Solaris™ 9 4/04 Release Notes Supplement for Sun™ Hardware

Solaris 9 4/04

Includes Additional Release Notes and End-of-Support Statements for the Solaris 9 Operating Environment Running on Sun Hardware Products

Sun Microsystems, Inc.
www.sun.com

Part No. 817-4190-10
April 2004, Revision A

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CHAPTER 1

Late-Breaking News

This chapter provides the following information:

Name Change for the Supplement CD

The CD that was previously referred to as the *Software Supplement for the Solaris 8 Operating Environment* is now called the *Solaris 9 4/04 Software Supplement*. Past and present documentation might refer to this as the "Supplement CD."

Patch Enables Booting the Solaris 9 4/04 Operating Environment from DVD-ROM Media

If your system has a Toshiba SD-M1401 DVD-ROM drive with firmware revision 1007, the system cannot boot from the Solaris 8 HW 2/04 DVD.

Workaround: Apply patch 111649-03, or a later version, to update the Toshiba SD-M1401 DVD-ROM drive's firmware. You can download patch 111649-03 or a later version by going to the SunSolve℠ website at:

`http://sunsolve.sun.com`

Documents on the Software Supplement CD

The documents supplied on the Supplement CD differ in format from past releases. The AnswerBook2™ format documentation collections are no longer supplied with the Solaris 9 4/04 release. Instead, the manuals are provided in installable packages of PDF and HTML files. After installing these packages on your system, you can access documents directly using a browser or PDF file reader, such as the Netscape Navigator™ or Adobe® Acrobat Reader program. For further information, refer to the documentation chapter in the *Solaris 9 4/04 Sun Hardware Platform Guide*.

Unbundled Product Support

Although the Solaris 9 4/04 software is tested to be compatible with previous releases, some applications might not be fully ABI-compliant. Contact the supplier of the unbundled product directly for information about compatibility.

If you are upgrading from an existing version of Solaris software and have installed unbundled products, either from Sun or from a different company, you must ensure that all those products are supported on the Solaris 9 4/04 operating environment prior to upgrading. Depending on the status of each unbundled product, you have three options for each unbundled product:

- Verify that the existing version of the unbundled product is supported on the Solaris 9 4/04 operating environment.
- Acquire and install a new version of the unbundled product that is supported on the Solaris 9 4/04 operating environment. Note that in this case you might need to remove the previous version of the unbundled product prior to upgrading to the Solaris 9 4/04 operating environment. See the unbundled product documentation for more details.
- Remove the unbundled product prior to upgrading to the Solaris 9 4/04 operating environment.

For additional information contact the supplier of the unbundled product or your service provider or go to:

`http://sunsolve.sun.com/pubpatch`

Flash PROM Update for 64-Bit Operations

Some sun4u systems need to be updated to a higher level of OpenBoot™ firmware in the flash PROM before they can run the 64-bit mode of the Solaris 9 4/04 operating environment. Systems that can only run the 32-bit mode, such as those in the sun4m platform groups, do not require updated firmware to run Solaris 9 4/04 software.

The only systems that might require this flash PROM update are the following:

- Sun Ultra™ 1
- Ultra 2
- Ultra 450 and Sun Enterprise 450
- Sun Enterprise 3000, 4000, 5000, and 6000 systems

See any edition of the *Solaris 8 Sun Hardware Platform Guide* at `http://www.sun.com/documentation` for instructions for determining whether your system needs a flash PROM update and for instructions on performing that update.

For the Ultra and Ultra 2 systems, an antistatic wrist strap might be required for the update. If you need a wrist strap, send e-mail to `strap@sun.com`.

DVD-ROM/CD-ROM Drives on Headless Systems (Bug ID 4365497)

Power management of interactive devices such as removable media is linked with power management of your monitor and the graphics card that drives your monitor. If your screen is active, devices such as the CD-ROM drive and diskette are kept at full-power mode. This means that if you are running a system without a monitor, these devices might go into low-power mode. If this happens and you want to restore power to the CD or diskette, type **`volcheck`** to obtain the latest status from each removable device.

Alternatively, you can disable power management on your system by using the Dtpower GUI. Then the devices are not put into low-power mode even when on a headless system, but run at full power all the time. This is not a bug; this is the intended behavior.

CHAPTER 2

End-of-Support Products

This chapter announces products that are not supported in this release, and those that might not be supported in future releases.

Products not Supported in the Solaris 9 4/04 Operating Environment

Support for the following products has been discontinued. For more information, contact your support provider.

sun4d Servers

The following sun4d architecture servers are no longer included in this release:

- SPARCserver™ 1000 systems
- SPARCcenter™ 2000 systems

Hardware options that are dependent on the sun4d architecture are no longer included in this release.

Ethernet Quad Drivers `qe` and `qec`

Ethernet Quad drivers `qe` and `qec` are no longer included in this release.

Alternate Pathing Multipath I/O

Alternate Pathing (AP) multipath I/O technology is no longer included in this release. It has been replaced by the newer, more scalable technologies of MPxIO and IPMP.

These modern technologies present better overall multipath solutions with refined, user-friendly interfaces that are well integrated with Solaris. IPMP also provides true automatic switching for networks upon error detection.

If you used AP in previous releases of Solaris for I/O multipath capabilities, you are encouraged to use these newer technologies for I/O multipath control.

Token Ring Network Drivers

SBus Token Ring and PCI bus Token Ring network drivers are no longer supported in this release.

PC File Viewer

PC file viewer is no longer supported in this release.

Similar functionality in viewing PC files is now available using the Sun StarOffice™ 6.0 Office Productivity Suite. StarOffice can read and write more than 100 different file formats used by major desktop applications, including Microsoft Office, Lotus, WordPerfect, WordStar, FrameMaker, AutoCAD, Photoshop, and more.

For more information, go to:

`http://www.sun.com/staroffice`

PC Launcher

PC Launcher is no longer supported in this release.

SunFDDI and SunHSI/S Drivers

The FDDI/S, FDDI/P, and SunHSI/S™ drivers are no longer supported in this release.

ShowMe TV

ShowMe TV™ is no longer supported in this release.

Solaris Maintenance Updates

The Solaris Maintenance Updates (MUs), a separate patch collection provided in conjunction with the Solaris Update Releases, are not available for this release, neither as a CD image nor as a download.

The preferred mechanism for updating a Solaris release—for example, to update from the Solaris 9 8/03 operating environment to the Solaris 9 12/03 operating environment—is to use the "upgrade" mechanism (see the *Solaris 9 Installation Guide*).

Future End-of-Support Products

Support for the following products might be discontinued in future releases. For more information, contact your service provider.

`le` Drivers

`le` network drivers might no longer be supported in a future release.

SPC Driver

The SPC SBus interface card driver might no longer be supported in a future release. The SPC card is a serial parallel controller (SBus, 8-port serial, 1 parallel).

Sun4m Platform Group

The sun4m platform group might no longer be supported in a future release. This would affect the following platforms:

- SPARCclassic
- SPARCstation™ LX / LX+

- SPARCstation 4
- SPARCstation 5
- SPARCstation 10
- SPARCstation 20

Tape Devices

The following tape devices might not be supported in a future release of the Solaris operating environment:

- Sun StorEdge™ DLT4700 tape autoloader
- Sun StorEdge L140 tape library
- Sun StorEdge L280 tape autoloader
- Sun StorEdge L400 tape library
- Sun StorEdge L1800 tape library
- Sun StorEdge L3500 tape library
- Sun StorEdge L11000 tape library

Storage Interfaces

The following interfaces for device driver properties might not be supported in a future release of the Solaris operating environment:

- `fast-writes` (pln driver property)
- `priority-reserve` (pln driver property)

The following device drivers might not be supported in a future release of the Solaris operating environment:

- `/kernel/drv/pln`
- `/kernel/drv/pln.conf`
- `/kernel/drv/sparcv9/pln`
- `/kernel/drv/soc`
- `/kernel/drv/sparcv9/soc`

The `/usr/sbin/ssaadm` utility might not be supported in a future release of the Solaris operating environment.

Sun StorEdge Systems

Software support for the following storage devices might not be provided in a future release of the Solaris operating environment:

- Sun StorEdge A3000 system

- Sun StorEdge A3500 system
- Sun StorEdge A3500FC system
- Sun StorEdge A1000 array

CHAPTER 3

Open Issues

This chapter discusses:

Application-Specific Issues

SunScreen SKIP 1.1.1 Not Supported in Solaris 9 4/04 Operating Environment

If you have SunScreen™ SKIP 1.1.1 software currently installed on your system, you should remove the SKIP packages before installing or upgrading to the Solaris 9 4/04 operating environment. Remove these packages: `SICGbdcdr`, `SICGc3des`, `SICGcdes`, `SICGcrc2`, `SICGcrc4`, `SICGcsafe`, `SICGes`, `SICGkdsup`, `SICGkeymg`, `SICGkisup`

SunVTS 5.1 Patch Set 5 (PS5) Issues

The following issues apply to the SunVTS™ 5.1 PS5 product.

New Features and Tests for This Release

The SunVTS 5.1 PS5 software is compatible with the Solaris 8 2/02, Solaris 8 HW 12/02, Solaris 8 HW 5/03, Solaris 8 HW 7/03, Solaris 8 2/04, Solaris 9, Solaris 9 9/02, Solaris 9 12/02, Solaris 9 4/03, Solaris 9 8/03, Solaris 9 12/03, and Solaris 9 4/04 operating environments. The following new features and tests are added to the SunVTS 5.1 PS5 release:

- JNI 2GB FC HBA Test (`jnifctest`) – Tests the functionality of the JNI FC HBA.

Note – The S24 Frame Buffer Test (`tcxtest`), the Level 2 Cache Test (`l2cachetest`), and the Cache Consistency Test (`mpconstest`) will be discontinued in a future release of SunVTS.

Note – The SunPCi™ II Test (`sunpci2test`) tests both the SunPCi II and SunPCi III cards in SunVTS 5.1 PS2.

Note – All new features, tests, and test enhancements that are released in SunVTS 5.1 PS5 are documented in the *SunVTS 5.1 Patch Set 5 Documentation Supplement* (817-4350-10). This document is included on the Solaris Software Supplement CD and is available at: `http://docs.sun.com`

Refer to the *SunVTS 5.1 Patch Set 5 Documentation Supplement* for details about the new features and tests offered in this release.

Note – The name of the Remote System Control test (`rsctest`) has been changed to System Service Processor test (`ssptest`) in SunVTS 5.1 PS1. The reason for this change is that `ssptest` tests the Advanced Lights-Out Management (ALOM) hardware in addition to both Remote System Control 1.0 and 2.0 hardware.

Note – The SPARCstorage® Array Controller Test (`plntest`) is discontinued in Solaris 9 8/03.

Online Help Documentation

The online help documentation available with the SunVTS 5.1 software includes a chapter describing the RAM test (`ramtest`). This test is supported only in SunVTS 5.1 Patch Set 4 (PS4) onward.

SunVTS 5.1 Test Reference Manual Errata

This section lists corrections to errors in the Supported Test Modes tables of the following test chapters in the SunVTS 5.1 Test Reference Manual:

- Compact Disk Test (`cdtest`)

  Online test mode is supported in SunVTS 5.1.

- CPU Test (`cputest`)

  Online test mode is supported in SunVTS 5.1.

- Disk and Floppy Drives Test (`disktest`)

  Online test mode is supported in SunVTS 5.1.

- DVD Test (`dvdtest`)

  Online test mode is supported in SunVTS 5.1.

- ECP 1284 Parallel Port Printer Test (`ecpptest`)

  Online test mode is not supported in SunVTS 5.1.

- Sun StorEdge A5x00 Test (`enatest`)

  Functional and Online test modes are supported in SunVTS 5.1.

- Sun StorEdge 1000 Enclosure Test (`enctest`)

  Online test mode is supported in SunVTS 5.1.

- Environmental Test (`env2test`)

  Online and Exclusive test modes are not supported in SunVTS 5.1.

- Environmental Test (`env4test`)

  Connection test mode is supported in SunVTS 5.1

- Floating Point Unit Test (`fputest`)

  Online and Exclusive test modes are supported in SunVTS 5.1.

- Cache Consistency Test (`mpconstest`)

  Only Exclusive test mode is supported in SunVTS 5.1.

- Multiprocessor Test (`mptest`)

  Only Exclusive test mode is supported in SunVTS 5.1.

- Qlogic 2202 Board Test (`qlctest`)

  Only Exclusive and Connection test modes are supported in SunVTS 5.1.

- Serial Ports Test (`sptest`)

  Online test mode is not supported in SunVTS 5.1.

- System Service Processor Test (`ssptest`)

  Exclusive test mode is supported in SunVTS 5.1.

Functional test mode is not supported in SunVTS 5.1

- SunHSI Board Test (`sunlink`)

  Online test mode is not supported in SunVTS 5.1.

- System Test (`systest`)

  Connection test mode is not supported in SunVTS 5.1.

- Tape Drive Test (`tapetest`)

  Online test mode is not supported in SunVTS 5.1.

- S24 Frame Buffer Test (`tcxtest`)

  Connection test mode is supported in SunVTS 5.1.

SunVTS 5.1 User's Guide Errata

In Appendix A, SunVTS Window and Dialog Box Reference, Table A-11 indicates the incorrect default value of 0 (zero) for the Max Errors field of the example systest Test Parameter Options dialog box in Figure A-11. The correct default value of the Max Errors field of the systest Test Parameter Options dialog box is 1 (one) as indicated in Figure A-11.

Also in Appendix A, Table A-13 indicates the incorrect default value of 0 (zero) for the Max System Errors field of the example systest Threshold Options dialog box in Figure A-13. The correct default value of the Max System Errors field of the systest Threshold Options dialog box is 1 (one) as indicated in Figure A-13.

Possible Installation Issues

You might encounter an installation problem when you attempt to install SunVTS with an installation program other than the `pkgadd` command as described in the following subsections.

If SunVTS 5.1 software is installed in the default `/opt` directory, you cannot install a subsequent SunVTS 5.1 Patch Set release in a different directory on the same system. When this duplicate installation is attempted with `pkgadd`, the following error message occurs:

```
pkgadd: ERROR: SUNWvts is already installed at /opt. Cannot create
a duplicate installation.
```

The reason for this error is that the base package revision is the same for both SunVTS 5.1 and any subsequent SunVTS 5.1 Patch Set release. When a SunVTS 5.1 Patch Set release is installed in the default `/opt` directory which already has SunVTS 5.1 software installed, the installation completes successfully with the following warning message:

```
This appears to be an attempt to install the same architecture and
 version of a package which is already installed.  This
 installation will attempt to overwrite this package.
```

Installation Package Dependency Issue for Solaris 8 (RFE ID 4823716)

From SunVTS 5.1, the SunVTS software depends on XML packages that are not included with the Solaris 8 2/02 distribution. For Solaris 9, all of the prerequisite packages are installed with the End User Solaris Software Group as a minimum.

Note – The additional XML packages are available on the Solaris 8 HW 12/02 through Solaris 8 2/04 Software Supplement CD-ROMs and not on the Solaris 8 2/02 Software Supplement CD-ROM. Although SunVTS 5.1 installation is supported on Solaris 8 2/02, the XML packages are not included in the Solaris 8 2/02 distribution.

You may install SunVTS 5.1 on Solaris 8 2/02, Solaris 8 HW 12/02, Solaris 8 HW 5/03, Solaris 8 HW 7/03, or Solaris 8 2/04. If you choose to install SunVTS 5.1 or later on any of these releases, you must separately install the required XML packages (`SUNWlxml`[32-bit] and `SUNWlxmlx`[64-bit]) from either the Solaris 8 HW 12/02, Solaris 8 HW 5/03, Solaris 8 HW 7/03, or Solaris 8 2/04 Software Supplement CD-ROM.

Note – SunVTS 4.6, which is delivered on the Solaris 8 2/02 Software Supplement CD-ROM, does not have the XML packages dependency and is supported on Solaris 8 2/02. SunVTS 5.1 is also supported on Solaris 8 2/02 if the XML packages are installed from the Solaris 8 HW 12/02 through Solaris 8 2/04 Software Supplement CD-ROM.

For Solaris 8 releases:

1. Install the minimum End User Solaris Software Group.
2. Install the XML packages `SUNWlxml`(32 bit) and `SUNWlxmlx`(64 bit) from either the Solaris 8 HW 12/02, Solaris 8 HW 5/03, Solaris 8 HW 7/03, or Solaris 8 2/04 Software Supplement CD-ROM.

Note – These XML packages are not available in the Solaris 8 2/02 distribution.

3. Install SUNWzlib(32 bit) and SUNWzlibx(64 bit) packages from the Entire Solaris Software Group from either the Solaris 8 2/02, Solaris 8 HW 12/02, Solaris 8 HW 5/03, Solaris 8 HW 7/03, or Solaris 8 2/04 Software CD-ROM.

Note – The XML packages depend on the SUNWzlib(32 bit) and SUNWzlibx(64 bit) packages which are not part of the End User Solaris Software Group for Solaris 8 2/02, Solaris 8 HW 12/02, Solaris 8 HW 5/03, Solaris 8 HW 7/03, or Solaris 8 2/04.

4. Install the optional SUNWcpc(x)/SUNWcpcu(x) packages only if you want to enable displaying certain performance counters for certain CPU and memory tests. Otherwise, these packages need not be installed.

   The SUNWcpc(x)/SUNWcpcu(x) packages are included in the Entire Solaris Software Group for Solaris 8 2/02, Solaris 8 HW 12/02, Solaris 8 HW 5/03, Solaris 8 HW 7/03, and Solaris 8 2/04. These packages are not included in the End User Solaris Software Group for Solaris 8 2/02, Solaris 8 HW 12/02, Solaris 8 HW 5/03, Solaris 8 HW 7/03, nor Solaris 8 2/04.

To install SunVTS for Solaris 9 and later releases:

1. Install the End User Solaris Software Group (or any software group).

   The XML packages (SUNWlxml[32-bit] and SUNWlxmlx[64-bit]) and the SUNWzlib packages (SUNWzlib[32 bit] and SUNWzlibx[64 bit]) are part of the End User Solaris Software Group (and Entire Solaris Software Groups) for Solaris 9 releases.

2. Install the optional SUNWcpc(x)/SUNWcpcu(x) packages only if you want to enable displaying certain performance counters for certain CPU and memory tests. Otherwise, these packages need not be installed.

   The SUNWcpc(x)/SUNWcpcu(x) packages are part of the Entire Solaris Software Group and not the End User Solaris Software Group.

Installation Issue: 32-bit Only Systems and Web Start 2.0 (Bug ID 4257539)

Web Start 2.0 may not install SunVTS on systems that do not have the Solaris 64-bit environment installed. Web Start 2.0 removes the SunVTS 32-bit packages when the SunVTS 64-bit packages cause the installation to suspend.

Workaround: Use the pkgadd command to install the 32-bit SunVTS packages as described in the *SunVTS 5.1 User's Guide*.

Installation Issue: Security and Web Start 2.0 (Bug ID 4362563)

When you install SunVTS using Web Start 2.0, you are not prompted to enable the Sun Enterprise Authentication Mechanism™ (SEAM) Kerberos v5, SunVTS security feature. The installation defaults in a way that installs SunVTS without this high level of security. If you do not want the high-level security, there is no problem.

Workaround: To enable the high-level SEAM security, use the `pkgadd` command to install SunVTS packages as described in the *SunVTS 5.1 User's Guide*.

Installation Issue: The Installation Directory With Web Start 2.0 Is Not User-Definable (Bug ID 4243921)

When you attempt to install SunVTS using Web Start 2.0, you are unable to change the directory where SunVTS is installed. SunVTS will be installed in `/opt`.

Workaround: Use the `pkgadd -a none` command to install SunVTS in the directory of your choice as described in the *SunVTS 5.1 User's Guide*.

Installation Recommendation: Install and Uninstall Using the Same Program

Use the same tool or utility for installation and removal of the SunVTS software. If you use `pkgadd` for installation, use `pkgrm` to uninstall; if you use Web Start for installation, use the Product Registry to uninstall.

Workaround: None.

Possible Runtime Issues

Patch for Testing CPUs on Sun Fire E15K Systems

When performing the following SunVTS tests on Sun Fire E15K systems with 72 UltraSPARC IV processors (144 CPU IDs), the following issues might occur:

- `systest` - A Bus Error (core dumped) error might occur (Bug ID 4981458)
- `mptest` - The test could hang (Bug ID 4982924)
- `mpconstest` - The test could fail because of too many CPU IDs (Bug ID 4982944)
- `cmttest` - The test times out (Bug ID 4982948)
- `cmttest` - The test fails (Bug ID 4981014)

Workaround: Look for the latest version of Patch ID 116042 at:

`http://sunsolve.sun.com`

`qlctest` *Internal Loopback Failure (Bug ID 4704300)*

The `qlctest` 10-bit/1-bit internal loopback subtests might fail when performed on Sun Fire V880 product line platforms. This problem is fixed in the latest SAN Foundation software.

Workaround: Install the Sun StorEdge SAN Foundation Software 4.2 or later from: `http://www.sun.com/storage/san/`

Using `sutest` *(Bug ID 4995795)*

`sutest` might fail immediately.

Workaround: None.

Using `env3test` *(Bug ID 5007286)*

`env3test` might fail immediately.

Workaround: None.

Adding Boards to Sun Fire 15K Systems (Bug ID 4959606)

On Sun Fire 15K systems, adding new boards might cause some of the processor and memory related tests to perform ineffectively. Specifically, `cmttest` might fail to recognize the CMT processors on the new board. Similar failures might also occur in `l2sramtest`, `l1dcachetest`, `dtlbtest`, `ramtest`, `bustest`, `mptest`, and `fputest`.

Workaround: Reboot the system after adding a new board.

`pfbtest` *Fails When Used in the Gnome Desktop Environment (Bug ID 4938281)*

`pfbtest` might fail when performed in the Gnome desktop environment on a Sun XVR-100 graphics accelerator if the test is performed in the default console window.

This failure does not occur in the Solaris 8 2/02 and Solaris 8 HW 3/03 operating environments. If this failure occurs, you see an error message similar to the following:

```
pfb3(pfbtest)            passes: 26 errors: 12
```

Workaround: None.

Using `ecpptest` *(Bug ID 4482992)*

An ecpp/parallel port driver issue might cause `ecpptest` to fail. The failure rate is three out of 130 machines; the time to fail is about 10 hours.

Note – This driver issue exists only in Solaris 8 software.

Workaround: None.

Using `sutest` *and* `disktest` *Simultaneously (Bug ID 4858028)*

Sun Blade 100 and 150 systems with SunVTS can produce data corruption errors when the serial port controller (southbridge) is also handling other heavy traffic such as data access from and to the IDE hard disk.

With SunVTS simultaneously running `sutest` and `disktest` on Sun Blade 100 and 150 systems, you might see `sutest` report failures similar to the following:

```
07/11/03 16:35:58 dt214-175 SunVTS5.1ps2: VTSID 6003 sutest.ERROR su0:
"data miscompare, cnt = 2910, exp = 0x5e, obs = 0x4e, receive device =
/dev/term/a, source device = /dev/term/a, baud rate = 9600"
Probable_Cause(s): <system load too heavy for selected baud rate>
<loopback connection defective> <bad serial port hardware> <system
software error> Recommended_Actions: <reduce system load> <lower baud
rate> <check loopback connection> <if the problem persists, contact
authorized Sun service provider>
```

The difference between the expected (`exp`) and the observed (`obs`) values is always 0x10.

The long term technical fix for this problem will involve the installation of a patch or driver to be released in the near future. The root cause of this failure is still under investigation.

Workaround: Do not perform `sutest` and `disktest` simultaneously.

Using `zulutest` *(Bug ID 4753578)*

If you perform the Sun XVR-4000 Graphics Accelerator Test (`zulutest`) on a system that was powered on without running X-Windows, you must bring up X-Windows on the Sun XVR-4000 Graphics Accelerator device under test and kill the X-Windows process before performing `zulutest`. Otherwise, the Convolve subtest might fail, and other subtests might also fail.

Note – You must enable multisampling with the `fbconfig` command before performing the following workaround. To perform `zulutest` with X-Windows (CDE) the following workaround is not necessary.

Workaround: To bring up X-Windows on the Sun XVR-4000 Graphics Accelerator device under test, enter the following command:

```
/usr/openwin/bin/Xsun -dev /dev/fbs/device_name &
```

It takes 30 to 45 seconds before Xsun comes up. To kill the Xsun process, enter the following command:

```
pkill -KILL Xsun
```

Once the Xsun process is killed, the `zulutest` can be performed without the incorrect subtest errors.

The Sun XVR-4000 Graphics Accelerator cannot perform video read back in Interlaced and Stereo modes because the Convolve subtest cannot keep up.

For `zulutest` to be able to perform the Convolve subtest, multisampling must be enabled.

Workaround: None.

Using `zulutest` *(Bug ID 4824491)*

The console could become corrupted when performing `zulutest` from a console window if a Stop-A keyboard sequence is entered in the CDE environment.

Workaround: Do not use the Stop-A keyboard sequence when performing `zulutest`.

Using `pkginfo -c sunvts` *Command*

The command `pkginfo -c sunvts` does not produce any output in SunVTS 5.1. This situation correctly implements the `-c` option of the `pkginfo` command.

Workaround: Use the following command to receive SunVTS 5.1 package information:

```
# pkginfo -l SUNWvts SUNWvtsx SUNWvtsmn
```

You can also use either of the following commands to receive additional SunVTS 5.1 package information:

```
# pkginfo | grep vts
# showrev -p | grep vts
```

Workaround: None.

Using `sutest` *(Bug ID 4750344)*

Performing `sutest` on a port that is being used as console causes `sutest` to fail.

Workaround: Do not perform `sutest` on a port that is being used as a console.

Using `m64test` *in a Gnome Environment (Bug ID 4997460)*

Performing `m64test` for Sun PGX64 in a default console winfow, might cause intermittent failures in a Gnome environment.

Workaround: None.

Using `afbtest` *and* `m64test` *in a Gnome Environment (Bug ID 4996537)*

Performing `afbtest` or `m64test` tests in a Gnome environment might cause intermittent failures.

Workaround: None.

Using `jnifctest` *(Bug ID 4965226)*

An error might occur when `jnifctest` is performed on a system with 5 JNI ports. This error occurs on one card and the error can be seen using the data pattern 0x00000000. The value returned for the `fcio_errno` statistic is 65 (decimal).

Workaround: Turn off the self-test or perform the test on one port only.

Using `disktest` *(Bug ID 4915233)*

When performing `disktest`, the test might probe and premount the Solstice DiskSuite (SDS) partitions as mirrors.

Workaround: Set the `BYPASS_FS_PROBE` parameter to 0.

Creating Schedules (Bug ID 4946695)

If the `/var/opt/SUNWvts/sched_manage` directory is not present, schedules cannot be created.

Workaround: Create the `/var/opt/SUNWvts/sched_manage` directory before creating schedules.

Sun Remote System Control (RSC) 2.2.2 Release Notes

This section deals with Sun Remote System Control (RSC) 2.2.2 hardware and software issues.

What's New in RSC 2.2.2

Several new features not documented in the *Sun Remote System Control (RSC) 2.2 User's Guide* are available in RSC 2.2.2:

- The RSC graphical user interface requires an updated version of the Java™ Runtime Environment, Java 2 Standard Edition (SDK 1.4.0 Beta 3) Beta Release for the Solaris operating environment. You can download the appropriate Java version from the following Web site:

  `http://www.sun.com/solaris/java`

  On Microsoft Windows platforms only, RSC supports the Java 2 Standard Edition (J2SE™) Runtime Environment version 1.3.1. It is available on the Supplemental CD or from the following Web site:

http://java.sun.com/j2se/1.3/

- Client support has been added for the Microsoft Windows 2000 operating environment.
- Sun Fire V480 servers include a new hardware feature, a Locator LED on the system's front and rear panels. RSC client software enables you to toggle the state of these LEDs to help identify a particular system that might be located in a rack with other servers.

Before Installing Sun Remote System Control Software

RSC software is included as part of the default installation set for this Solaris release. You should install RSC server components on a compatible Solaris server only; you can install the client software on any computer that meets the Solaris or Windows software requirements. You must install and configure the RSC software before you can use RSC.

You can install the RSC 2.2.2 server software package, `SUNWrsc`, on:

- A Sun Fire V480 server running the Solaris 8 10/01 operating environment
- A Sun Fire V880 server running the Solaris 8 7/01 operating environment or another Solaris version that supports the RSC 2.2.2 product
- A Sun Fire 280R server running the Solaris 8 1/01 operating environment or another Solaris version that supports the RSC 2.2.2 product
- A Sun Enterprise 250 server running one of the following operating environments:
  - Solaris 2.6
  - Solaris 7
  - Solaris 8
  - Solaris 9

You can install the RSC 2.2.2 client software package on:

- Any other computer running the Solaris 2.6, Solaris 7, Solaris 8, or Solaris 9 operating environment.
- Any computer running one of the following Microsoft Windows operating systems:
  - Windows 98
  - Windows 2000
  - Windows NT 4.0

Solaris client computers require Java 2 Standard Edition (SDK 1.4.0 Beta 3) Beta Release for the Solaris operating environment. RSC 2.2.1 software does not run using the J2SE Runtime Environment Version 1.3.1. You can download the appropriate Solaris Java version from the following Web site:

```
http://www.sun.com/solaris/java
```

On the Microsoft Windows platforms only, RSC supports the J2SE Runtime Environment version 1.3.1. It is available on the Supplemental CD or from the following Web site:

```
http://java.sun.com/j2se/1.3/
```

Before upgrading from a previous version of RSC or reinstalling the software, log in to the server as superuser and back up your configuration data using the following commands:

```
# rscadm show > remote-filename
# rscadm usershow >> remote-filename
```

Use a meaningful file name that includes the name of the server that RSC controls. After installation, you can refer to this file to restore your configuration settings.

Installation on the Solaris operating environment places the *Sun Remote System Control (RSC) 2.2 User's Guide* in the location `/opt/rsc/doc/`*locale*`/pdf/user_guide.pdf`. Installation on the Windows operating environment places the user's guide in the location `C:\Program Files\Sun Microsystems\Remote System Control\doc\`*locale*`\pdf\user_guide.pdf`.

The following sections describe Sun Remote System Control (RSC) 2.2.2 issues.

RSC General Issues

This section describes issues that affect RSC running on all platforms.

Note – Removing or installing the RSC card while the system has the AC power cord connected could damage your system *or* your RSC card. Only qualified service personnel should remove or replace the RSC card. Contact your qualified service representative to perform this service operation.

▼ To Remove and Install the RSC Card

Before you follow the procedures in the *Sun Fire V480 Server Service Manual*, *Sun Fire 280R Server Service Manual*, or *Sun Fire V880 Server Service Manual* to remove or install the RSC card, perform this procedure to ensure that there is no AC power present in the system.

1. **Shut down and halt the system.**

2. **With the system at the `ok` prompt, turn the keyswitch to the Off position.**

   Standby power is still present in the system at this point.

3. **Disconnect all AC power cords from their back panel receptacles.**

   This ensures that there is no standby power voltage present in the system.

4. **Follow the procedure you require in your service manual.**

RSC Console Sometimes Exits Unexpectedly (Bug ID 4388506)

The RSC console window sometimes exits when processing large amounts of text data, for instance when executing the `ls -R` command for a large file structure. This is an intermittent problem.

Workaround: Open another console window.

Locator LED Functions Not Documented in User's Guide (Bug ID 4445848, 4445844)

Sun Fire V480 servers include a new hardware feature, a Locator LED on the system's front panel. RSC client software enables you to toggle the state of this LED to help identify a particular system that might be located in a rack with other servers. The Toggle Locator LED command is available in the graphical user interface under Server Status and Control. The syntax of the command-line interface commands to toggle the LED state for this release are:

```
/* setlocator [on|off] turns the system locator LED on or off*/
/* showlocator shows the state of the system locator LED*/
rsc> setlocator on
rsc> showlocator
Locator led is ON
rsc> setlocator off
rsc> showlocator
Locator led is OFF
```

The status of the Locator LED is shown in the GUI display of the server front panel and in the output of the `environment` (`env`) and `showenvironment` commands.

`rsc-console` *Switches to Tip Connection During Boot if* `diag-switch?` *Is Set to* `true` *(Bug ID 4523025)*

If `diag-switch?` is set to `true` and you use the `bootmode -u` command to reboot your system, `rsc-console` reverts to the serial (Tip) connection after Solaris restarts, even if you have previously redirected the console to RSC.

Workaround: Manually redirect the console output to RSC again after the reboot operation has completed. Refer to the *Sun Remote System Control (RSC) 2.2 User's Guide* for more information.

Users Can Only Run RSC Client Once on Japanese Version of Microsoft Windows 98

An RSC client installed on the Japanese version of Microsoft Windows 98 does not start again once you exit from the client, unless you reboot the system. The `javaw stack error` appears. This occurs only on the initial version of Windows 98, and does not happen on the other versions of Windows (95, 98 Second Edition, NT).

Workaround: Download and install Microsoft IME98 Service Release 1 (IME98-SR1) from the Microsoft web site. The crash does not occur after IME98-SR1 has been installed.

RSC Issues for Sun Fire 280R and Sun Fire V880 Servers

This section describes issues that affect RSC running on Sun Fire 280R and Sun Fire V880 servers.

Additional RSC Alert

RSC generates the following alert on a Sun Fire 280R or Sun Fire V880 server when the RSC card begins battery use after a power interruption:

```
00060012: "RSC operating on battery power."
```

This alert is not documented in the *Sun Remote System Control (RSC) 2.2 User's Guide.*

RSC Issues for Sun Fire 280R Servers Only

This section describes issues that affect RSC running on Sun Fire 280R servers only. See the *Sun Fire 280R Server Product Notes* for other Sun Fire 280R server issues.

Boot Sequence Sometimes Bypasses RSC

In rare instances, the system might bypass the RSC card during startup.

Workaround: To check whether the system booted and is online, use the `ping` command to see if the card is alive, or log in using `telnet` or `rlogin`. If the system is not connected to the network, establish a Tip connection to the system. (Be sure that console I/O is not directed to the RSC card.) Use the Tip connection to view boot messages on the troubled system, or reboot the system. For help in diagnosing the problem, see your hardware owner's guide.

False Drive Fault Reported at Power On

When you power on the system, it might report a false internal drive fault that is recorded in the Sun Remote System Control (RSC) log history.

Workaround: Disregard the error reported by RSC if the system boots successfully to the Solaris operating environment. In most cases the erroneous fault does not reappear. You can verify the disk after the boot process by using the `fsck` utility.

Note – Any disk drive error message reported by the Solaris operating environment is a real disk drive error.

If a disk fault is reported at the `ok` prompt and the system fails to boot to the Solaris operating environment, there might be a problem with the disk drive. Test the disk drive with the OpenBoot Diagnostics tests documented in the "Diagnostics, Monitoring, and Troubleshooting" chapter in the *Sun Fire 280R Server Service Manual.*

RSC Command `rscadm resetrsc` *Fails (Bug ID 4374090)*

After a cold restart or after powering on the system, the RSC command `rscadm resetrsc` fails; this is a known condition. You need to reset the host system for the command to function correctly.

Workaround: Reset the host using one of the following commands:

- At the `ok` prompt, execute the `reset-all` command.
- At the RSC command-line interface (CLI) prompt, issue the `reset` command.
- At the Solaris CLI prompt, issue the `reboot` command.

The RSC `rscadm resetrsc` command now functions correctly.

RSC Issues for Sun Enterprise 250 Servers Only

This section describes issues that affect RSC running on Sun Enterprise 250™ servers only. See the *Sun Enterprise 250 Server Product Notes* for other Sun Enterprise 250 server issues.

Do Not Run OpenBoot PROM `fsck` *Command From the RSC Console*

Do not issue the `fsck` command from the redirected RSC console.

Workaround: Reset the system's `input-device` and `output-device` settings to `ttya`. Then reboot the system and access the system through its local console or terminal and execute the OpenBoot PROM `fsck` command directly.

Do Not Run OpenBoot PROM `boot -s` *Command From the RSC Console*

The command `boot -s` does not work from the RSC console.

Workaround: Reset the system's `input-device` and `output-device` settings to `ttya`. Then reboot the system, access the system through its local console or terminal, and execute the `boot -s` command directly.

Changing the `serial_hw_handshake` *Variable Requires a System Reboot*

In order for changes to the RSC configuration variable `serial_hw_handshake` to take effect, the server must be rebooted. This also affects the Enable Hardware Handshaking check box in the RSC graphical user interface. This limitation is not stated in the documentation.

SunForum

SunForum™ video cannot be used in an environment that supports only 8 bits per pixel. In particular, video does not work when used on PGX8, PGX24, and PGX64 in `defdepth 8` mode.

WDR (WBEM-Based Dynamic Reconfiguration)

Open Bugs

Logging Supports Syslog `local0` *Facility Only (Bug ID 4643706)*

WDR cannot be configured to use a user-defined syslog facility, and is hard-coded to use syslog `local0`. When any program logs messages to the `local0` syslog facility on the Sun Fire midrange midframe service processor, its messages appear in the WDR log.

Workaround: None.

`mcfgconfig` *Ignores Value* `-1` *and Uses the Entry in the Sun Management Center* `config` *File (Bug ID 4700686)*

When you use `mcfgconfig` to reconfigure WDR and change a domain configuration, you should be able to use the value `-1` to indicate that there is no specified value. If a Sun Management Center configuration file exists, then the `mcfgconfig` utility ignores the `-1` value, and uses the value that appears in the corresponding field in the Sun Management Center configuration file. If a Sun Management Center configuration file does not exist, then using a `-1` value in the `mcfgconfig` utility has the desired effect.

Workaround: If Sun Management Center is installed and you want to change the configuration, make any configuration changes first in the Sun Management Center configuration file and then in the `mcfgconfig` utility.

`getInstance` *Shows Wrong Value for Referenced Property of* `Solaris_CHController` *(Bug ID 4635499)*

On Sun Fire 6800/4810/4800/3800 systems, the `getInstance()` method sometimes displays the value of the `Solaris_CHController` class `Referenced` property incorrectly.

Workaround: Use the `enumerateInstance()` method instead to check the `Solaris_CHController` class `Referenced` property.

Solaris_VMConcatComponent Erroneously Throws Exception in References/Names Calls (BugID 4712814)

A client program that calls CIMClient's `referenceNames()` or `references()` with `resultClass` set to null causes an `RMIERROR` exception to be thrown.

Workaround: When calling `referenceNames()` or `references()`, make sure `resultClass` is set to a non-null value.

Problem with Postinstall Script of `SUNWWDRcfg` *with Live Upgrade (BugID 4753154)*

During a live upgrade, the postinstall script of the `SUNWWDRcfg` package attempts to add an entry into `/var/spool/cron/crontabs/root` instead of to the correct `/a/var/spool/cron/crontabs/root`.

ID Field of `Solaris_SGDomain` *Populated Inconsistently in Different MSP (BugID 4947446)*

CIMOM might improperly interpret the ID field of `Solaris_SGDomain` as a string instead of an integer on some MSP systems. The value returned is a quote-enclosed integer string instead of an int32.

Workaround: Modify the client to handle a returned string instead of an integer.

WDR Does Not Work With SMS1.4 (BugID 4933314)

WDR is not compatable with SMS 1.4 and might cause problems that appear as memory corruption, resulting in WEBM hanging or crashing.

OpenGL

OpenGL Package `SUNWgldoc` Contains Broken Links (BugID 4706491)

Some content from the documentation package for the OpenGL software installs incorrectly.

Workaround: Fix the affected link by typing the following:

```
# cd /usr/openwin/share/man/man3gl
# mv gltexfilterfuncSGIS.3gl gltexfilterfuncsgis.3gl
```

Platform-Specific Issues

Upgrade Firmware on Sun Fire and Netra Servers Before Installation (BugID 4747307, 4799331)

To install the Solaris 9 4/04 operating environment on specific Sun Fire and Netra™ servers, you must first update the firmware on the server. If you do not update the firmware before you install the Solaris 9 4/04 software, the server panics. This problem affects the following servers:

- Sun Fire 3800
- Sun Fire 4800
- Sun Fire 4810
- Sun Fire 6800
- Sun Fire V1280
- Netra 1280

If this problem occurs, the following error message is displayed:

```
panic[cpu0]/thread=140a000: BAD TRAP: type=34 rp=147e9e0
addr=5586ee326973add3 mmu_fsr=0
```

The `ok` prompt is displayed.

Workaround: Update the firmware by applying the appropriate firmware patch.

For Sun Fire 3800, 4800, 4810 or 6800 servers, apply one of the following patches:

- Patch ID 112883-05 (5.14.4 firmware update)
- Patch ID 112884-04 (5.15.3 firmware update)

For Sun Fire V1280 or Netra 1280 servers, apply Patch ID 113751-03 (5.13.0013 firmware update).

Firmware update patches are available at:

`http://sunsolve.sun.com`

Be sure to download and apply the most current version of the patch.

Netra Servers

Error Message Appears for Netra X1 in Solaris 9 (BugID 4663358)

Some X1 systems require a PROM patch from Solaris 8 before running Solaris 9. When booting a Netra X1 in Solaris 9, the following error message might appear:

```
WARNING: ds1287_attach: Failed to add interrupt.
```

Workaround:

1. Check the system's PROM version.

   If you have OpenBoot PROM version 4.0.9 or later, no action is needed.

   If the OpenBoot PROM version is earlier than 4.0.9, boot the X1 system in Solaris 8.

2. Install patch 111092-02 or later (this is a prerequisite to Step 4). Do not reboot the system between Steps 3 and 4.

3. Install patch 111952-02 or later.

   This installs OpenBoot PROM version 4.0.9 or later.

This problem only applies to Netra X1 systems, not to Sun Fire V100 systems.

Sun StorEdge Systems

LUN Missing After Changing Target ID (Bug ID 4399108)

Changing a target ID on a running Sun StorEdge T3 results in a missing LUN.

Workaround: Issue a LIP again using the `vol unmount` and `vol mount` commands. The host now sees the device.

Incorrect Parameters Might Cause Panic in Sun StorEdge T3 (Bug ID 4319812)

A Sun StorEdge T3 system might panic if an application uses the HTTP interface to send tokens with out-of-range parameters.

I/O Timeout Incorrectly Detected (Bug ID 4490002)

When some utilities send IP packets to the network interface on a Sun StorEdge T3, the T3 might hang without its `ssd/sf` layer detecting I/O timeout correctly.

Workaround: Upgrade to 1.17a Sun StorEdge T3 firmware.

Sun Fire Systems

RCM Might Fail After Repeated Hot Plug Stress (Bug ID 4474058)

Under repeated stress using PCI hotplug, RCM fails with error code 7 on a Sun Fire V880 system.

XVR-4000 Might Not Be Recognized After Solaris Installation (BugID 4842377)

A Sun Fire V880 might not automatically recognize the XVR-4000 graphics accelerator after a first-time fresh Solaris installation, resulting in a blank screen on monitors connected to the XVR-4000. This problem can also occur when re-installing a version of Solaris that does support the XVR-4000 (Solaris 9 4/03 or later, or other Solaris versions supported by a special installation DVD included with the XVR-4000), replacing a version of Solaris that does not support the XVR-4000.

Workaround:

1. Begin your Solaris installation using either a ttya or PCI-based graphics card with the console.
2. Install Solaris as usual.
3. Perform a power cycle.

   The XVR-4000 should be recognized now as the new default screen.

Sun Fire V880 Shows Warning After Reboot (Bug ID 4717004)

The fix for Bug ID 4717004 removed the `bbc` and `gptwo` drivers. Even though these drivers have been deleted, the V880 software delivered with Solaris 9 4/04 still attempts to load these drivers, causing the following messages to appear during boot:

```
WARNING: Failed to install "bbc" driver.
WARNING: Failed to install "gptwo" driver.
```

Workaround: These messages are benign and can safely be ignored.

Sun Fire V250 Installation

The `SUNWCXall` software metacluster must be installed on a Sun Fire V250.

Sun Fire 6800 Might Crash When Running `trapstat` (BugIDs 4978865 and 4979012)

Running the `trapstat` command on a Sun Fire 6800 might result in a crash and error messages naming fatal conditions.

`psrinfo -p` Might Not Display All CPUs (BugID 4983696)

On a Sun Fire 4800 system, the command `psrinfo -p` might not return the correct number of CPUs. The command `psrinfo -sp` causes a segmentation fault. This problem might be masked if an UltraSPARC IV board is part of the system.

Workaround: use the command options `psrinfo` and `psrinfo -s` instead.

Sun Fire 15K/12K Systems

Updated Flash Image for Sun Fire 15K/12K Systems Running SMS 1.2 (BugID 4728549)

For domains containing CPU/MCPU boards flashed at LPOST level 5.13.3 or lower, an LPOST error might cause a failure to boot Solaris and/or cause a system to hang.

Workaround: SMS 1.2 patch 112829-05 (or higher) contains an updated LPOST flash image. This patch is available at:
`http://sunsolve.sun.com`

This bug is fixed in SMS 1.3. Upgrading to SMS 1.2 or later, from previous versions, is recommended.

To find out the LPOST level flashed on your system's CPU/MCPU boards, type:

```
% flashupdate -d X -f /opt/SUNWSMS/hostobjs/sgcpu.flash -n
```

Where *X* is the letter (A-R) of the domain.

To find out whether the patch already exists on your system, type:

```
% showrev -p | grep 112829
```

If Patch 112829-05 is not installed, no data is returned. If this is true:

1. Apply patch 112829-05 to both System Controllers according to the instructions in the patch README file.

   Note special installation instructions.

2. Use the `flashupdate` command to update the LPOST image on CPU/MCPU boards.

   Refer to the `flashupdate` man page for specific command syntax.

SMS Error on Sun Fire 15K/12K (BugID 4979315)

On Sun Fire 15K/12K systems, SMS might return the `unum` string with an incorrect value. The string is in the form:

`SB`*w*`/P`*x*`/E`*y* `J`*z*

Where w is 0 - 17, x is 0 - 3, y is 0 - 1, and z is from one to four digits long. (All ranges are inclusive.) This bug might cause the `P#` number to be 0 - 7 instead of 0 - 3.

Workaround: If the `P#` is a value between 4 and 7, subtract 4 to get the correct value.

Sun Blade Systems

System Panics When Xsun Dies With UPA Bus Off (Bug ID 4772013)

This bug affects Sun Blade™ 1000 or 2000 systems that have the XVR-1000 graphics accelerator installed. If Xsun dies or exits while the graphics bus is power managed, the system panics.

Workaround: Add the following line to the system's `/etc/power.conf` file:

```
device-thresholds     /upa@8,480000   always-on
```

Other Issues

Network Drivers Installed by Default

The Solaris Installation CD automatically installs the network drivers from the Supplement CD. Drivers for the SunATM™ and SunHSI/P™ cards are now installed by default when the Solaris 9 4/04 operating environment is installed. Error messages might be displayed if you do not have some of the corresponding hardware installed. You can ignore these error messages.

Serial Parallel Controller Driver Does Not Support Dynamic Reconfiguration (Bug ID 4177805)

This `spc` driver does not support Dynamic Reconfiguration features in the Solaris 9 4/04 operating environment.

PGX32 DGA Pixmap With Java SwingSet2 Crashes X Server (Bug ID 4420220)

Java SwingSet2, when used on a system with a PGX32 frame buffer, displays garbled images and crashes the X server. The X server is restarted after the user logs in.

Workaround:

- Stop using the offscreen-cached pixmap by typing the command:

```
% GFXconfig -cachedpixmap false
```

- Stop using DGA for accessing pixmaps by typing the command:

```
% setenv USE_DGA_PIXMAPS false
```

After the `setenv` command, exit the CDE or OpenWindows interface and restart the X server.

`picld` Restarts Without Dumping Core (Bug ID 4459152)

After some errors, `picld` restarts itself without dumping core.

`spec_open` Failure Causes Point Mount Failure (Bug ID 4431109)

A failure in `spec_open` causes mount failure of points referenced in the `vfstab` entry.

Workaround: Type the following command:

```
# cat S55initfc
devfsadm -i ssd
```

This loads the `ssd` driver and attaches all device instances.

Last Connection to Subsystem Might Detach (Bug ID 4432827)

A dynamic reconfiguration operation on the last connection to a multipathed device can be detached without warning.

Pulled Cable on Dual-Channel FC PCI Card Is Undetected (Bug ID 4438711)

The device driver does not detect when the cable is disconnected from the port and pulled away from the connector edge of the dual-channel FC PCI card.

Workaround: Install Patch 111097-08 or later. Further information about this patch is available at the SunSolve web site at: `http://sunsolve.sun.com`

Pulled Cable on A5x00 Leaves System Board Undetachable (Bug ID 4452438)

Pulling the fibre cable going to controller A0 on an A5000 causes any subsequent DR operation for detaching the system board to fail. Reconnecting the fibre cable does not enable a successful DR detach operation.

`qlc` Power Management Causes Kernel Panic (Bug ID 4446420)

Power management of `qlc` causes the kernel to panic on an ASSERTION failure in the `qlc` driver code.

Workaround: Set the following in `/etc/system` to avoid the assertion:

```
qlc_enable_pm = 0
```

Devices Might Not Appear After Boot (Bug ID 4456545)

`qlc` might remain offline, preventing devices appearing after boot.

Workaround: Generate a LIP on the link to get the port in an Online state. You can generate LIP on the HBA port by running the command `luxadm -e forcelip`.

System Might Loop When Master CPU Is Changed (Bug ID 4405263)

A system using the `kadb` command to debug a live system can go into a repeating loop of incomplete error messages when the OpenBoot PROM's master CPU is changed. While a reset will restore the system to operation, the traces of the original failure are lost, resulting in an inability to perform the attempted diagnosis of a fatal reset.

Workaround:

- Upgrade to the latest version of OpenBoot PROM.
- Before switching, raise `pil` to `f` with the following command:

```
h# 0f pil!
```

Untagged Devices Incorrectly Supported (Bug ID 4460668)

The Sun StorEdge network foundation software driver does not honor untagged commands, and allows overlapped untagged commands.

Some DVD and CD-ROM Drives Fail to Boot Solaris (Bug ID 4397457)

The default timeout value for the SCSI portion of the SunSwift™ PCI Ethernet/SCSI host adapter (X1032A) card does not meet the timeout requirements of Sun's SCSI DVD-ROM drive (X6168A). With marginal media, the DVD-ROM occasionally

experiences timeout errors. The only exceptions are Sun Fire 6800, 4810, 4800, and 3800 systems, which overwrite the SCSI timeout value by means of OpenBoot PROM.

Workaround for other platforms: Use the on-board SCSI interfaces or DVD-ROM compatible SCSI adapters, such as X1018A (SBus: F501-2739-*xx*) or X6540A (PCI: F375-0005-*xx*).

MPxIO Driver Causes Domain Panic During DR (Bug ID 4467730)

When MPxIO is enabled during a Dynamic Reconfiguration operation, the `qlc` driver might suspend and cause a domain panic.

`scsi` Times Out on cPCI and Dual-Channel FC PCI Cards (Bug ID 4424628)

cPCI and dual-channel FC PCI cards might encounter a SCSI timeout or "giving up" error message due to a firmware problem.

ATM LANE Subnets for IPv4/IPv6 Might Not Complete Initialization (Bug ID 4625849)

On boot, multiple instances might not connect to their LANE instance if more than eight LANE instances are on a single adapter. This bug does not appear at multiuser level.

Workaround:

1. Verify the problem by issuing a `lanestat -a` command.

   Instances that are not connected have VCI values of 0 to the LES and BUS.

2. Stop and restart your SunATM network by typing:

```
# /etc/init.d/sunatm stop
# /etc/init.d/sunatm start
```

3. Reset netmasks or any other network setup for the SunATM interfaces.

This process only reinitializes your SunATM network.

Installation Might Fail on Drives Above 96 Gbytes (BugID 4724529)

Installation of the Solaris operating environment on drives with 96 GBytes or more might fail using some installation methods.

Workaround: Begin Solaris installation using the Solaris 9 4/04 Software 1 of 2 CD.

`probe-scsi-all` OBP Command Must Be Followed by `reset-all` (BugID 4589231)

The OpenBoot PROM command `probe-scsi` or `probe-scsi-all` must be followed by the `reset-all` command on `sun4u` systems before booting. Otherwise, a subsequent boot or `boot -v` might hang.

CHAPTER 4

Dynamic Reconfiguration on Sun Fire Midrange Systems

This chapter describes major issues related to dynamic reconfiguration (DR) on Sun Fire midrange (E6900/E4900/6800/4810/4800/3800) systems running Solaris 9 4/04 software.

General Information

This section contains general information about DR on Sun Fire midrange systems.

Minimum SC Firmware

TABLE 4-1 shows acceptable combinations of Solaris 9 software and SC firmware for each Sun Fire midrange system to run DR. If the platform listed in the first column is running the Solaris release shown in the second column, the minimum SC firmware release is on that same line in the third column.

Note – To take advantage of the latest firmware features and bug fixes, run the most recent SC firmware on your Sun Fire midrange system. As of the date of this release, the latest firmware release is 5.17.0, Sun PatchID 114524. For the latest patch information, see `http://sunsolve.sun.com`

TABLE 4-1 Minimum SC Firmware for Each Platform/Solaris Release

Platform	Solaris Release	Minimum SC Firmware
E6900/E4900	Support begins with Solaris 9 4/04	5.16.0
6800/4810/4800/3800	Solaris 9 4/04	5.14.4
6800/4810/4800/3800	Solaris 9	5.12.6

System Board Classes

The `cfgadm` command shows Sun Fire midrange server system boards as class "`sbd`" and CompactPCI (cPCI) cards as class "`pci`."

For more information about system-specific issues with DR, see "Known DR Limitations" on page 45.

To view the classes that are associated with attachment points, run the following command as superuser:

```
# cfgadm -s "cols=ap_id:class"
```

To also list the dynamic attachment points and their classes, add the `cfgadm` command's `-a` option as an argument to the preceding command.

Sun Management Center

For information about using Sun Management Center (Sun MC) with your Sun Fire midrange system, refer to the *Sun Management Center Supplement for Sun Fire Midrange Systems.*

Upgrading System Firmware

You can upgrade the system firmware for your Sun Fire midrange system through connection with an FTP or HTTP server where the firmware images are stored. For more information, refer to the `README` and `Install.info` files included in the firmware release(s) running on your domains. You can download Sun patches from `http://sunsolve.sun.com`.

Known DR Limitations

This section contains known software limitations of DR on Sun Fire midrange systems.

General DR Limitations

- Before performing any DR operation on an I/O (IBx) board, enter the following command to stop the `vold` daemon:

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

  After the DR operation has successfully completed, enter the following command to restart the vold daemon:

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

- On Sun Fire midrange systems, DR supports neither SAI/P (BugID 4466378) nor HIPPI/P. Previous releases did not support the SunHSI/P driver, but the bug that prevented support, 4496362, was fixed in patch 106922 (2.0) and 109715 (3.0). For more information see SunSolve.
- You must execute the `devfsadm(1M)` command in order to see any changes that have been made, especially in regard to changes from PCI to cPCI.

Limitations Specific to CompactPCI

- You can unconfigure a CompactPCI (cPCI) I/O assembly only if all the cards in the board are in an unconfigured state. If any cPCI card is busy (such as with a plumbed/up interface or a mounted disk), the board unconfigure operation fails with the status "busy." All cPCI cards should be unconfigured before attempting to unconfigure the cPCI I/O assembly.
- When a multipath disk is connected to two cPCI cards, it is possible to see disk activity across the cards when none is expected. For this reason, make sure that there is no activity on the local side of the resource. This is more likely to occur when attempting to perform DR operations on a cPCI card that shows a busy status, even when there is no activity on the local side of the resource. A subsequent DR attempt might be required.
- When a user lists the attachment point for a cPCI board using the `cfgadm`(1M) command with the `-a` option, cPCI slots and PCI buses are all listed as attachment points. The `cfgadm -a` command displays an attachment point for a PCI bus as `N0.IB8::pci0`. There are four such attachment points for each cPCI board. The user should not perform DR operations on these points, nor on the `sghsc` attachment point (which the `cfgadm -a` command displays as `N0.IB8::sghsc4`), because DR is not actually performed, and some internal resources are removed. Using DR on these attachment points (`bus` and `sghsc`) is strongly discouraged.
- In order for DR to function properly with cPCI cards, the levers on all cPCI cards that are inserted at Solaris boot time must be fully engaged.
- Unconfiguring a cPCI card automatically disconnects it, too. If autoconfigure is enabled, connecting a cPCI card also configures it. If autoconfigure is disabled, you must do the configure manually.

Operating System Quiescence

This section discusses permanent memory, and the requirement to quiesce the operating system when unconfiguring a system board that has permanent memory.

A quick way to determine whether a board has permanent memory is to run the following command as superuser:

```
# cfgadm -av | grep permanent
```

The system responds with output such as the following, which describes system board 0 (zero):

```
N0.SB0::memory connected configured ok base address 0x0, 4194304
 KBytes total, 668072 KBytes permanent
```

Permanent memory is where the Solaris kernel and its data reside. The kernel cannot be released from memory in the same way that user processes residing in other boards can release memory by paging out to the swap device. Instead, `cfgadm` uses the copy-rename technique to release the memory.

The first step in a copy-rename operation is to stop all memory activity on the system by pausing all I/O operations and thread activity; this is known as *quiescence*. During quiescence the system is frozen and does not respond to external events such as network packets. The duration of the quiescence depends on two factors: How many I/O devices and threads need to be stopped; and how much memory needs to be copied. Typically, the number of I/O devices determines the required quiescent time, because I/O devices must be paused and unpaused. A quiescent state usually lasts longer than two minutes.

Because quiescence has a noticeable impact, `cfgadm` requests confirmation before implementing quiescence. If you enter:

```
# cfgadm -c unconfigure N0.SB0
```

The system responds with a prompt for confirmation:

```
System may be temporarily suspended, proceed (yes/no)?
```

If you use Sun Management Center to perform the DR operation, a pop-up window displays this prompt.

Enter `Yes` to confirm that the impact of the quiesce is acceptable, and to proceed.

Known DR Software Bugs

This section lists important DR bugs.

`cfgadm_sbd` Plug-In Signal Handling Is Broken (BugID 4498600)

Description: Sending a catchable signal, such as `SIGINT` sent by `CTRL-C`, to one or more `cfgadm` instances can cause those instances to hang. The problem is more likely to occur when multiple `cfgadm` processes are running, and can affect `cfgadm`

instances on system boards, processors, I/O boards, and PCI slot attachment points. The problem has not been observed with a `SIGKILL`, and does not affect `cfgadm` status commands.

Workaround: None. To avoid this bug, do not send a catchable signal to a `cfgadm` process invoked to change the state of a component; for example, one executed with its `-c` or `-x` option.

SBM Sometimes Causes System Panic During DR Operations (Bug ID 4506562)

Description: A panic might occur when a system board that contains CPUs is removed from the system while Solaris Bandwidth Manager (SBM) is in use.

Workaround: Do not install SBM on systems that will be used for DR, and do not perform CPU system board DR operations on systems with SBM installed.

DR Hangs During Configure Operation with IB Board with `vxdmpadm policy=check_all` (Bug ID 4509462)

Description: A DR configure operation hangs with an `IB`*x* (I/O) board after a few successful iterations. This occurs when the DR operation is executed concurrently with the DMP daemon that is implementing the policy `check_all` with a time interval.

Workaround: Install VM 3.2 Patch 01.

CPU/Memory Board `unconfig` Takes a Long Time to Complete with Oracle/TPCC Load (Bug ID 4632219)

Description: On systems actively running Oracle/TPCC, DR CPU/memory board unconfigure operations might take an unusually long time to complete (up to 8 hours), and might also negatively impact Oracle performance.

Workaround: Do not perform CPU/memory board DR unconfigure operations while Oracle/TPCC is running.

Cannot DR out cPCI IB with P0 Disabled (BugID 4798990)

Description: On Sun Fire midrange systems, a Compact PCI (cPCI) I/O board cannot be unconfigured when Port 0 (P0) on that board is disabled. This problem exists only on systems running Solaris 9 software or Solaris 8 software with PatchID 108528-23. It occurs only during DR operations that involve cPCI boards, and displays an error message similar to the following:

```
# cfgadm -c unconfigure N0.IB7
cfgadm: Hardware specific failure: unconfigure N0.IB7: Device
 busy:/ssm@0,0/pci@1b,700000/pci@1
```

where N0.IB7 is a CompactPCI I/O Board with P0 disabled.

Workaround: If you do not need to disable P0 itself, disable its slots, instead.

panic: `mp_cpu_quiesce: cpu_thread != cpu_idle_thread` (BugID 4873353)

Description: If a processor is transitioned from the powered-off to the off-line state with `psradm(1M)`, a subsequent DR `unconfigure` operation on this processor can result in a system panic.

Workaround: Do not use `psradm(1M)` to offline a processor that is in the powered-off state.

CHAPTER 5

Sun Enterprise Midrange Systems Open Issues

This chapter contains the latest information for the Sun Enterprise systems running the Solaris 9 4/04 operating environment. These include the Sun Enterprise 6500, 6000, 5500, 5000, 4500, 4000, 3500, and 3000 systems.

The Solaris 9 4/04 operating environment includes support for all CPU/memory boards and most I/O boards in the systems mentioned above.

Dynamic Reconfiguration on Sun Enterprise 6*x*00, 5*x*00, 4*x*00, and 3*x*00 Systems

These release notes provide the latest information on Dynamic Reconfiguration (DR) functionality for Sun Enterprise 6*x*00, 5*x*00, 4*x*00, and 3*x*00 systems running the Solaris 9 4/04 operating environment. For more information on Sun Enterprise Server Dynamic Reconfiguration, refer to the *Dynamic Reconfiguration User's Guide for Sun Enterprise 3x00/4x00/5x00/6x00 Systems*.

The Solaris 9 4/04 operating environment includes support for CPU/memory boards and most I/O boards in Sun Enterprise 6*x*00, 5*x*00, 4*x*00, and 3*x*00 systems.

Supported Hardware

Before proceeding, ensure the system supports dynamic reconfiguration. If you see the following message on your console or in your console logs, the hardware is of an older design and not suitable for dynamic reconfiguration.

```
Hot Plug not supported in this system
```

Supported I/O boards are listed in the "Solaris 8" section on the following Web site:

http://sunsolve5.sun.com/sunsolve/Enterprise-dr

I/O board type 2 (graphics), type 3 (PCI), and type 5 (graphics and SOC+) are not currently supported.

Software Notes

▼ To Enable Dynamic Reconfiguration

In the `/etc/system` file, two variables must be set to enable dynamic reconfiguration and an additional variable must be set to enable the removal of CPU/memory boards.

1. **Log in as superuser.**
2. **To enable dynamic reconfiguration, edit the `/etc/system` file and add the following lines to the `/etc/system` file:**

```
set pln:pln_enable_detach_suspend=1
set soc:soc_enable_detach_suspend=1
```

3. **To enable the removal of a CPU/memory board, add this line to the `/etc/system` file:**

```
set kernel_cage_enable=1
```

Setting this variable enables the memory unconfiguration operation.

4. **Reboot the system to put the changes into effect.**

Quiesce Test

On a large system, the `quiesce-test` command (`cfgadm -x quiesce-test sysctrl0:slot`*number*) might run as long as a minute or so. During this time no messages are displayed if `cfgadm` does not find incompatible drivers. This is normal behavior.

Disabled Board List

If a board is on the disabled board list, an attempt to connect the board might produce an error message:

```
# cfgadm -c connect sysctrl0:slotnumber
cfgadm: Hardware specific failure: connect failed: board is
 disabled: must override with [-f][-o enable-at-boot]
```

1. **To override the disabled condition, use the force flag (`-f`) or the enable option (`-o enable-at-boot`) with the `cfgadm` command:**

```
# cfgadm -f -c connect sysctrl0:slotnumber
```

```
# cfgadm -o enable-at-boot -c connect sysctrl0:slotnumber
```

1. **To remove all boards from the disabled board list, set the `disabled-board-list` variable to a null set with the system command:**

```
# eeprom disabled-board-list=
```

1. **If you are at the OpenBoot prompt, use this OpenBoot PROM command instead of the previous one to remove all boards from the disabled board list:**

```
OK set-default disabled-board-list
```

For further information about the `disabled-board-list` setting, refer to the "Specific NVRAM Variables" section in the *Platform Notes: Sun Enterprise 3x00, 4x00, 5x00, and 6x00 Systems* manual in the documentation set in this release.

Disabled Memory List

For information about the OpenBoot PROM `disabled-memory-list` setting, refer to the section "Specific NVRAM Variables" in the *Platform Notes: Sun Enterprise 3x00, 4x00, 5x00, and 6x00 Systems* in the Solaris on Sun Hardware documentation set in this release.

Unloading Detach-Unsafe Drivers

If it is necessary to unload detach-unsafe drivers, use the `modinfo(1M)` line command to find the module IDs of the drivers. You can then use the module IDs in the `modunload(1M)` command to unload detach-unsafe drivers.

Interleaved Memory

A memory board or CPU/memory board that contains interleaved memory cannot be dynamically unconfigured.

1. **To determine if memory is interleaved, use the `prtdiag` command or the `cfgadm` command.**

1. **To permit DR operations on CPU/memory boards, set the NVRAM `memory-interleave` property to `min`.**

   For related information about interleaved memory, see "Memory Interleaving Set Incorrectly After a Fatal Reset (Bug ID 4156075)" on page 55 and "DR: Cannot Unconfigure a CPU/Memory Board That Has Interleaved Memory (Bug ID 4210234)" on page 55.

Self-Test Failure During a Connect Sequence

If the error "`cfgadm: Hardware specific failure: connect failed: firmware operation error`" is displayed during a DR connect sequence, remove the board from the system as soon as possible. The board has failed self-test, and removing the board avoids possible reconfiguration errors that can occur during the next reboot.

If you want to immediately retry the failed operation, you must first remove and reinsert the board, because the board status does not allow further operations.

Known Bugs

The following list is subject to change at any time. For the latest bug and patch information, refer to:

http://sunsolve5.sun.com/sunsolve/Enterprise-dr.

Memory Interleaving Set Incorrectly After a Fatal Reset (Bug ID 4156075)

Memory interleaving is left in an incorrect state when a Sun Enterprise *x*500 server is rebooted after a fatal reset. Subsequent DR operations fail. The problem only occurs on systems with memory interleaving set to `min`.

Workarounds: Two choices are listed.

1. **To clear the problem after it occurs, manually reset the system at the `OK` prompt.**

1. **To avoid the problem before it occurs, set the NVRAM `memory-interleave` property to `max`.**

   This causes memory to be interleaved whenever the system is booted. However, you might find this option to be unacceptable, as a memory board containing interleaved memory cannot be dynamically unconfigured. See "DR: Cannot Unconfigure a CPU/Memory Board That Has Interleaved Memory (Bug ID 4210234)" on page 55.

DR: Cannot Unconfigure a CPU/Memory Board That Has Interleaved Memory (Bug ID 4210234)

Cannot unconfigure a CPU/memory board that has interleaved memory.

To unconfigure and subsequently disconnect a CPU board with memory or a memory-only board, it is necessary to first unconfigure the memory. However, if the memory on the board is interleaved with memory on other boards, the memory cannot currently be unconfigured dynamically.

Memory interleaving can be displayed using the `prtdiag` or the `cfgadm` commands.

Workaround: Shut down the system before servicing the board, then reboot afterward. To permit future DR operations on the CPU/memory board, set the NVRAM `memory-interleave` property to `min`. See also "Memory Interleaving Set Incorrectly After a Fatal Reset (Bug ID 4156075)" on page 55 for a related discussion on interleaved memory.

DR: Cannot Unconfigure a CPU/Memory Board That Has Permanent Memory (Bug ID 4210280)

To unconfigure and subsequently disconnect a CPU board with memory or a memory-only board, it is necessary to first unconfigure the memory. However, some memory cannot currently be relocated. This memory is considered permanent.

Permanent memory on a board is marked "permanent" in the `cfgadm` status display:

```
# cfgadm -s cols=ap_id:type:info
Ap_Id Type Information
ac0:bank0 memory slot3 64Mb base 0x0 permanent
ac0:bank1 memory slot3 empty
ac1:bank0 memory slot5 empty
ac1:bank1 memory slot5 64Mb base 0x40000000
```

In this example, the board in slot3 has permanent memory and so cannot be removed.

Workaround: Shut down the system before servicing the board, then reboot afterward.

`cfgadm` Disconnect Fails When Running Concurrent `cfgadm` Commands (Bug ID 4220105)

If a `cfgadm` process is running on one board, an attempt to simultaneously disconnect a second board fails.

A `cfgadm` disconnect operation fails if another `cfgadm` process is already running on a different board. The message is:

```
cfgadm: Hardware specific failure: disconnect failed: nexus error
during detach: address
```

Workaround: Do only one `cfgadm` operation at a time. If a `cfgadm` operation is running on one board, wait for it to finish before you start a `cfgadm` disconnect operation on a second board.

Cannot Drain or Detach Sun Enterprise Server Boards That Host QFE Cards (Bug ID 4231845)

A server configured as a boot server for Solaris 2.5.1-based Intel platform clients runs several `rpld` jobs, whether or not such devices are in use. These active references prevent DR operations from detaching these devices.

Workaround: Perform a DR detach operation:

1. **Remove or rename the `/rplboot` directory.**
2. **Shut down NFS services with this command:**

```
# sh /etc/init.d/nfs.server stop
```

3. **Perform the DR detach operation.**
4. **Restart NFS services with this command:**

```
# sh /etc/init.d/nfs.server start
```

CHAPTER 6

Sun Enterprise 10000 Release Notes

This chapter contains the release notes for the following features on the Sun Enterprise 10000 server: Dynamic Reconfiguration (DR), InterDomain Networks (IDNs), and the Solaris operating environment on Sun Enterprise 10000 domains.

Dynamic Reconfiguration Issues

DR Model 3.0

You must use DR model 3.0 on Sun Enterprise 10000 domains that run the Solaris 9 12/03 operating environment or later. DR model 3.0 refers to DR functionality that uses the following commands on the SSP to perform domain DR operations:

- `addboard`(1M)
- `moveboard`(1M)
- `deleteboard`(1M)
- `showdevices`(1M)
- `rcfgadm`(1M)

In addition, you can run the `cfgadm`(1M) command on domains to obtain board status information. Note that DR model 3.0 also interfaces with the Reconfiguration Coordination Manager (RCM) to coordinate the DR operations with other applications running on a domain.

Note – DR model 3.0 is the only DR model supported for the Solaris 9 4/04 release. For details on DR model 3.0, refer to the *Sun Enterprise 10000 Dynamic Reconfiguration User Guide*.

General Issues

This section contains general issues that involve DR on the Sun Enterprise 10000 server. You should read this section before you attempt to install or configure DR.

DR and Bound User Processes

For Solaris 9 4/04, DR no longer automatically unbinds user processes from CPUs that are being detached. You are now required to perform this operation before initiating a detach sequence. The drain operation fails if CPUs are found with bound processes.

Enabling DR 3.0 Requires an Extra Step in Certain Situations (Bug ID 4507010)

If you upgrade or perform a fresh install of the Solaris operating environment on a domain before you upgrade the SSP to SSP 3.5, the domain will not be properly configured for DR 3.0.

Workaround: Run the following command as superuser on the domain, after the SSP has been upgraded to SSP 3.5. This workaround is not necessary until DR 3.0 is enabled on the domain.

```
# devfsadm -i ngdr
```

InterDomain Networks (IDN)

General Issues

For a domain to become part of an IDN, all boards in that domain that have active memory must have at least one active CPU.

Solaris Operating Environment

This section contains general issues, known bugs, patches, and notes about the Solaris 9 4/04 operating environment on the Sun Enterprise 10000 server.

General Issues

Dynamic reconfiguration (DR) and InterDomain Networks are supported in the Solaris 9 4/04 release.

Note – Before you begin the fresh installation or upgrade of the Solaris 9 4/04 operating environment on a Sun Enterprise 10000 domain, you must install SSP 3.5 on your System Service Processor. SSP 3.5 supports the Solaris 9 4/04 operating environment on Sun Enterprise 10000 domains.

Note – Do not use the Solaris 9 4/04 Installation CD to install or upgrade the Solaris operating environment on Sun Enterprise 10000 domains. Begin installation from the Solaris 9 4/04 Software 1 of 2 CD. You can follow the installation procedures described in the *Sun Enterprise 10000 SSP 3.5 Installation Guide and Release Notes*, if you substitute the Solaris 9 4/04 Software CDs for the Solaris 8 10/01 CDs.

Solaris 9 4/04 and Boot Disk Partition Sizes

If you are upgrading the operating environment from Solaris 2.6 to Solaris 9 4/04 and you used the partition layout suggested in the *SMCC Hardware Platform Guide Solaris 2.6*, the partitions might not be large enough for the upgrade. For instance, the `/usr` partition must be at least 653 megabytes. If `/usr` is smaller than the size needed to perform the upgrade, `suninstall` uses the Dynamic Space Reallocation (DSR) mode to reallocate the space of the disk partitions.

DSR might calculate a partition layout that is not acceptable for some systems. For instance, DSR might select partitions that appear to DSR as unused (non-UFS partitions that might contain raw data or other types of file systems). If DSR selects a used partition, data loss might occur. Therefore, you must know the current status of the partitions DSR wants to use before you allow DSR to continue with the reallocation of the disk partitions.

After DSR presents an acceptable layout and you choose to proceed with the reallocation, DSR adjusts the affected file systems, and the upgrade continues. However, if you cannot constrain the layout so that it is acceptable for your needs, then you might need to manually repartition the boot device, or you might have to perform a fresh installation.

OpenBoot PROM Variables

Before you perform the `boot net` command from the OpenBoot PROM prompt (`ok`), you must verify that the `local-mac-address?` variable is set to `false`, which is the factory default. If the variable is set to `true`, you must ensure that this value is an appropriate local configuration.

Note – If `local-mac-address?` is set to true, it might prevent the domain from successfully booting over the network.

In a `netcon`(1M) window, you can use the following command at the OpenBoot PROM prompt to display the values of the OpenBoot PROM variables:

```
ok printenv
```

▼ To Set the `local-mac-address?` Variable

1. **If the variable is set to `true`, use the `setenv` command to set it to `false`.**

```
ok setenv local-mac-address? false
```

CHAPTER 7

Dynamic Reconfiguration on Sun Fire High-End Systems

This chapter describes major domain-side dynamic reconfiguration (DR) bugs on Sun Fire high-end (Sun Fire 25K/20K/15K/12K) systems running Solaris 9 4/04 software.

For information about SMS-side DR bugs, see the *SMS Release Notes* for the version of SMS running on your system.

Known Software Bugs

`memscrubber` Periodically Runs Nonstop with Big Mem, Interferes with DR (BugID 4647808)

Description: When a domain is configured with a large amount of memory (340 Gbytes or more), either at boot time or due to subsequent DR operations, the memory scrubbing thread monopolizes a particular system lock for 60 to 90 minutes once every 12 hours. Any DR operation that attempts to configure or unconfigure memory in the domain during one of these windows hangs until the system lock is released. As long as a DR operation remains hung for this reason, any additional DR operations also hang.

Workaround: This problem resolves on its own within 90 minutes. To avoid it, add the following line to the `/etc/system` file prior to booting:

```
set memscrub_span_pages = 0x3000
```

Deleteboard Shows Leakage Error (BugID 4730142)

Description: When a DR command is executing on a system configured with the Freshchoice card (also called SunSwift PCI card, Option 1032), the system may display messages similar to the following:

```
Aug 12 12:27:41 machine genunix: WARNING:
 vmem_destroy('pcisch2_dvma'): leaked
```

These messages are benign; the DVMA space is properly refreshed during the DR operation. No true kernel memory leak occurs. This bug affects domains running both Solaris 8 and Solaris 9 operating environments.

Workaround: No workaround is necessary, but to prevent the message from displaying, add the following line to `/etc/system`:

```
set pcisch:pci_preserve_iommu_tsb=0
```

`glm`: Hang in `scsi_transport` During DR (BugID 4737786)

Description: A `cfgadm(1M)` unconfigure operation on permanent memory executed on a system with a `glm` driver that is active may hang. The problem is specific to DR operations involving permanent memory, which require that the system be quiesced via `suspend/resume`. The problem lies with the `glm` driver. This bug affects domains running both Solaris 8 and Solaris 9 operating environments.

Workaround: Do not unconfigure permanent memory in the system if the `glm` driver is active.

System Panic During `ddi_attach` sequence (BugID 4797110)

Description: Unconfiguring a hsPCI or hsPCI+ I/O board while a PCI option card is being configured into it causes a system panic. For example, the panic would occur if the following commands were executed simultaneously. In this example, `pcisch18:e03b1slot2` is one of the four PCI Slots on IO3:

- cfgadm -c unconfigure IO3
- cfgadm -c configure pcisch18:e03b1slot2

Workaround: Do not execute a PCI hotplug operation while a hsPCI or hsPCI+ I/O board is being unconfigured.

Panic: `mp_cpu_quiesce`: `cpu_thread != cpu_idle_thread` (BugID 4873353)

Description: Under certain error conditions, using DR to unconfigure a processor can leave that processor in the powered-off state. If `psradm`(1M) is then used to transition the processor to the off-line state, a system panic may result. Factors contributing to the problem are that Solaris does not expect processors to be in the powered-off state long-term, and `psradm`(1M) does not allow transitioning of processors to the powered-off state.

Workaround: Do not use `psradm(1M)` to offline a processor that is in the powered-off state.

Rated Proc Speed Used Instead of Actual with DR Operation on Sun Fire High-End Systems (BugID 4964679)

Description: Processors added using DR are shown by various tools as running at the processor's rated frequency rather than its actual frequency. In most cases, the rated and actual frequencies for a processor are the same. Processors present in the system at boot display the correct, actual frequency.

Workaround: None.

Failed to Indict L2 Cache on a Sun Fire E25K/E20K When the Board was Configured via DR (BugID 4984562)

Description: If automatic processor removal is enabled on a Sun Fire E25K/E20K system, an event notifying the system controller that a processor has been offlined due to L2 cache errors may not get delivered if the board was added using DR. The process of offlining the processor on the domain is not affected. Boards present in the domain at boot do not experience this problem.

Workaround: None.

cfgadm_sbd Plugin Signal Handling Is Broken (BugID 4498600)

Description: Sending a catchable signal, such as `SIGINT` sent by `CTRL-C`, to one or more `cfgadm` instances can cause those instances to hang. The problem is more likely to occur when multiple `cfgadm` processes are running, and can affect `cfgadm` instances on system boards, processors, I/O boards, and PCI slot attachment points. The problem has not been observed with a `SIGKILL`, and does not affect `cfgadm` status commands.

Workaround: None. To avoid this bug, do not send a catchable signal to a `cfgadm` process invoked to change the state of a component; for example, one executed with its `-c` or `-x` option.

page_retire Does Not Update Retired Page List in Some Cases (BugID 4893666)

Description: If non-permanent memory is unconfigured, the system removes retired pages from the retired pages list to prevent them from becoming dangling pages - that is, pages that point to physical memory that would have been unconfigured.

When permanent memory is unconfigured, a target board is identified and unconfigured first. Once a target board is ready, the contents of the source board (the permanent memory) are copied to the target board. The target board is then "renamed" (memory controllers are programmed) to have the same address range as the source board. What this means is that if the source board contained any retired pages, these pages would not be dangling pages after the rename. They would point

to valid addresses, but the physical memory behind those addresses is in the target board. The problem is that the physical memory is probably good (does not contain ECC errors).

Workaround: None.

Page Removal Causes a Good Page to be Removed After a DR Operation (BugID 4860955)

Description: The automatic page removal feature may result in removal of a good page after a DR operation.

Workaround: Disable `automatic_page_removal`.

Known Hardware Bugs

GigaSwift Ethernet MMF Link Goes Down With CISCO 4003 Switch After DR Attach (BugID 4709629)

Description: Attempting to execute a DR operation on a system with Sun GigaSwift Ethernet MMF Option X1151A, part number 595-5773, attached to certain CISCO switches causes the link to fail. The problem is caused by a known bug in the following CISCO hardware/firmware:

- CISCO WS-c4003 switch (f/w: WS-C4003 Software, Version NmpSW: 4.4(1))
- CISCO WS-c4003 switch (f/w: WS-C4003 Software, Version NmpSW: 7.1(2))
- CISCO WS-c5500 switch (f/w: WS-C5500 Software, Version McpSW: 4.2(1) and NmpSW: 4.2(1))

This problem is not seen on CISCO 6509 switch.

Workaround: Use another switch or consult Cisco for a patch.