Solaris™ 9 8/03 Release Notes Supplement for Sun™ Hardware

Solaris 9 8/03

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

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Contents

Late-Breaking News

This manual provides the following information:

- Late-breaking news (this chapter)
- End-of-support and future end-of-support statements (Chapter 2)
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- Sun Fire™ 6800/4810/4800/3800 open issues (Chapter 4)
- Sun Enterprise™ midrange system open issues (Chapter 5)
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Release Notes Update

New information that becomes available between the time this document goes to press and the release of the Solaris™ 9 8/03 operating environment is outlined in this section.

SunVTS `fputest` Fails on Certain Locales Other Than English (BugID 4888506)

The `fputest` fails if performed in a locale that uses a `decimal_point` other than a dot "." character. See the online manual page for `localconv(1M)` for details about `decimal_point`.

Note – This issue might also occur in SunVTS 5.1 PS2.

Workaround: Install Patch 114479-11.

Using SunVTS `sutest` and `disktest` Simultaneously (BugID 4858028)

If `sutest` and `disktest` are performed simultaneously on a Sun Blade 100 or 150 system, SunVTS might report `sutest` failures or warning messages similar to the following:

```
07/11/03 16:35:58 dt214-175 SunVTS5.1ps2: VTSID 6003
 sutest.WARNING
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`.

Note – This issue might also occur in SunVTS 5.1, SunVTS 5.1 PS1, and SunVTS 5.1 PS2.

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

Sun StorEdge A1000 Support

Software support for the Sun StorEdge™ A1000 array might not be provided in a future release of the Solaris operating environment.

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 8/03 Software Supplement*. Past and present documentation may refer to this as simply the "Supplement CD."

Sun Fire V250 Supported

Although it is not listed in the Solaris 9 8/03 Sun Hardware Platform Guide, the Sun Fire V250 platform is supported in Solaris 9 8/03. Its information is as follows:

- Platform name: `SUNW,Sun-Fire-V250`
- Platform group: `sun4u`
- 64-bit platform
- Does not support a 32-bit kernel/driver

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

Note – The JumpStart installation option is not supported on the Sun Fire V250 in this release.

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 8/03 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 8/03 Sun Hardware Platform Guide*.

Unbundled Product Support

Although the Solaris™ 9 8/03 software is designed and tested to be compatible with previous releases, some applications may 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 8/03 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 8/03 operating environment.
- Acquire and install a new version of the unbundled product that is supported on the Solaris 9 8/03 operating environment. Note that in this case you may need to remove the previous version of the unbundled product prior to upgrading to the Solaris 9 8/03 operating environment. See the unbundled product documentation for more details.
- Remove the unbundled product prior to upgrading to the Solaris 9 8/03 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 8/03 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 8/03 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` 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 floppy disk 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 floppy, simply 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.

Maintenance Update CD

Future updates to the Solaris operating environment might no longer include the Maintenance Update (MU) CD. The preferred mechanism for updating a Solaris release—for example, to update from the Solaris 8 6/00 operating environment to the Solaris 8 1/01 operating environment—is to use the "upgrade" mechanism (see the *Solaris 9 Advanced Installation Guide, SPARC Platform Edition*). The MU CD does not include all of what comprises a Solaris update, and takes longer to install than an upgrade.

In cases where the MU method is still considered necessary, you can obtain the MU image from the SunSolve[SM] web site at: `http://sunsolve.sun.com`.

Dynamic Reconguration on Sun Fire 15K/12K Systems

The Dynamic Reconfiguration (DR) feature has been enhanced to support reconfiguration of hsPCI assemblies and MaxCPU boards. These resources can be reconfigured on Sun Fire 15K/12K domains running later versions of the Solaris

operating system. Solaris 9 4/03 is the first release of the Solaris 9 OS to support this enhancement, and Solaris 8 2/02 is the first release of the Solaris 8 OS to do so. For more information, please see:

`http://www.sun.com/servers/highend/dr_sunfire/slot1_dr.html`

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 8/03 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
```

SunFDDI and SunHSI/S Drivers

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

Future End-of-Support Products

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

ShowMe TV

ShowMe TV™ will no longer be supported as of the next Solaris update release.

`le` Drivers

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

SPC Driver

The SPC SBus interface card driver may 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 may 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 L1800 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 A3000, Sun StorEdge A3500, and Sun StorEdge A3500FC 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

Solaris Maintenance Updates

The separate patch collections provided in conjunction with the Solaris Update Releases, the Solaris Maintenance Updates (MUs), might not be made available at future releases.

Open Issues

This chapter discusses:

- ■ "Application-Specific Issues" on page 13
- ■ "Platform-Specific Issues" on page 32
- ■ "Other Issues" on page 35

Application-Specific Issues

SunScreen SKIP 1.1.1 Not Supported in Solaris 9 8/03 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 8/03 operating environment. The packages you should remove are: `SICGbdcdr, SICGc3des, SICGcdes, SICGcrc2, SICGcrc4, SICGcsafe, SICGes, SICGkdsup, SICGkeymg, SICGkisup`.

SunVTS 5.1 Patch Set 3 (PS3) Issues

The following issues apply to the SunVTS™ 5.1 PS3 product.

New Features and Tests for This Release

The SunVTS 5.1 PS3 software is compatible with Solaris 8 2/02, Solaris 8 HW 12/02, Solaris 8 HW 5/03, Solaris 8 HW 7/03, Solaris 9, Solaris 9 9/02, Solaris 9 12/02, and Solaris 9 4/03, and Solaris 9 8/03 operating environments. The following new features and tests are added to the SunVTS 5.1 PS3 release:

- Level 2 sram test (`l2sramtest`) – Tests the functionality of the Level 2 sram.
- Multiprocessing hardware test (`cmptest`) – Verifies the functionality of multiprocessing hardware.

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

Note – All new features, tests, and test enhancements that are released in SunVTS 5.1 PS3 are documented in the *SunVTS 5.1 Patch Set 3 Documentation Supplement* (817-2116-05). 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 3 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`) will be discontinued in a future release of SunVTS.

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 not supported in SunVTS 5.1.

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.

- 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 HW 7/03 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, or Solaris 8 HW 7/03. If you choose to install SunVTS 5.1 or later on either 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, or Solaris 8 HW 7/03 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 either the Solaris 8 HW 12/02, Solaris 8 HW 5/03, or Solaris 8 HW 7/03 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, or Solaris 8 HW 7/03 Software Supplement CD-ROM.

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

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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, or Solaris 8 HW 7/03 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, or Solaris 8 HW 7/03.

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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, and Solaris HW 7/03. 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, nor Solaris 8 HW 7/03.

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.

Possible Runtime Issues

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.

Using `pkginfo -c sunvts` Command

The command `pkginfo -c sunvts` does not produce any output in SunVTS 5.1. This is to correctly implement the semantics of 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
```

Testing Systems Under High Stress (Bug ID 4827599)

Timeout errors might occur when performing `netlbtest` on Sun Fire systems that have excessive loads incurred from non-network tests that are being performed concurrently. The timeout errors could be caused by the current workload if the packets are held up because of waiting for CPU resources.

In addition, these timeout errors could occur because SunVTS tests are performed at the application level; thus, when a packet is lost or stuck anywhere below the application level, `netlbtest` will report a packet has not been received within the timeout time.

Workaround: Increase the timeout value from the default of 10 seconds to 120 seconds.

Multiple Instances of `fputest` (RFE ID 4741204)

In SunVTS 5.1 PS3 and later releases, a certain number of instances of `fputest` may run in Exclusive test mode in parallel. Note that no two different tests can run in Exclusive mode at the same time. However, the same test can run in parallel on different devices in Exclusive mode. This test-based parallelism is currently available for `fputest` only. The concurrency of `fputest` in Exclusive mode is dynamically set with an optimal value depending on the system resources and is not user-configurable. All other tests, are not executed in parallel even if the device has multiple instances; instead, the instances are executed in sequence.

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.

Connection to `vtsk` (Bug ID 4861855)

Connection to `vtsk` might get lost when trying to connect remotely from another system.

Test Probe Fails if DVD-RW Media Is Inserted in the DVD Drive (Bug ID 4870525)

The SunVTS test probe might fail with a segmentation violation when a DVD-RW media is inserted in the DVD drive.

Workaround: Use DVD-ROM media to test the DVD drive.

Using `env4test` *and* `alarmtest` *(Bug ID 4861785)*

Performing `env4test` and `alarmtest` in parallel may cause a core dump.

Workaround: Do not perform `env4test` and `alarmtest` in parallel.

Preset Value of DELAY (Bug ID 4836812)

The `DELAY` value in the Test Parameter Options dialog box might not reflect the preset value of `DELAY`.

Sun Remote System Control (RSC) 2.2.1 Release Notes

This document deals with Sun Remote System Control (RSC) 2.2.1 hardware and software issues.

What's New in RSC 2.2.1

Several new features not documented in the *Sun Remote System Control (RSC) 2.2 User's Guide* are available in RSC 2.2.1:

■ 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 the 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 may 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 operating environment requirements. You must install and configure the RSC software before you can use RSC.

You can install the RSC 2.2.1 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 2.2.1 product
- A Sun Fire 280R server running the Solaris 8 1/01 operating environment or another Solaris version that supports the RSC 2.2.1 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 2.2.1 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 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/
```

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) 2.2.1 issues.

RSC General Issues

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

Removing and Installing the RSC Card

Caution – 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.

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. The workaround is to 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 allows 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 workstation, `rsc-console` reverts to the serial (Tip) connection after Solaris restarts, even if you have previously redirected the console to RSC.

If this occurs, 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 Website. 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 (Bug ID 4387587)

In rare instances, the system might bypass the RSC card during startup. 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 (Bug ID 4343998, 4316483)

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.

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 may 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.

You can 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 (Bug ID 4409169)*

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

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 (Bug ID 4409169)*

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

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 `boot -s` command directly.

Change to the `serial_hw_handshake` *Variable Requires a System Reboot (Bug ID 4145761)*

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 which 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

Patch Required to Run WDR

A patch is required on domains that use WDR and run the base release of the Solaris 9 operating environment. For such domains, download the latest version of PatchID 112945 from `http://sunsolve.sun.com` and use the `patchadd(1M)` command to install it. The Solaris 8 2/02 and Solaris 9 9/02 releases are the first Solaris releases to incorporate the fix and not require the patch.

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 6800/4810/4800/3800 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 SunMC 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.

Bugs Fixed in PatchID 113507

The bugs listed in this section are fixed in PatchID 113507, which can be downloaded and installed from http://sunsolve.sun.com.

Passing Invalid Logical ID to CHSystemBoardProvider *Generates Misleading Message (Bug ID 4656485)*

If a CIMObjectPath of a Solaris_CHSystemBoard instance contains an invalid logical ID and invokeMethod is called with methodName set to PowerOn or PowerOff, a CIMException is issued which says that the user does not have permission to power on or power off the CHSystemBoard. The message does not mention that an invalid logical ID prevented the operation.

Original User of Provider Affects Subsequent Users' Access (Bug ID 4724154)

Even though CIMOM reuses WDR providers, each WDR provider is forever associated with the first user who connected to it, and assigns to any subsequent user the permissions of its original user.

Calling invokeMethod() *With Invalid Logical ID Causes WBEM to Crash (Bug ID 4736314)*

When calling invokeMethod(), you must use a valid logical ID. Using an invalid logical ID causes WBEM to crash.

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
```

PC Launcher

PC Launcher Cannot Execute `sunpci` Command (Bug ID 4778019)

The SunPCi II software package (`SUNWspci2`) is installed in a different location than the PC launcher software expects. A path must be changed to allow execution of SunPCi II software through PC launcher.

Workaround:

1. Become superuser.

2. Open your `dejaVu.dt` file, located at:

   `/usr/dt/appconfig/types/`*locale*`/dejaVu.dt`

   Where *locale* is the default locale of your system.

3. Modify the 'EXEC_STRING' entry:

   From: `EXEC_STRING /bin/sh -c '/opt/SUNWspci/bin/sunpci'`

   To: `EXEC_STRING /bin/sh -c '/opt/SUNWspci2/bin/sunpci'`

Platform-Specific Issues

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 may 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.

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

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

4. 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 May Cause Panic in Sun StorEdge T3 (Bug ID 4319812)

A Sun StorEdge T3 system may 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 May Fail After Repeated Hotplug 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 board 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 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.

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 per 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.

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

Booting From Partitions Greater Than 2 Gbytes (Bug ID 1234177)

Due to PROM limitations, not all sun4m architectures boot from partitions greater than 2 Gbytes. These systems fail with the following message:

```
bootblk: can't find the boot program
```

Note – All sun4u architectures support booting from larger partitions.

One related bug (4023466) reports a problem with `re-preinstall` where the boot image for large disks creates root partitions greater than 2 Gbytes. System administrators are cautioned not to use `re-preinstall` on sun4m systems with large root disks (4 Gbytes and greater).

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 8/03 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 8/03 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 May 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 pulled from the port 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 Nondetachable (Bug ID 4452438)

Pulling the fibre cable going to controller A0 on an A5000 causes any subsequent DR operation to detach the system board to fail. Reconnecting the fibre cable does not allow 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 assert:

```
qlc_enable_pm = 0
```

Devices May Not Appear After Boot (Bug ID 4456545)

`qlc` may 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 May 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 May Not Complete Initialization (Bug ID 4625849)

On boot, multiple instances may not connect to their LANE instance if more than eight LANE instances are on a single adapter. This bug does not manifest 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 May Fail on Drives Above 96 Gbytes (BugID 4724529)

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

Workaround: Begin Solaris installation using the Solaris 9 8/03 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.

Open Issues for Sun Fire 6800/4810/4800/3800 Systems

This chapter describes open issues related to the use of the Solaris operating environment on Sun Fire 6800/4810/4800/3800 systems.

Dynamic Reconfiguration on Sun Fire 6800/4810/4800/3800 Systems

Dynamic reconfiguration (DR) is supported for Solaris 9 8/03. This section includes open issues for DR on the Sun Fire 6800/4810/4800/3800 systems at the time of this release.

These release notes for dynamic reconfiguration (DR) on Sun Fire 6800, 4810, 4800, and 3800 systems cover the following topics:

- "Dynamic Reconfiguration Software Installation Instructions" on page 42
- "Known DR Limitations" on page 42
- "Dynamic Reconfiguration Software Bugs" on page 46

System-Specific DR Support

System-specific DR support on the 6800/4810/4800/3800 systems is shown by the `cfgadm` command. System boards are indicated as class "sbd." CompactPCI (cPCI) cards are shown as class "pci." Users of DR through the `cfgadm` interface see other DR classes as well.

For more information about system-specific problems with DR, see "Known Dynamic Reconfiguration Bugs" on page 47.

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

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

Dynamic attachment points may also be listed by using the `cfgadm` command's `-a` option. To determine the class of a specific attachment point, add it as an argument to the above command.

Dynamic Reconfiguration Software Installation Instructions

The following software supports DR on Sun Fire 6800/4810/4800/3800 servers: version 9 of the Solaris operating environment, and version 5.13.0 of the system firmware.

In addition, you have the option of installing the Sun Management Center (SunMC). Refer to the *Sun Management Center 3.0 Supplement for Sun Fire 6800, 4810, 4800, and 3800 Systems* for complete instructions.

Upgrading the System Firmware

An upgrade of the system firmware for the Sun Fire 6800/4810/4800/3800 servers takes place through an FTP or HTTP connection from an FTP or HTTP server where the firmware images are stored.

For information on installing the firmware, refer to the `README` and `Install.info` files included in the patch appropriate for the version of firmware running on your domains. You can download Sun patches from `http://sunsolve.sun.com`.

Known DR Limitations

This section contains known DR software limitations of the Sun Fire 6800, 4810, 4800, and 3800 systems.

General DR Limitations

- If you add a system board to a domain without using DR procedures, such as by running the `addboard` command-line interface (CLI) command on the system controller (SC), you must run the `setkeyswitch off` command and then the `setkeyswitch on` command to bring the board into the system.

- 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 6800, 4810, 4800, and 3800 systems, DR does not support HIPPI/P (bug 4445932), SAI/P (bug 4466378), or the HSI/P driver (bug 4496362).
- 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 may 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.

Procedures for Bringing a cPCI Network Interface (IPMP) Online or Offline

▼ To Take a cPCI Network Interface (IPMP) Offline and Remove It

1. Retrieve the group name, test address, and interface index by typing the following command.

```
# ifconfig interface
```

For example, ifconfig hme0

2. Use the if_mpadm(1M) **command as follows:**

```
# if_mpadm -d interface
```

This command takes the interface offline, and causes its failover addresses to be failed over to another active interface in the group. If the interface is already in a failed state, then this step simply marks and ensures that it is offline.

3. (Optional) Unplumb the interface.

This step is required only if you want to use DR to reconfigure the interface automatically at a later time.

4. Remove the physical interface.

Refer to the cfgadm(1M) man page and the *Sun Fire 6800, 4810, 4800, and 3800 Systems Dynamic Reconfiguration User Guide* for more information.

▼ To Attach and Bring Online a cPCI Network Interface (IPMP)

1. **Attach the physical interface.**

   Refer to the cfgadm(1M) man page and the *Sun Fire 6800, 4810, 4800, and 3800 Systems Dynamic Reconfiguration User Guide* for more information.

   After you attach the physical interface, it is automatically configured using settings in the hostname configuration file (/etc/hostname.*interface*, where *interface* is a value such as hme1 or qfe2).

   This triggers the in.mpathd daemon to resume probing and detect repairs. Consequently, in.mpathd causes original IP addresses to failback to this interface. The interface should now be online and ready for use under IPMP.

Note – If the interface has not been unplumbed and set to the OFFLINE status prior to a previous detach, then the attach operation described here would not automatically configure it. To set the interface back to the ONLINE status and failback its IP address after the physical attach is complete, enter the following command: if_mpadm -r *interface*

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.

Dynamic Reconfiguration Software Bugs

This section contains the synopses and Sun Bug ID numbers of the more important bugs that have been discovered during testing of Dynamic Reconfiguration (DR). This list does not include all bugs.

Bugs Fixed Since the Last Release

- DR operations hang after a few loops when CPU power control is also running (Bug ID 4114317)
- Test case `libcfgadm_031_040` hangs on `fc_request_cv` (Bug ID 4633009)
- Cannot run DR and PPP daemon concurrently (Bug ID 4638018)

Known Dynamic Reconfiguration Bugs

- SBM sometimes can cause system panic during DR operations (Bug ID 4506562)

  Description: A panic may 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 Patch01.

- `cfgadm_sbd` plug-in in multithreaded environment is broken (Bug ID 4498600)

  Description: When a multithreaded client of the `cfgadm` library issues concurrent `sbd` requests, the system may hang.

  Workaround: None. Currently there are no existing applications implementing multithreaded usage of the `cfgadm` library.

- CPU/memory board `unconfig` takes a long time to complete with Oracle/TPCC load (Bug ID 4632219)

  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.

Sun Enterprise Midrange Systems Open Issues

This chapter contains the latest information for the Sun Enterprise systems running the Solaris 9 8/03 operating environment. These include the Sun Enterprise 6500, 6000, 5500, 5000, 4500, 4000, 3500, and 3000 systems.

The Solaris 9 8/03 operating environment includes support for all CPU/memory boards and most I/O boards in the systems mentioned above.

Dynamic Reconfiguration of 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 8/03 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 8/03 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 may 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]
```

- **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
```

- **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=
```

- **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 section "Specific NVRAM Variables" 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.

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

- **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 53 and "DR: Cannot Unconfigure a CPU/Memory Board That Has Interleaved Memory (Bug ID 4210234)" on page 53.

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.

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

● **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 53.

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 53 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 is not currently relocatable. 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 and/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
   ```

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 8/03 operating environment. 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 8/03 release. For details on DR model 3.0, refer to the *Sun Enterprise 10000 Dynamic Reconfiguration User Guide* (part number 816-3627-10).

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 8/03, DR no longer automatically unbinds user processes from CPUs that are being detached. Users are now required to perform this operation themselves 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 8/03 operating environment on the Sun Enterprise 10000 server.

General Issues

Dynamic reconfiguration (DR) and InterDomain Networks are supported in the Solaris 9 8/03 release.

Note – Before you begin the fresh installation or upgrade of the Solaris 9 8/03 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 8/03 operating environment on Sun Enterprise 10000 domains.

Caution – Do not use the Solaris 9 8/03 Installation CD to install or upgrade the Solaris operating environment on Sun Enterprise 10000 domains. Begin installation from the Solaris 9 8/03 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 8/03 Software CDs for the Solaris 8 10/01 CDs.

Solaris 9 8/03 and Boot-Disk Partition Sizes

If you are upgrading the operating environment from Solaris 2.6 to Solaris 9 8/03 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 install.

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 it is set to `true`, you must ensure that this value is an appropriate local configuration.

Caution – 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
```

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