm -R /altroot.5.10 VRTScsocw VRTSdbac VRTSodm \
VRTSgms VRTScavf VRTSglm VRTSgapms VRTSvail VRTSvxmsa \
VRTSdbed VRTSdbcom VRTSvcsor VRTScmccc VRTScmcs VRTSacclib \
VRTScscm VRTScscw VRTScssim VRTScutil VRTSvcsmn VRTSvcsmg \
VRTSvcsag VRTSvcs VRTSvxfen VRTSgab VRTSllt VRTSfsmnd \
VRTSfssdk VRTSfsman VRTSvrw VRTSweb VRTSvcsvr VRTSvrpro \
VRTSddlpr VRTSvdid VRTSvmpro VRTSalloc VRTSdcli VRTSvmman \
VRTSspt VRTSaa VRTSmh VRTSccg VRTSobgui VRTSfspro VRTSdsa \
VRTSob VRTSobc33 VRTSat VRTSpbx VRTSvxfs VRTScisco \
VRTSvxvm VRTSjre15 VRTSvlic VRTSperl
```

4 Reinstall the SFRAC 5.0MP3 package on the alternate disk using the `-require rootpath_installsfrac.pl` option:

```
# ./installsfrac -rootpath /altroot5.10 -require \
rootpath_installsfrac.pl
```

This reinstalls all the SFRAC 5.0MP3 packages to ABE.

5 On each of the nodes, verify the SFRAC packages on PBE and ABE and inspect the installer logs for any failure:

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

6 On each of the nodes, complete the Live Upgrade procedure using the `vxlufinish` command:

```
# ./vxlufinish -u 5.10
```

NOTE: In case the node crashes or reboots before the `vxlufinish` command completes successfully, you can remount the alternate disk and restart Live Upgrade, enter the following commands:

```
# ./vxlustart -r -u  5.10
# ./vxlufinish -u 5.10
```

7 Reboot the nodes. The nodes will be booted from ABE when they come up.

```
# shutdown -g0 -y -i6
```

NOTE: In case the node does not boot from ABE due to any reason, the following trouble shooting step may be performed to recover.

Boot from PBE from the PROM, enter the following commands:

```
# ./vxlustart -r -u  5.10
# touch ./altroot.5.10/vx_lu.5.10/.ran_vx_lustart
# ./vxlufinish -u 5.10
# shutdown -g0 -y -i6
```

8 On each of the cluster nodes, verify that ABE is the active boot environment on the ABE:

```
# lustatus
```

9 On one of the nodes, verify that each of the nodes have joined the cluster by entering the following command:

```
# gabconfig -a
```

Performing a phased upgrade to 5.0 MP3 RP3 on a cluster

Performing a phased upgrade 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 performing a phased upgrade on a cluster:

1 Freeze service group operations and stop VCS on the cluster.

2 Select a group of one or more cluster nodes to upgrade (group A), and leave a group of one or more nodes running (group B).

3 Take offline the nodes in group A and install the software patches on those nodes.

4 Take offline the nodes in group B and bring online the nodes in group A to restart cluster failover services.

5 Upgrade the nodes in group B, then bring those nodes online to join. The cluster is fully restored.

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

- Performing a phased upgrade to 5.0 MP3 RP3 for VCS
- Performing a phased upgrade to 5.0 MP3 RP3 on a Storage Foundation HA cluster
- Performing a phased upgrade to 5.0 MP3 RP3 on a Storage Foundation Cluster File System cluster
- Performing a phased upgrade to 5.0 MP3 RP3 on a Storage Foundation for Oracle RAC cluster

Performing a phased upgrade to 5.0 MP3 RP3 for VCS

The following procedure describes performing a phased upgrade for VCS.

To perform a phased upgrade to 5.0 MP3 RP3 for VCS

1. Log in as superuser.
2. Verify that `/opt/VRTS/bin` is in your PATH so that you can execute all product commands.
3. Switch the service group to another node that is running.
   ```
   # hagrp -switch service_group -to nodename
   ```
4. Make the VCS configuration writable on a node that is being upgraded:
   ```
   # haconf -makerw
   ```
5. Freeze the service group operations. Enter the following command on each node, if you selected a group of nodes on which to upgrade the operating system:
   ```
   # 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 19 for these nodes.
9. Stop VCS on each node in the selected group:
   ```
   # hastop -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 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 operating system on the nodes in the selected group at this stage and patch them to a supported kernel version.
See "System requirements" on page 8.

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 that started by the init scripts, if any.

14 Mount the 5.0 MP3 RP3 product disc and navigate to the folder that contains the installation program. On the first sub-cluster, use `installrp` command to upgrade VCS to 5.0MP3RP3:

```
# ./installrp node1 node2…
```

15 Stop VCS, I/O fencing, GAB, and LLT on the nodes that you plan to upgrade next.

```
# hastop -local
# /etc/init.d/vxfen stop
# /etc/init.d/gab stop
# /etc/init.d/llt stop
```

16 On the first sub-cluster, restart the nodes:

```
# shutdown -g0 -y -i6
```

17 On the nodes that you have rebooted, seed the nodes.

```
# gabconfig -xc
```

18 Make the VCS configuration writable again from any node in the selected group:

```
# haconf -makerw
```

19 Unfreeze the service group operations on each node where you upgraded the operating system:

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

20 Make the VCS configuration read-only:

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

21 Bring the service group online on the original node:

```
# hagrp -online service_group -sys nodename
```

22 Mount the 5.0 MP3 RP3 product disc and navigate to the folder that contains the installation program. On the second sub-cluster, use `installrp` command to upgrade VCS to 5.0MP3RP3:

```
# ./installrp node3 node4…
```

23 Restart the nodes in the second sub-cluster.

```
# shutdown -g0 -y -i6
```

Performing a phased upgrade to 5.0 MP3 RP3 on a Storage Foundation HA cluster

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

To perform a phased 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 that you can execute all product commands.

3 Switch the service group to another node that is running.

```
# hagrp -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 on which to upgrade the operating system:

```
# 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 19 for these nodes.

9 Stop VCS on each node in the selected group:

```
# hastop -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 fencing, GAB, and LLT.

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

12 If required, apply the OS kernel patches on the nodes in the selected group. See "System requirements" on page 8 and Sun Microsystems' documentation for the procedures.

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 that started by the init scripts, if any.

14 Run the one of the following commands to upgrade to 5.0 MP3 RP3.

Note: You must add patch 139742-02 prior to adding patch 139741-02 or the installation will fail.

- For Storage Foundation on Solaris 8 SPARC:

```
# patchadd -M patch_dir 123722-02 139742-02 139741-02 \
140661-01 139744-01 139743-01 123200-06 122058-13 \
140657-01 121714-04 139354-01 123740-06 139737-02 \
123821-05 123823-05 141745-01 128078-02 139356-03 \
141279-01
```

- For Storage Foundation on Solaris 9 SPARC:

```
# patchadd -M patch_dir 123722-02 139742-02 139741-02 \
140661-01 139744-01 139743-01 123201-06 122058-13 \
```

```
140657-01 121714-04 139354-01 123740-06 139737-02 \
123821-05 123823-05 141745-01 128078-02 139357-03 \
141279-01
```

- For Storage Foundation on Solaris 10 SPARC:

```
# patchadd -M patch_dir 123722-02 139742-02 139741-02 \
140661-01 139744-01 139743-01 123202-06 122058-13 \
140657-01 121714-04 139354-01 123740-06 139737-02 \
123821-05 123823-05 141745-01 128078-02 139358-03 \
139359-03 142607-03 141279-01
```

- For Storage Foundation on Solaris 10 x64:

```
# patchadd -M patch_dir 139746-02 139745-02 140662-01 \
139748-01 139747-01 127337-04 127336-04 140658-01 \
127342-02 139355-01 127363-04 139738-02 127361-03 \
127362-03 128091-02 128080-02 139360-03 139361-03 \
142608-03 141280-01
```

- For Storage Foundation for Oracle RAC on Solaris 8 SPARC:

```
# patchadd -M patch_dir 123722-02 139742-02 139741-02 \
140661-01 139744-01 139743-01 123200-06 139356-03 \
122058-13 140657-01 121714-04 139354-01 123740-06 \
139737-02 123821-05 123823-05 141745-01 128078-02 \
123085-05 139753-03 123088-03 139362-03 139366-04 \
139367-03 142615-03 141284-03
```

- For Storage Foundation for Oracle RAC on Solaris 9 SPARC:

```
# patchadd -M patch_dir 123722-02 139742-02 139741-02 \
140661-01 139744-01 139743-01 123201-06 139357-03 \
122058-13 140657-01 121714-04 139354-01 123740-06 \
139737-02 123821-05 123823-05 141745-01 128078-02 \
123086-05 139754-03 123089-03 139362-03 139366-04 \
139367-03 142616-03 141284-03
```

- For Storage Foundation for Oracle RAC on Solaris 10 SPARC:

```
# patchadd -M patch_dir 123722-02 139742-02 139741-02 \
140661-01 139744-01 139743-01 123202-06 139358-03 \
139359-03 142607-03 122058-13 140657-01 121714-04 \
139354-01 123740-06 139737-02 123821-05 123823-05 \
141745-01 128078-02 123087-05 139755-03 123090-03 \
139362-03 139366-04 139367-03 142617-03 141284-03
```

- For Storage Foundation for Oracle RAC on Solaris 10 x64:

```
# patchadd -M patch_dir 139746-02 139745-02 140662-01 \
139748-01 139747-01 127337-04 139360-03 139361-03 \
142608-03 127336-04 140658-01 127342-02 139355-01 \
127363-04 139738-02 127361-03 127362-03 128091-02 \
128080-02 139756-03 127341-03 139363-03 139371-03 \
139372-03 142622-03 141288-03
```

- For Storage Foundation for DB2 on Solaris 8 SPARC:

```
# patchadd -M patch_dir 123722-02 139742-02 139741-02 \
140661-01 139744-01 139743-01 123200-06 122058-13 \
140657-01 121714-04 139354-01 123740-06 139737-02 \
123821-05 123823-05 141745-01 128078-02 139362-03 \
```

```
139356-03 139366-04 139369-03 141285-03
```

- For Storage Foundation for DB2 on Solaris 9 SPARC:

```
# patchadd -M patch_dir 123722-02 139742-02 139741-02 \
140661-01 139744-01 139743-01 123201-06 122058-13 \
140657-01 121714-04 139354-01 123740-06 139737-02 \
123821-05 123823-05 141745-01 128078-02 139362-03 \
139357-03 139366-04 139369-03 141285-03
```

- For Storage Foundation for DB2 on Solaris 10 SPARC:

```
# patchadd -M patch_dir 123722-02 139742-02 139741-02 \
140661-01 139744-01 139743-01 123202-06 122058-13 \
140657-01 121714-04 139354-01 123740-06 139737-02 \
123821-05 123823-05 141745-01 128078-02 139362-03 \
139358-03 139359-03 142607-03 139366-04 139369-03 \
141285-03
```

- For Storage Foundation for DB2 on Solaris 10 x64:

```
# patchadd -M patch_dir 139746-02 139745-02 140662-01 \
139748-01 139747-01 127337-04 127336-04 140658-01 \
127342-02 139355-01 127363-04 139738-02 127361-03 \
127362-03 128091-02 128080-02 139363-03 139360-03 \
139361-03 142608-03 139371-03 141287-03
```

where *patch_dir* is the name of the patch directory where the patch resides.

See "Patches included in this rolling patch" on page 53.

15 After all of the nodes in the selected group are upgraded, shut down and reboot each of the nodes. After the nodes come up, application failover capability is available for that group of nodes.

16 Make the VCS configuration writable again from any node in the selected group:

```
# haconf -makerw
```

17 Unfreeze the service group operations on each node for which you upgraded the operating system:

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

18 Make the VCS configuration read-only:

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

19 Switch the service group to the original node:

```
# hagrp -switch service_group -to nodename
```

20 Repeat step 9 through step 19 for the second group of nodes.

21 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 48 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 24 or "Storage Foundation for DB2 fixed issues" on page 27 for incident 1425261.

22 If upgrading Storage Foundation for Oracle or Storage Foundation for DB2, run the `sfua_db_config -o setperm` command to set the correct permissions, owner, and group for the following directories:

- `/var/vx/vxdba`
- `/var/vx/vxdba/logs`
- `/var/vx/vxdba/locks`

Note: If you do not perform this step the DBED features will not work.

Performing a phased upgrade to 5.0 MP3 RP3 on a Storage Foundation Cluster File System cluster

The following procedure describes performing a phased upgrade on an SFCFS cluster.

To perform a phased upgrade to 5.0 MP3 RP3 on an SFCFS cluster

1 Log in as superuser.

2 Verify that `/opt/VRTS/bin` is in your PATH so that you can execute all product commands.

3 If you have a failover service group, switch the service group to another node that is running.

```
# hagrp -switch service_group -to nodename
```

4 From any node in the cluster, make the VCS configuration writable:

```
# haconf -makerw
```

5 Enter the following command to freeze HA service group operations on each node:

```
# hasys -freeze -persistent nodename
```

6 Make the configuration read-only:

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

7 Select a group of nodes that are to be upgraded first, and follow step 8 through step 30 for these nodes.

8 On each node in the selected group, enter the following command to check if any Storage Checkpoints are mounted:

```
# df -F vxfs
```

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

```
# umount /checkpoint_name
```

9 On each node in the selected group, enter the following command to check if any VxFS file systems are mounted:

```
# df | grep vxfs
```

a If any VxFS file systems are present, on each node in the selected group unmount all of the VxFS file systems:

```
# umount /filesystem
```

10 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 `vxrvg stop` command to stop each RVG individually:

```
# vxrvg -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.

---

11 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.

12 On each node in the selected group, stop all local VxVM volumes by entering the following command for each disk group:

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

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

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

13 Stop VCS on each node in the selected group:

```
# hastop -local
```

14 Stop the VCS command server:

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

where *pid_of_CmdServer* is the process ID of CmdServer.

15 Stop ODM, cluster fencing, GAB, and LLT in the following order:

```
# /etc/init.d/odm stop
# /etc/init.d/vxfen stop
```

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

16 Check if the VEA service is running:

```
# /opt/VRTS/bin/vxsvcctrl status
```

If the VEA service is running, stop it:

```
# /opt/VRTS/bin/vxsvcctrl stop
```

17 If required, apply the OS kernel patches on the nodes in the selected group.
See "System requirements" on page 8 and Sun Microsystems' documentation for the procedures.

18 Repeat step 12 through step 16 if the system reboots after upgrading the operating system. You need to perform this to stop the components that started by the init scripts, if any.

19 Run one of the following commands to upgrade to 5.0 MP3 RP3.

- For Storage Foundation Cluster File System on Solaris 8 SPARC:

```
# patchadd -M patch_dir 123722-02 139742-02 139741-02 \
140661-01 139744-01 139743-01 123200-06 139356-03 \
122058-13 140657-01 121714-04 139354-01 123740-06 \
139737-02 123821-05 123823-05 141745-01 128078-02 \
123085-05 139753-03 123088-03
```

- For Storage Foundation Cluster File System on Solaris 9 SPARC:

```
# patchadd -M patch_dir 123722-02 139742-02 139741-02 \
140661-01 139744-01 139743-01 123201-06 139357-03 \
122058-13 140657-01 121714-04 139354-01 123740-06 \
139737-02 123821-05 123823-05 141745-01 128078-02 \
123086-05 139754-03 123089-03
```

- For Storage Foundation Cluster File System on Solaris 10 SPARC:

```
# patchadd -M patch_dir 123722-02 139742-02 139741-02 \
140661-01 139744-01 139743-01 123202-06 139358-03 \
139359-03 142607-03 122058-13 140657-01 121714-04 \
139354-01 123740-06 139737-02 123821-05 123823-05 \
141745-01 128078-02 123087-05 139755-03 123090-03
```

- For Storage Foundation Cluster File System on Solaris 10 x64:

```
# patchadd -M patch_dir 139746-02 139745-02 140662-01 \
139748-01 139747-01 127337-04 139360-03 139361-03 \
142608-03 127336-04 140658-01 127342-02 139355-01 \
127363-04 139738-02 127361-03 127362-03 128091-02 \
128080-02 139756-03 127341-03
```

where *patch_dir* is the name of the patch directory where the patch resides.
See "Patches included in this rolling patch" on page 53.

20 After all of the nodes in the selected group are upgraded, follow one of the following steps:

a Stop VCS on each of unupgraded nodes and then reboot upgraded nodes.

```
# hastop -local
# shutdown -y go -i6(on upgraded nodes)
```

b Reboot upgraded nodes. After they are up, stop VCS on each of unupgraded nodes and also start VCS on upgraded nodes.

```
# hastop -local
# hastart
```

21 If necessary, reinstate any missing mount points in the `/etc/vfstab` file on each node.

22 Make the VCS configuration writable again from any node in the selected group:

```
# haconf -makerw
```

23 Enter the following command on each node in the selected group to unfreeze HA service group operations:

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

24 Make the configuration read-only:

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

25 Autoenable and online the failover service group to the upgraded node:

```
# hagrp -autoenable service_group -sys nodename
# hagrp -online service_group -sys nodename
```

26 Bring the CVM service group online on each node in the selected group:

```
# hagrp -online cvm -sys nodename
```

27 Restart all the volumes by entering the following command for each disk group:

```
# vxvol -g diskgroup startall
```

28 If you stopped any RVGs in step 10, restart each RVG:

```
# vxrvg -g diskgroup start rvg_name
```

29 Remount all VxFS file systems on all nodes in the selected group:

```
# mount /filesystem
```

30 Remount all Storage Checkpoints on all nodes in the selected group:

```
# mount /checkpoint_name
```

31 Repeat step 8 through step 30 for the second group of nodes.

Performing a phased upgrade to 5.0 MP3 RP3 on a Storage Foundation for Oracle RAC cluster

The following procedure describes performing a phased upgrade on an SF for Oracle RAC cluster.

The phased upgrade methodology involves upgrading half of the nodes in the cluster at a time.

The examples in the procedures assume a four-node SF Oracle RAC cluster with the nodes *galaxy* and *nebula* constituting the first half of the cluster and the nodes *jupiter* and *mercury* constituting the second half of the cluster.

Note: Before starting the upgrade on the first half of the cluster, back up the configuration files.

To upgrading to 5.0 MP3 RP3 on a SFRAC cluster

1. Log in as superuser.
2. Switch failover groups from the first half of the cluster from galaxy to the second half of the cluster to jupiter and mercury. For example:

```
# hagrp -switch failover_group -to jupiter
# hagrp -switch failover_group -to mercury
```

3. On the first half of the cluster, stop Oracle database:

   If the Oracle RAC instance is managed by VCS:

```
# hagrp -offline oracle_group -sys galaxy
# hagrp -offline oracle_group -sys nebula
```

   If the Oracle RAC instance is not managed by VCS, log in as the Oracle user on one of the nodes in the first half of the cluster and shut down the instances:

```
$ srvctl stop instance -d database_name -i instance_name
```

4. On the first half of the cluster, stop all applications that are not configured under VCS. Use native application commands to stop the application.
5. On the first half of the cluster, unmount the VxFS and CFS file systems that are not managed by VCS.

   Ensure that no processes are running that make use of mounted shared file system or shared volumes. To verify that no processes use the VxFS or CFS mount point, enter the following commands:

```
# mount | grep vxfs
# fuser -cu /mount_point
# umount /mount_point
```

6. On first half of the cluster stop all VxVM and CVM volumes for each diskgroup that are not managed by VCS:

```
# vxvol -g disk_group stopall
```

   Verify that no volumes remain open:

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

7. On first half of the cluster, stop VCS:

```
# hastop -local
```

8 Verify that only ports a, b, d and o are open:

```
# gabconfig -a
GAB Port Memberships
=======================================================
Port a gen 6b5901 membership 01
Port b gen 6b5904 membership 01
Port d gen 6b5907 membership 01
Port o gen 6b5905 membership 01
```

9 Mount the 5.0 MP3 RP3 product disc and navigate to the folder that contains the installation program. On the first half of the cluster, enter the `installrp` script:

```
# ./installrp galaxy nebula
```

Note: After you complete the upgrade of the first half of the cluster, no GAB ports will be showing in the output when you run the `gabconfig -a` command.

---

10 On the first half of the cluster, relink the SF Oracle RAC libraries with Oracle.

Refer to *Veritas Storage Foundation for Oracle RAC 5.0MP3 Installation and Configuration Guide* for more information.

11 On the first half of the cluster, restart the nodes:

```
# shutdown -g0 -y -i6
```

Note: After first half of the cluster restarts, ports a, b, d, and o form membership with the second half of the cluster. HAD does not form membership since it reports an engine version mismatch.

---

12 On the second half of the cluster, stop the Oracle database:

If the Oracle RAC instance is managed by VCS:

```
# hagrp -offline oracle_group -sys jupiter
# hagrp -offline oracle_group -sys mercury
```

If the Oracle RAC instance is not managed by VCS, log in as the Oracle user on one of the nodes in the second half of the cluster and shut down the instances:

```
$ srvctl stop instance -d database_name -i instance_name
```

Note: The downtime starts now.

---

13 On the second half of the cluster, stop all applications that are not configured under VCS. Use native application commands to stop the application.

14 On the second half of the cluster, unmount the VxFS or CFS file systems that are not managed by VCS.

Ensure that no processes are running that make use of mounted shared file system or shared volumes. To verify that no processes use the VxFS or CFS mount point:

```
# mount | grep vxfs
# fuser -cu /mount_point
# umount /mount_point
```

15 On the second half of the cluster, stop all VxVM and CVM volumes for each disk group that are not managed by VCS:

```
# vxvol -g disk_group stopall
```

Verify that no volumes remain open:

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

16 On the second half of the cluster, stop VCS:

```
# hastop -local
```

17 On each node in the first half of the cluster, start VCS:

```
# hastart
```

18 On the first half of the cluster, bring the VCS service groups online:

For failover service groups:

```
# hagrp -online group_name -any
```

Note: The downtime ends here.

Once the cvm service group comes online, the GAB ports v, w, and f come online; all the service groups pertaining to the CFS mounts also come online automatically. The failover service groups must be brought online manually using the above command.

19 On the first half of the cluster, manually mount the VxFS or CFS file systems that are not managed by VCS.

20 On the first half of the cluster, start all applications that are not managed by VCS. Use native application commands to start the applications.

21 Navigate to the folder that contains the installation program. On the second half of the cluster, enter the `installrp` script:

```
# ./installrp jupiter mercury
```

22 On the second half of the cluster, relink the SF Oracle RAC libraries with Oracle.

Refer to *Veritas Storage Foundation for Oracle RAC 5.0MP3 Installation and Configuration Guide* for more information.

23 Restart the nodes in the second half of the cluster.

```
# shutdown -g0 -y -i6
```

When the nodes in the second half of the cluster come up, all the GAB ports a, b, d, o, h, v, w and f will be online. All the CFS mount service groups also come online automatically.

24 On the second half of the cluster, manually mount the VxFS and CFS file systems that are not managed by VCS.

25 On the second half of the cluster, start all applications that are not managed by VCS. Use native application commands to start the applications.

26 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 48 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 24 or "Storage Foundation for DB2 fixed issues" on page 27 for incident 1425261.

27 If upgrading Storage Foundation for Oracle or Storage Foundation for DB2, run the `sfua_db_config -o setperm` command to set the correct permissions, owner, and group for the following directories:

- `/var/vx/vxdba`
- `/var/vx/vxdba/logs`
- `/var/vx/vxdba/locks`

Note: If you do not perform this step the DBED features will not work.

Performing a full upgrade to 5.0 MP3 RP3 on a cluster

Performing a full upgrade 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 performing a full upgrade on a cluster:

1 Freeze service group operations and stop VCS on the cluster.

2 Take the nodes offline and install the software patches.

3 Bring the nodes online to restart cluster failover services.

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

- Performing a full upgrade to 5.0 MP3 RP3 on a VCS cluster

- Performing a full upgrade to 5.0 MP3 RP3 on a Storage Foundation HA cluster
- Performing a full upgrade to 5.0 MP3 RP3 on a Storage Foundation Cluster File System cluster
- Performing a full upgrade to 5.0 MP3 RP3 on a Storage Foundation for Oracle RAC cluster

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

The following procedure describes performing a full upgrade on a VCS cluster.

To perform a full upgrade to 5.0 MP3 RP3 on VCS cluster

1. Log in as superuser.
2. List the service groups in your cluster and their status. On any node, type:
   ```
   # hagrp -state
   ```
3. Take the ClusterService service group offline if it is running. On any node, type:
   ```
   # hagrp -offline -force ClusterService -sys nodename
   ```
4. Make the VCS configuration writable. On any node, type:
   ```
   # haconf -makerw
   ```
5. Freeze all service groups. On any node, type:
   ```
   # hagrp -freeze service_group -persistent
   ```
   where service_group is the name of the service group. Note that the ClusterService group cannot be frozen.
6. Save the configuration (main.cf) file with the groups frozen. On any node, type:
   ```
   # haconf -dump -makero
   ```
7. Make a backup copy of the current main.cf and all types.cf configuration files. For example, on one node in the cluster, type:
   ```
   # cp /etc/VRTSvcs/conf/config/main.cf \
   /etc/VRTSvcs/conf/main.cf.save
   # cp /etc/VRTSvcs/conf/config/types.cf \
   /etc/VRTSvcs/conf/types.cf.save
   ```
8. Shut down VCS. On any node, type:
   ```
   # /opt/VRTSvcs/bin/hastop -all -force
   ```
9. Shut down CmdServer. On each node, type:
   ```
   # /opt/VRTSvcs/bin/CmdServer -stop
   ```
10. Verify that VCS has shut down. On any node, type:
    ```
    # /sbin/gabconfig -a
    ```
    The output resembles:

```
GAB Port Memberships
Port a gen 23dc0001 membership 01
```

The output shows no membership for port h.

11 For Solaris 10, on nodes that run non-global zones, check if the non-global zones are in the running state. Boot the non-global zones that are not in the running state.

- Check the zone's state. On each node, type:

  ```
  # zoneadm list -icv
  ```

- Boot the zone if it is not in the running state. On each node, type:

  ```
  # zoneadm -z zone boot
  ```

  where zone is the name of the non-global zone.

12 Unconfigure vxfen if the VCS cluster uses the fencing option. On each node, type:

```
# /sbin/vxfenconfig -U
```

13 Unload vxfen. On each node, perform the following steps:

- Identify the vxfen kernel module, for example:

  ```
  # modinfo|grep vxfen
  210 7ba44000 39488 258 1 vxfen (VRTS Fence 5.0MP3)
  ```

- Unload vxfen using the module number.

  ```
  # modunload -i 210
  ```

14 Unconfigure GAB. On each node, type:

```
# /sbin/gabconfig -U
```

15 Unload GAB. On each node, perform the following steps:

- Identify the GAB kernel module. For example:

  ```
  # modinfo | grep gab
  149 50cc6000 2b451 112 1 gab (GAB device 5.0MP3)
  ```

- Unload GAB using the module number:

  ```
  # modunload -i 149
  ```

16 Unconfigure LLT. On each node, perform the following steps:

- Type:

  ```
  # /sbin/lltconfig -U
  ```

- Type **y** on each node in response to the message.

17 Unload LLT. On each node, perform the following steps:

- Identify the LLT kernel module. For example:

  ```
  # modinfo | grep llt
  147 50ca4000 d6bc 110 1 llt (LLT 5.0MP3)
  ```

- Unload LLT using the module number:

  ```
  # modunload -i 147
  ```

18 Change directory to the Veritas Cluster Server patches directory on the disc.

19 Add the VCS 5.0 MP3 RP3 patches. On each node, type:

- For Solaris SPARC 8:

  # **patchadd 139356-03**
- For Solaris SPARC 9:

  # **patchadd 139357-03**
- For Solaris SPARC 10:

  # **patchadd 139359-03**
  # **patchadd 139358-03**
  # **patchadd 142607-03**
- For Solaris SPARC 8, 9, 10, add the 5.0 MP3 RP3 Authentication Service patch.

  # **patchadd 123722-02**
- For Solaris x64:

  # **patchadd 139360-03**
  # **patchadd 139361-03**
  # **patchadd 142608-03**

20 Verify that the patches have been installed. On each node, type:

showrev -p | grep *patch_id*

a If the cluster has NFS or NFSREstart resources, copy the nfs_preonline and nfs_postoffline files to the `/opt/VRTSvcs/bin/triggers` directory:

```
# cp /opt/VRTSvcs/bin/sample_triggers/nfs_preonline \
/opt/VRTSvcs/bin/triggers
# cp /opt/VRTSvcs/bin/sample_triggers/nfs_postoffline \
/opt/VRTSvcs/bin/triggers
```

21 If you received any error messages when you unloaded the LLT, GAB, or VXFEN modules, reboot all the nodes in the cluster.

22 If you do not perform step 21, start the following VCS components manually. On each node, type:

```
# /sbin/lltconfig -c
# /sbin/gabconfig -cx
# /sbin/vxfenconfig -c
# /opt/VRTSvcs/bin/hastart
```

You do not have to start vxfen unless you use the fencing option.

23 After VCS has started, perform the following steps:

- Verify all resources have been probed. On any node, type:

  # **hastatus -summary**
- Unfreeze all service groups. On any node, type:

  # **haconf -makerw**
  # **hagrp -unfreeze *service_group* -persistent**
  # **haconf -dump -makero**

where *service_group* is the name of the service group.

24 Bring online the ClusterService service group, if necessary. On any node type:

```
# hagrp -online ClusterService -sys nodename
```

Performing a full upgrade to 5.0 MP3 RP3 on a Storage Foundation HA cluster

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

To perform a full 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 that you can execute all product commands.

3 Make the VCS configuration writable on a node that is being upgraded:

```
# haconf -makerw
```

4 Freeze the HA service group operations. Enter the following command on each node, if you selected a group of nodes on which to upgrade the operating system:

```
# hasys -freeze -persistent nodename
```

5 Make the VCS configuration read-only:

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

6 Close any instance of VCS GUI that is running on the node.

7 Stop VCS:

```
# hastop -local
```

8 Stop the VCS command server:

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

where *pid_of_CmdServer* is the process ID of CmdServer.

9 Stop cluster fencing, GAB, and LLT.

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

10 If required, apply the OS kernel patches.

See "System requirements" on page 8 and Sun Microsystems' documentation for the procedures.

11 Repeat step 7 through step 9 if the system reboots after upgrading the operating system. You need to perform this to stop the components that started by the init scripts, if any.

12 Run the one of the following commands to upgrade to 5.0 MP3 RP3:

Note: You must add patch 139742-02 prior to adding patch 139741-02 or the installation will fail.

- For Storage Foundation on Solaris 8 SPARC:

```
# patchadd -M patch_dir 123722-02 139742-02 139741-02 \
140661-01 139744-01 139743-01 123200-06 122058-13 \
140657-01 121714-04 139354-01 123740-06 139737-02 \
123821-05 123823-05 141745-01 128078-02 139356-03 \
141279-01
```

- For Storage Foundation on Solaris 9 SPARC:

```
# patchadd -M patch_dir 123722-02 139742-02 139741-02 \
140661-01 139744-01 139743-01 123201-06 122058-13 \
140657-01 121714-04 139354-01 123740-06 139737-02 \
123821-05 123823-05 141745-01 128078-02 139357-03 \
141279-01
```

- For Storage Foundation on Solaris 10 SPARC:

```
# patchadd -M patch_dir 123722-02 139742-02 139741-02 \
140661-01 139744-01 139743-01 123202-06 122058-13 \
140657-01 121714-04 139354-01 123740-06 139737-02 \
123821-05 123823-05 141745-01 128078-02 139358-03 \
139359-03 142607-03 141279-01
```

- For Storage Foundation on Solaris 10 x64:

```
# patchadd -M patch_dir 139746-02 139745-02 140662-01 \
139748-01 139747-01 127337-04 127336-04 140658-01 \
127342-02 139355-01 127363-04 139738-02 127361-03 \
127362-03 128091-02 128080-02 139360-03 139361-03 \
142608-03 141280-01
```

- For Storage Foundation for Oracle RAC on Solaris 8 SPARC:

```
# patchadd -M patch_dir 123722-02 139742-02 139741-02 \
140661-01 139744-01 139743-01 123200-06 139356-03 \
122058-13 140657-01 121714-04 139354-01 123740-06 \
139737-02 123821-05 123823-05 141745-01 128078-02 \
123085-05 139753-03 123088-03 139362-03 139366-04 \
139367-03 142615-03 141284-03
```

- For Storage Foundation for Oracle RAC on Solaris 9 SPARC:

```
# patchadd -M patch_dir 123722-02 139742-02 139741-02 \
140661-01 139744-01 139743-01 123201-06 139357-03 \
122058-13 140657-01 121714-04 139354-01 123740-06 \
139737-02 123821-05 123823-05 141745-01 128078-02 \
123086-05 139754-03 123089-03 139362-03 139366-04 \
139367-03 142616-03 141284-03
```

- For Storage Foundation for Oracle RAC on Solaris 10 SPARC:

```
# patchadd -M patch_dir 123722-02 139742-02 139741-02 \
140661-01 139744-01 139743-01 123202-06 139358-03 \
139359-03 142607-03 122058-13 140657-01 121714-04 \
139354-01 123740-06 139737-02 123821-05 123823-05 \
141745-01 128078-02 123087-05 139755-03 123090-03 \
```

```
139362-03 139366-04 139367-03 142617-03 141284-03
```

- For Storage Foundation for Oracle RAC on Solaris 10 x64:

```
# patchadd -M patch_dir 139746-02 139745-02 140662-01 \
139748-01 139747-01 127337-04 139360-03 139361-03 \
142608-03 127336-04 140658-01 127342-02 139355-01 \
127363-04 139738-02 127361-03 127362-03 128091-02 \
128080-02 139756-03 127341-03 139363-03 139371-03 \
139372-03 142622-03 141288-03
```

- For Storage Foundation for DB2 on Solaris 8 SPARC:

```
# patchadd -M patch_dir 123722-02 139742-02 139741-02 \
140661-01 139744-01 139743-01 123200-06 122058-13 \
140657-01 121714-04 139354-01 123740-06 139737-02 \
123821-05 123823-05 141745-01 128078-02 139362-03 \
139356-03 139366-04 139369-03 141285-03
```

- For Storage Foundation for DB2 on Solaris 9 SPARC:

```
# patchadd -M patch_dir 123722-02 139742-02 139741-02 \
140661-01 139744-01 139743-01 123201-06 122058-13 \
140657-01 121714-04 139354-01 123740-06 139737-02 \
123821-05 123823-05 141745-01 128078-02 139362-03 \
139357-03 139366-04 139369-03 141285-03
```

- For Storage Foundation for DB2 on Solaris 10 SPARC:

```
# patchadd -M patch_dir 123722-02 139742-02 139741-02 \
140661-01 139744-01 139743-01 123202-06 122058-13 \
140657-01 121714-04 139354-01 123740-06 139737-02 \
123821-05 123823-05 141745-01 128078-02 139362-03 \
139358-03 139359-03 142607-03 139366-04 139369-03 \
141285-03
```

- For Storage Foundation for DB2 on Solaris 10 x64:

```
# patchadd -M patch_dir 139746-02 139745-02 140662-01 \
139748-01 139747-01 127337-04 127336-04 140658-01 \
127342-02 139355-01 127363-04 139738-02 127361-03 \
127362-03 128091-02 128080-02 139363-03 139360-03 \
139361-03 142608-03 139371-03 141287-03
```

where *patch_dir* is the name of the patch directory where the patch resides.

See "Patches included in this rolling patch" on page 53.

13 After all of the nodes in the cluster are upgraded, shut down and reboot each of the nodes. After the nodes come up, application failover capability is available.

14 Make the VCS configuration writable again from any node:

```
# haconf -makerw
```

15 Unfreeze the service group operations on each node:

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

16 Make the VCS configuration read-only:

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

17 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 48 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 24 or "Storage Foundation for DB2 fixed issues" on page 27 for incident 1425261.

18 If upgrading Storage Foundation for Oracle or Storage Foundation for DB2, run the `sfua_db_config -o setperm` command to set the correct permissions, owner, and group for the following directories:

- `/var/vx/vxdba`
- `/var/vx/vxdba/logs`
- `/var/vx/vxdba/locks`

Note: If you do not perform this step the DBED features will not work.

Performing a full upgrade to 5.0 MP3 RP3 on a Storage Foundation Cluster File System cluster

The following procedure describes performing a full upgrade on an SFCFS cluster.

To perform a full upgrade to 5.0 MP3 RP3 on an SFCFS cluster

1 Log in as superuser.

2 Verify that `/opt/VRTS/bin` is in your PATH so that you can execute all product commands.

3 From any node in the cluster, make the VCS configuration writable:

```
# haconf -makerw
```

4 Enter the following command to freeze HA service group operations on each node:

```
# hasys -freeze -persistent nodename
```

5 Make the configuration read-only:

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

6 On each node, enter the following command to check if any Storage Checkpoints are mounted:

```
# df | grep vxfs
```

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

```
# umount /checkpoint_name
```

7 On each node, enter the following command to check if any VxFS file systems are mounted:

```
# df -F vxfs
```

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

```
# umount /filesystem
```

8 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 `vxrvg stop` command to stop each RVG individually:

```
# vxrvg -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.

---

9 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.

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

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

Verify that no volumes remain open:

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

11 Stop VCS:

```
# hastop -all
```

12 On each node, stop the VCS command server:

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

where *pid_of_CmdServer* is the process ID of CmdServer.

13 On each node, stop ODM, cluster fencing, GAB, and LLT in the following order:

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

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

14 If required, apply the OS kernel patches.

See "System requirements" on page 8 and Sun Microsystems' documentation for the procedures.

15 On each node, check if the VEA service is running:

```
# /opt/VRTS/bin/vxsvcctrl status
```

If the VEA service is running, stop it:

```
# /opt/VRTS/bin/vxsvcctrl stop
```

16 Run one of the following commands to upgrade to 5.0 MP3 RP3.

- For Storage Foundation Cluster File System on Solaris 8 SPARC:

```
# patchadd -M patch_dir 123722-02 139742-02 139741-02 \
140661-01 139744-01 139743-01 123200-06 139356-03 \
122058-13 140657-01 121714-04 139354-01 123740-06 \
139737-02 123821-05 123823-05 141745-01 128078-02 \
123085-05 139753-03 123088-03
```

- For Storage Foundation Cluster File System on Solaris 9 SPARC:

```
# patchadd -M patch_dir 123722-02 139742-02 139741-02 \
140661-01 139744-01 139743-01 123201-06 139357-03 \
122058-13 140657-01 121714-04 139354-01 123740-06 \
139737-02 123821-05 123823-05 141745-01 128078-02 \
123086-05 139754-03 123089-03
```

- For Storage Foundation Cluster File System on Solaris 10 SPARC:

```
# patchadd -M patch_dir 123722-02 139742-02 139741-02 \
140661-01 139744-01 139743-01 123202-06 139358-03 \
139359-03 142607-03 122058-13 140657-01 121714-04 \
139354-01 123740-06 139737-02 123821-05 123823-05 \
141745-01 128078-02 123087-05 139755-03 123090-03
```

- For Storage Foundation Cluster File System on Solaris 10 x64:

```
# patchadd -M patch_dir 139746-02 139745-02 140662-01 \
139748-01 139747-01 127337-04 139360-03 139361-03 \
142608-03 127336-04 140658-01 127342-02 139355-01 \
127363-04 139738-02 127361-03 127362-03 128091-02 \
128080-02 139756-03 127341-03
```

where *patch_dir* is the name of the patch directory where the patch resides.

See "Patches included in this rolling patch" on page 53.

17 After all of the nodes in the cluster are upgraded, shut down and reboot each of the upgraded nodes. After the nodes come back up, application failover capability is available.

18 If necessary, reinstate any missing mount points in the `/etc/vfstab` file on each node.

19 Make the VCS configuration writable again from any node:

```
# haconf -makerw
```

20 Enter the following command on each node to unfreeze HA service group operations:

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

21 Make the configuration read-only:

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

22 Bring the CVM service group online on each node:

```
# hagrp -online cvm -sys nodename
```

23 Restart all the volumes by entering the following command for each disk group:

```
# vxvol -g diskgroup startall
```

24 If you stopped any RVGs in step 10, restart each RVG:

```
# vxrvg -g diskgroup start rvg_name
```

25 Remount all VxFS file systems on all nodes:

```
# mount /filesystem
```

26 Remount all Storage Checkpoints on all nodes:

```
# mount /checkpoint_name
```

Performing a full upgrade to 5.0 MP3 RP3 on a Storage Foundation for Oracle RAC cluster

The following procedure describes performing a full upgrade on an SF for Oracle RAC cluster.

To upgrading to 5.0 MP3 RP3 on a SFRAC cluster

1 Log in as superuser.

2 Verify that `/opt/VRTS/bin` is in your PATH so that you can execute all product commands.

3 From any node in the cluster, make the VCS configuration writable:

```
# haconf -makerw
```

4 Enter the following command to freeze HA service group operations on each node:

```
# hasys -freeze -persistent nodename
```

5 Make the configuration read-only:

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

6 If CRS is not controlled by VCS, enter the following command on each node of the cluster to stop CRS:

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

7 Stop VCS.

```
# hastop -all
```

8 Stop the VCS command server:

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

where *pid_of_CmdServer* is the process ID of CmdServer.

9 Stop VCSMM and LMX if they are running:

```
# /etc/init.d/vcsmm stop
# /etc/init.d/lmx stop
```

10 Stop cluster fencing, ODM, and GAB:

```
# /etc/init.d/vxfen stop
# /etc/init.d/odm stop
# /etc/init.d/gab stop
```

11 On each node, unload the vxfen, LMX, GAB, VCSMM, GMS, and GLM kernel modules if they are still loaded:

a Verify if the vxfen kernel module is loaded. For example:

```
# modinfo|grep vxfen
210 7ba44000 39488 258 1 vxfen (VRTS Fence 5.0MP3)
```

If the vxfen kernel module is loaded then unload it. For example:

```
# modunload -i 210
```

b Verify if the LMX kernel module is loaded. For example:

```
# modinfo | grep lmx
239 fffffffff1253000  13a30 236   1  lmx (LLT Mux
'5.0MP3')
```

If the LMX kernel module is loaded then unload it. For example:

```
# modunload -i 239
```

c Verify if the VCSMM kernel module is loaded. For example:

```
# modinfo | grep vcsmm
312 78bc0000  43ae8 293   1  vcsmm (VRTSvcsmm 5.0MP3)
```

If the VCSMM kernel module is loaded then unload it. For example:

```
# modunload -i 312
```

d Verify if the GMS kernel module is loaded. For example:

```
# modinfo | grep gms
311 78289c91   4867 292   1  vxgms (VxGMS
5.0MP3 (SunOS))
```

If the GMS kernel module is loaded then unload it. For example:

```
# modunload -i 311
```

e Verify if the GLM kernel module is loaded. For example:

```
# modinfo | grep glm
310 78b68000  24268 291   1  vxglm (VxGLM 5.0MP3
(SunOS 5.10))
```

If the GLM kernel module is loaded then unload it. For example:

```
# modunload -i 310
```

f Verify if the GAB kernel module is loaded. For example:

```
# modinfo | grep gab
149 50cc6000 2b451 112 1 gab (GAB device 5.0MP3)
```

If the GAB kernel module is loaded then unload it. For example:

```
# modunload -i 149
```

12 Stop LLT:

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

a Verify if the LLT kernel module is loaded. For example:

```
# modinfo|grep llt
147 50ca4000 d6bc 110 1 llt (LLT 5.0MP3)
```

If the LLT kernel module is loaded then unload it. For example:

```
# modunload -i 147
```

13 If required, apply the OS kernel patches.

See "System requirements" on page 8 and Sun Microsystems' documentation for the procedures.

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

---

14 On each node of the cluster, enter the following command to check if any VxFS file systems are mounted:

```
# df -F vxfs
```

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

```
# umount /filesystem
```

b On each node of the cluster, verify that all file systems have been cleanly unmounted:

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

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 -F vxfs filesystem
# mount -F vxfs filesystem 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 -F 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 of the cluster, stop all VxVM volumes by entering the following command for each disk group:

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

Verify that no volumes remain open:

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

17 Check if the VEA service is running:

```
# /opt/VRTS/bin/vxsvcctrl status
```

If the VEA service is running, stop it:

```
# /opt/VRTS/bin/vxsvcctrl stop
```

18 On each node of the cluster, run one of the following commands to upgrade to 5.0 MP3 RP3.

Note: You must add patch 139742-02 prior to adding patch 139741-02 or the installation will fail.

- For Storage Foundation for Oracle RAC on Solaris 8 SPARC:

```
# patchadd -M patch_dir 123722-02 139742-02 139741-02 \
140661-01 139744-01 139743-01 123200-06 139356-03 \
122058-13 140657-01 121714-04 139354-01 123740-06 \
139737-02 123821-05 123823-05 141745-01 128078-02 \
123085-05 139753-03 123088-03 139362-03 139366-04 \
139367-03 142615-03 141284-03
```

- For Storage Foundation for Oracle RAC on Solaris 9 SPARC:

```
# patchadd -M patch_dir 123722-02 139742-02 139741-02 \
```

```
140661-01 139744-01 139743-01 123201-06 139357-03 \
122058-13 140657-01 121714-04 139354-01 123740-06 \
139737-02 123821-05 123823-05 141745-01 128078-02 \
123086-05 139754-03 123089-03 139362-03 139366-04 \
139367-03 142616-03 141284-03
```

- For Storage Foundation for Oracle RAC on Solaris 10 SPARC:

```
# patchadd -M patch_dir 123722-02 139742-02 139741-02 \
140661-01 139744-01 139743-01 123202-06 139358-03 \
139359-03 142607-03 122058-13 140657-01 121714-04 \
139354-01 123740-06 139737-02 123821-05 123823-05 \
141745-01 128078-02 123087-05 139755-03 123090-03 \
139362-03 139366-04 139367-03 142617-03 141284-03
```

- For Storage Foundation for Oracle RAC on Solaris 10 x64:

```
# patchadd -M patch_dir 139746-02 139745-02 140662-01 \
139748-01 139747-01 127337-04 139360-03 139361-03 \
142608-03 127336-04 140658-01 127342-02 139355-01 \
127363-04 139738-02 127361-03 127362-03 128091-02 \
128080-02 139756-03 127341-03 139363-03 139371-03 \
139372-03 142622-03 141288-03
```

where *patch_dir* is the name of the patch directory where the patch resides.

See "Storage Foundation for Oracle RAC patches" on page 69.

19 After the entire cluster is upgraded, reboot all of the nodes of the cluster.

```
# /usr/sbin/shutdown -g0 -y -i6
```

20 If necessary, reinstate any missing mount points in the `/etc/vfstab` file on each node.

21 Run the following commands to start the Storage Foundation for Oracle RAC processes:

```
# /etc/init.d/llt start
# /etc/init.d/gab start
# /etc/init.d/odm start
# /etc/init.d/vxfen start
# /etc/init.d/vcsmm start
# /etc/init.d/lmx start
# /opt/VRTSvcs/bin/hastart
```

22 From any node in the cluster, make the VCS configuration writable:

```
# haconf -makerw
```

23 Enter the following command on each node to unfreeze HA service group operations:

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

24 Make the configuration read-only:

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

25 Enter the following command on each node to take service groups online:

```
# hagrp -online service_group -sys nodename
```

26 Restart all the volumes by entering the following command for each disk group:

```
# vxvol -g diskgroup startall
```

27 If CRS is not controlled by VCS, enter the following command on each node to start CRS.

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

28 Remount all VxFS file systems on all nodes:

```
# mount /filesystem
```

29 Check if the VEA service was restarted:

```
# /opt/VRTS/bin/vxsvcctrl status
```

If the VEA service is not running, restart it:

```
# /opt/VRTS/bin/vxsvcctrl start
```

30 Relink Oracle's CRS and database libraries for Storage Foundation for Oracle RAC:

a Run the following command:

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

b Choose the correct relinking option for your version of Oracle:

- Relink Storage Foundation for Oracle RAC for Oracle 9i
- Relink Storage Foundation for Oracle RAC for Oracle 10g Release 1
- Relink Storage Foundation for Oracle RAC for Oracle 10g Release 2
- Relink Storage Foundation for Oracle RAC for Oracle 11g

31 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 48 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 24 or "Storage Foundation for DB2 fixed issues" on page 27 for incident 1425261.

32 If upgrading Storage Foundation for Oracle RAC, Storage Foundation for Oracle or Storage Foundation for DB2, run the `sfua_db_config -o setperm` command to set the correct permissions, owner, and group for the following directories:

- `/var/vx/vxdba`
- `/var/vx/vxdba/logs`
- `/var/vx/vxdba/locks`

Note: If you do not perform this step the DBED features will not work.

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. If required, apply the OS kernel patches.
   See "System requirements" on page 8 and Sun Microsystems' documentation for the procedures.
4. Enter the following command to check if any VxFS file systems or Storage Checkpoints are mounted:
   ```
   # df | grep vxfs
   ```
5. Unmount all Storage Checkpoints and file systems:
   ```
   # umount /checkpoint_name
   # umount /filesystem
   ```
6. 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 `vxrvg stop` command to stop each RVG individually:
      ```
      # vxrvg -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.

7. 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.
8. Stop all VxVM volumes by entering the following command for each disk group:

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

Verify that no volumes remain open:

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

9 Check if the VEA service is running:

```
# /opt/VRTS/bin/vxsvcctrl status
```

If the VEA service is running, stop it:

```
# /opt/VRTS/bin/vxsvcctrl stop
```

10 Use one of the following commands to upgrade to 5.0 MP3 RP3.

Note: You must add patch 139742-02 prior to adding patch 139741-02 or the installation will fail.

- For Storage Foundation on Solaris 8 SPARC:

```
# patchadd -M patch_dir 123722-02 139742-02 139741-02 \
140661-01 139744-01 139743-01 123200-06 122058-13 \
140657-01 121714-04 139354-01 123740-06 139737-02 \
123821-05 123823-05 141745-01 128078-02 139356-03 \
141279-01
```

- For Storage Foundation on Solaris 9 SPARC:

```
# patchadd -M patch_dir 123722-02 139742-02 139741-02 \
140661-01 139744-01 139743-01 123201-06 122058-13 \
140657-01 121714-04 139354-01 123740-06 139737-02 \
123821-05 123823-05 141745-01 128078-02 139357-03 \
141279-01
```

- For Storage Foundation on Solaris 10 SPARC:

```
# patchadd -M patch_dir 123722-02 139742-02 139741-02 \
140661-01 139744-01 139743-01 123202-06 122058-13 \
140657-01 121714-04 139354-01 123740-06 139737-02 \
123821-05 123823-05 141745-01 128078-02 139358-03 \
139359-03 142607-03 141279-01
```

- For Storage Foundation on Solaris 10 x64:

```
# patchadd -M patch_dir 139746-02 139745-02 140662-01 \
139748-01 139747-01 127337-04 127336-04 140658-01 \
127342-02 139355-01 127363-04 139738-02 127361-03 \
127362-03 128091-02 128080-02 139360-03 139361-03 \
142608-03 141280-01
```

- For Storage Foundation for Oracle RAC on Solaris 8 SPARC:

```
# patchadd -M patch_dir 123722-02 139742-02 139741-02 \
140661-01 139744-01 139743-01 123200-06 139356-03 \
122058-13 140657-01 121714-04 139354-01 123740-06 \
139737-02 123821-05 123823-05 141745-01 128078-02 \
123085-05 139753-03 123088-03 139362-03 139366-04 \
139367-03 142615-03 141284-03
```

- For Storage Foundation for Oracle RAC on Solaris 9 SPARC:

```
# patchadd -M patch_dir 123722-02 139742-02 139741-02 \
140661-01 139744-01 139743-01 123201-06 139357-03 \
```

```
122058-13 140657-01 121714-04 139354-01 123740-06 \
139737-02 123821-05 123823-05 141745-01 128078-02 \
123086-05 139754-03 123089-03 139362-03 139366-04 \
139367-03 142616-03 141284-03
```

- For Storage Foundation for Oracle RAC on Solaris 10 SPARC:

```
# patchadd -M patch_dir 123722-02 139742-02 139741-02 \
140661-01 139744-01 139743-01 123202-06 139358-03 \
139359-03 142607-03 122058-13 140657-01 121714-04 \
139354-01 123740-06 139737-02 123821-05 123823-05 \
141745-01 128078-02 123087-05 139755-03 123090-03 \
139362-03 139366-04 139367-03 142617-03 141284-03
```

- For Storage Foundation for Oracle RAC on Solaris 10 x64:

```
# patchadd -M patch_dir 139746-02 139745-02 140662-01 \
139748-01 139747-01 127337-04 139360-03 139361-03 \
142608-03 127336-04 140658-01 127342-02 139355-01 \
127363-04 139738-02 127361-03 127362-03 128091-02 \
128080-02 139756-03 127341-03 139363-03 139371-03 \
139372-03 142622-03 141288-03
```

- For Storage Foundation for DB2 on Solaris 8 SPARC:

```
# patchadd -M patch_dir 123722-02 139742-02 139741-02 \
140661-01 139744-01 139743-01 123200-06 122058-13 \
140657-01 121714-04 139354-01 123740-06 139737-02 \
123821-05 123823-05 141745-01 128078-02 139362-03 \
139356-03 139366-04 139369-03 141285-03
```

- For Storage Foundation for DB2 on Solaris 9 SPARC:

```
# patchadd -M patch_dir 123722-02 139742-02 139741-02 \
140661-01 139744-01 139743-01 123201-06 122058-13 \
140657-01 121714-04 139354-01 123740-06 139737-02 \
123821-05 123823-05 141745-01 128078-02 139362-03 \
139357-03 139366-04 139369-03 141285-03
```

- For Storage Foundation for DB2 on Solaris 10 SPARC:

```
# patchadd -M patch_dir 123722-02 139742-02 139741-02 \
140661-01 139744-01 139743-01 123202-06 122058-13 \
140657-01 121714-04 139354-01 123740-06 139737-02 \
123821-05 123823-05 141745-01 128078-02 139362-03 \
139358-03 139359-03 142607-03 139366-04 139369-03 \
141285-03
```

- For Storage Foundation for DB2 on Solaris 10 x64:

```
# patchadd -M patch_dir 139746-02 139745-02 140662-01 \
139748-01 139747-01 127337-04 127336-04 140658-01 \
127342-02 139355-01 127363-04 139738-02 127361-03 \
127362-03 128091-02 128080-02 139363-03 139360-03 \
139361-03 142608-03 139371-03 141287-03
```

where *patch_dir* is the name of the patch directory where the patch resides.

See "Patches included in this rolling patch" on page 53.

11 Shut down and restart the system.

12 If necessary, reinstate any missing mount points in the `/etc/vfstab` file.

13 Restart all the volumes by entering the following command for each disk group:

```
# vxvol -g diskgroup startall
```

14 If you stopped any RVGs in step 6, restart each RVG:

```
# vxrvg -g diskgroup start rvg_name
```

15 Remount all VxFS file systems and Storage Checkpoints:

```
# mount /filesystem
# mount /checkpoint_name
```

16 Check if the VEA service was restarted:

```
# /opt/VRTS/bin/vxsvcctrl status
```

If the VEA service is not running, restart it:

```
# /opt/VRTS/bin/vxsvcctrl start
```

17 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 48 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 24 or "Storage Foundation for DB2 fixed issues" on page 27 for incident 1425261.

18 If upgrading Storage Foundation for Oracle or Storage Foundation for DB2, run the `sfua_db_config -o setperm` command to set the correct permissions, owner, and group for the following directories:

- `/var/vx/vxdba`
- `/var/vx/vxdba/logs`
- `/var/vx/vxdba/locks`

Note: If you do not perform this step the DBED features will not work.

Verifying software versions

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

```
# pkginfo -l VRTSvlic
```

Removing 5.0 MP3 RP3

Roll back of the 5.0 MP3 RP3 to the release 5.0 MP3 version is not supported for certain products. 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.

You can roll back 5.0 MP3 RP3 to the release 5.0 MP3 version for Veritas Cluster Server.

Removing 5.0 MP3 RP3 from Veritas Cluster Server

Use the following procedure to remove VCS 5.0 MP3 RP3 from your cluster manually.

To remove 5.0 MP3 RP3 from VCS manually

1. List the service groups in your cluster and their status. On any node, type:
   ```
   # hagrp -state
   ```
2. Take the ClusterService service group offline if it is running. On any node, type:
   ```
   # hagrp -offline -force ClusterService -sys system
   ```
3. Make the VCS configuration writable. On any node, type:
   ```
   # haconf -makerw
   ```
4. Freeze all service groups. On any node, type:
   ```
   # hagrp -freeze service_group -persistent
   ```
   where service_group is the name of the service group. Note that the ClusterService group cannot be frozen.
5. Save the configuration (main.cf) file with the groups frozen. On any node, type:
   ```
   # haconf -dump -makero
   ```
6. Make a backup copy of the current main.cf and all types.cf configuration files. For example, on one node in the cluster, type:
   ```
   # cp /etc/VRTSvcs/conf/config/main.cf \
   /etc/VRTSvcs/conf/main.cf.save
   # cp /etc/VRTSvcs/conf/config/types.cf \
   /etc/VRTSvcs/conf/types.cf.save
   ```
7. Shut down VCS. On any node, type:

```
# /opt/VRTSvcs/bin/hastop -all -force
```

8 Shut down CmdServer. On each node, type:

```
# /opt/VRTSvcs/bin/CmdServer -stop
```

9 Verify that VCS has shut down. On any node, type:

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

The output resembles:

```
GAB Port Memberships
Port a gen 23dc0001 membership 01
```

The output shows no membership for port h.

10 For Solaris 10, on nodes that run non-global zones, check if the non-global zones are in the running state. Boot the non-global zones that are not in the running state.

- Check the zone's state. On each node, type:

  ```
  # zoneadm list -icv
  ```

- Boot the zone if it is not in the running state. On each node, type:

  ```
  # zoneadm -z zone boot
  ```

  where zone is the name of the non-global zone.

Note: Do not configure one or more Solaris zones to boot from the shared storage.

---

11 Unconfigure vxfen if the VCS cluster uses the fencing option. On each node, type:

```
# /sbin/vxfenconfig -U
```

12 Unload vxfen. On each node, perform the following steps:

- Identify the vxfen kernel module, for example:

  ```
  # modinfo|grep vxfen
  210 7ba44000 39488 258 1 vxfen (VRTS Fence 5.0MP3RP3)
  ```

- Unload vxfen using the module number.

  ```
  # modunload -i 210
  ```

13 Unconfigure GAB. On each node, type:

```
# /sbin/gabconfig -U
```

14 Unload GAB. On each node, perform the following steps:

- Identify the GAB kernel module. For example:

  ```
  # modinfo | grep gab
  149 50cc6000 2b451 112 1 gab (GAB device 5.0MP3RP3)
  ```

- Unload GAB using the module number:

  ```
  # modunload -i 149
  ```

15 Unconfigure LLT. On each node, perform the following steps:

- Type:

```
# /sbin/lltconfig -U
```

- Type **y** on each node in response to the message.

16 Unload LLT. On each node, perform the following steps:

- Identify the LLT kernel module. For example:

```
# modinfo | grep llt
147 50ca4000 d6bc 110 1 llt (LLT 5.0MP3RP3)
```

- Unload LLT using the module number:

```
# modunload -i 147
```

17 Remove the VCS 5.0 MP3 RP3 patches. On each node, type:

- For Solaris SPARC 8:

```
# patchrm 139356-03
```

- For Solaris SPARC 9:

```
# patchrm 139357-03
```

- For Solaris SPARC 10:

```
# patchrm 142607-03
# patchrm 139359-03
# patchrm 139358-03
```

- For Solaris x64:

```
# patchrm 139361-03
# patchrm 139360-03
# patchrm 142608-03
```

Note: For Solaris SPARC 8, 9, 10, if you must remove the 5.0 MP3 RP3 Authentication Service patch (123722-02), you must uninstall the entire VCS product stack, then reinstall VCS.

---

18 Verify that the patches have been removed. On each node, type:

```
# showrev -p | grep VRTS
```

19 If the LLT, GAB, or VXFEN modules cannot be stopped or unloaded following the patch removal, reboot all nodes in the cluster.

20 If you do not perform step 19, start the VCS components manually. On each node, type:

```
# /sbin/lltconfig -c
# /sbin/gabconfig -cx
# /sbin/vxfenconfig -c
# /opt/VRTSvcs/bin/hastart
```

You do not have to start vxfen unless you use the fencing option.

21 After VCS has started, perform the following steps:

- Verify all resources have been probed. On any node, type:

```
# hastatus -summary
```

- Unfreeze all service groups. On any node, type:

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

where *service_group* is the name of the service group.

22 Bring online the ClusterService service group, if necessary. On any node type:

```
# hagrp -online ClusterService -sys system
```

where *system* is the node name.

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 Storage Checkpoints and file systems:

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

4 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.

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

```
# df | grep vxfs
```

6 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 `vxrvg stop` command to stop each RVG individually:

```
# vxrvg -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.

---

7 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.

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

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

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

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

9 Stop VCS along with all the resources. Then, stop the remaining resources manually:

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

10 If cluster fencing was originally configured in enabled mode, type the following on all the nodes:

```
# rm /etc/vxfenmode
```

11 Unmount `/dev/odm`:

```
# umount /dev/odm
```

12 Unload the ODM module:

```
# modinfo | grep odm
# modunload -i 154
```

13 Unload the cluster fencing (vxfen) module:

```
# /etc/init.d/vxfen stop
# modinfo | grep vxfen
# modunload -i 216
```

14 Stop GAB and LLT in the following order:

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

15 Check if the VEA service is running:

```
# /opt/VRTS/bin/vxsvcctrl status
```

If the VEA service is running, stop it:

```
# /opt/VRTS/bin/vxsvcctrl stop
```

16 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 or Veritas Storage Foundation Cluster File System, enter 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. The `-rsh` option is required if you are using the remote shell (RSH) rather than the secure shell (SSH) to uninstall the software simultaneously on several systems.

Note: Provided that the remote shell (RSH) or secure shell (SSH) has been configured correctly, this command can be run on a single node of the cluster to install the software on all the nodes of the sub-cluster.

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 Storage Foundation for Oracle RAC

You can use the following procedure to uninstall the 5.0 MP3 RP3 on Storage Foundation for Oracle RAC systems.

To uninstall the 5.0 MP3 RP3 on SF Oracle RAC

1 Stop Oracle and CRS on each node of the sub-cluster.

- If CRS is controlled by VCS, log in as superuser on each system in the sub-cluster and enter the following command:

```
# hastop -all
```

- If CRS is not controlled by VCS, enter the following command on each node of the sub-cluster to stop CRS:

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

Unmount all VxFS file system used by a database or application and enter the following command to each node of the sub-cluster:

```
# hastop -local
```

2 Stop cluster fencing, VCSMM, LMX, ODM, and GAB:

```
# /etc/init.d/vxfen stop
# /etc/init.d/vcsmm stop
# /etc/init.d/lmx stop
# /etc/init.d/odm stop
# /etc/init.d/gab stop
```

3 On each node, unload the vxfen, LMX, GAB, VCSMM, GMS, and GLM kernel modules if they are still loaded.

a Verify if the vxfen kernel module is loaded. For example:

```
# modinfo|grep vxfen
210 7ba44000 39488 258 1 vxfen (VRTS Fence 5.0MP3RP3)
```

If the vxfen kernel module is loaded then unload it. For example:

```
# modunload -i 210
```

b Verify if the LMX kernel module is loaded. For example:

```
# modinfo | grep lmx
239 ffffffff1253000  13a30 236   1  lmx (LLT Mux
'5.0MP3RP3')
```

If the LMX kernel module is loaded then unload it. For example:

```
# modunload -i 239
```

c Verify if the VCSMM kernel module is loaded. For example:

```
# modinfo | grep vcsmm
312 78bc0000  43ae8 293   1  vcsmm (VRTSvcsmm 5.0MP3Rp3)
```

If the VCSMM kernel module is loaded then unload it. For example:

```
# modunload -i 312
```

d Verify if the GMS kernel module is loaded. For example:

```
# modinfo | grep gms
```

```
311 78289c91   4867 292   1  vxgms (VxGMS
5.0MP3 (SunOS))
```

If the GMS kernel module is loaded then unload it. For example:

```
# modunload -i 311
```

e Verify if the GLM kernel module is loaded. For example:

```
# modinfo | grep glm
310 78b68000  24268 291   1  vxglm (VxGLM 5.0MP3
(SunOS 5.10))
```

If the GLM kernel module is loaded then unload it. For example:

```
# modunload -i 310
```

f Verify if the GAB kernel module is loaded. For example:

```
# modinfo | grep gab
149 50cc6000 2b451 112 1 gab (GAB device 5.0MP3RP3)
```

If the GAB kernel module is loaded then unload it. For example:

```
# modunload -i 149
```

4 Stop LLT:

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

a Verify if the LLT kernel module is loaded. For example:

```
# modinfo|grep llt
147 50ca4000 d6bc 110 1 llt (LLT 5.0MP3RP3)
```

If the LLT kernel module is loaded then unload it. For example:

```
# modunload -i 147
```

5 Uninstall Storage Foundation for Oracle RAC.

```
# cd /opt/VRTS/install
# ./uninstallsfrac MyNode1 MyNode2
```

See the *Veritas Storage Foundation for Oracle RAC 5.0 MP3 Installation and Configuration Guide* for more information.

After uninstalling the packages, refer to the Storage Foundation for Oracle RAC 5.0 MP3 Installation and Configuration Guide to reinstall the 5.0 MP3 software.

6 After removing the patches, reboot the nodes:

```
# /usr/sbin/shutdown -g0 -y -i6
```

Documentation addendum

The following is an addition to the *Veritas Cluster Server Bundled Agents Reference Guide*.

Disk agent

Monitors a physical disk or a partition.

You can use the Disk agent to monitor a physical disk or a slice that is exported to LDoms (available using LDoms 1.2 or later).

For LDoms with a physical disk or slice based boot image, a dependency must exist between the guest domain and primary domain. You configure the primary domain as the master of the guest domain. Perform the following:

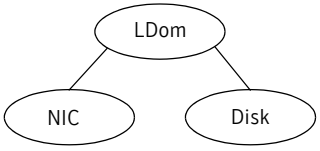
- Set the failure-policy of primary (control) domain to stop. For example, in the primary domain enter the following command to set the dependent domain to stop when the primary domain faults:

  # **ldm set-domain failure-policy=stop primary**

- Set the primary domain as the master for the guest domain

  # **ldm set-domain master=primary *guestldom***

Figure 1-1 Sample service group that includes a Disk resource on Solaris



Agent functions

Monitor — Performs read I/O operations on the raw device to determine if a physical disk or a partition is accessible.

State definitions

ONLINE	Indicates that the disk is working normally.
FAULTED	Indicates that the disk has stopped working or is inaccessible.
UNKNOWN	Indicates that a problem exists either with the configuration or the ability to determine the status of the resource.

Attributes

Table 1-44 Required attributes

Required attribute	Description
Partition	Indicates which partition to monitor. Specify the partition with the full path beginning with a slash (/). For Solaris, if this path is not specified, the name is assumed to reside in /dev/rdsk/. Example: "/dev/rdsk/c2t0d0s2" Type and dimension: string-scalar

Resource type definition

```
type Disk (
    static int OfflineMonitorInterval = 60
    static str ArgList[] = { Partition }
    static str Operations = None
    str Partition
)
```

Documentation errata

The following sections describe documentation errata.

Manual pages errata

One manual page has been updated in this Rolling Patch to include corrections for errors or omissions.

vxdisk(1M) (1528116)

The `rm` keyword description should be as follows:

```
rm  Removes the specified disk access records, by disk access name.
```

Use this keyword to remove a disk physically from the system, or to clean up a disk when you physically remove the disk from the system. See to the *Veritas Volume Manager Administrator's Guide* for more information.

This keyword does not exlude the disk from VxVM usage. To exclude the disk from VxVM usage, use the vxdmpadm command.

The `scandisks` keyword description should be as follows:

`scandisks`

Initiates the rescanning of devices in the operating system device tree by VxVM. If necessary, DMP reconfiguration is triggered. This allows VxVM to configure and multipath disks dynamically.

By default, VxVM performs ASL configuration for all of the devices when performing device discovery. To restrict ASL configuration for newly added disks that are not already known to VxVM, specify the -f option.

The following options can be specified to restrict the ASL configuration to specific devices:

`scandisks [!]ctlr=`*`controller_list`*

Selects devices that are connected to the logical controllers specified as a comma-separated list. If you prepend a ! to ctlr, all devices are selected except those that are connected to the specified controllers.

`scandisks [!]device=`*`device_list`*

Selects the devices that are specified as a comma-separated list. If you prepend a ! to device, all devices except those listed are discovered.

`scandisks fabric`

Selects fabric devices only, such as devices that have the DDI_NT_BLOCK_FABRIC property set.

`scandisks new`

Selects new disks (that is, disks not known to VxVM).

`scandisks [!]pctlr=`*`physical_controller_list`*

Selects devices that are connected to the physical controllers specified as a list of items separated by + characters. If you prepend a ! to pctlr, all devices are selected except those that are connected to the specified physical controllers.

Veritas Cluster Server database installation and configuration guides errata

You can find an updated version of the following guides on the Symantec support website http://www.symantec.com/enterprise/support/assistance_care.jsp:

- Veritas Cluster Server Agent for DB2 Installation and Configuration Guide
- Veritas Cluster Server Agent for Oracle Installation and Configuration Guide
- Veritas Cluster Server Agent for Sybase Installation and Configuration Guide

For these Installation and Configuring Guides 5.0, the following procedures have updated instructions:

- To install the agent
- To remove the agent