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Solaris 9 Release Notes Supplement for Sun Hardware

Solaris 9

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)
■ Descriptions of documentation formats and locations (Chapter 2)
■ End-of-support and future end-of-support statements (Chapter 3)
■ Open issues (Chapter 4)
■ Sun Fire 6800/4810/4800/3800 open issues (Chapter 5)
■ Sun Enterprise midrange system open issues (Chapter 6)
■ Sun Enterprise 10000 server issues (Chapter 7)

Release Notes Update

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

Installer CD vs DVD Installer

The Installer CD installs the products from the Software Supplemental CD a little differently than an installation from the Solaris DVD. The Installer CD displays a predefined set of products that are installed by default from the Software Supplemental CD. The installation process on the Solaris DVD, however, does not select any of the Software Supplemental CD contents by default. Using the DVD, you must choose whether you want to install all contents from the Software Supplemental CD, or install only the products you select.

Document Errata: Package Name

The package name listed for Swedish PDF documents is listed in Chapter 2 of this document as SUNWdpsvsw. The package name is actually SUNWdpsvshw.

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 OBP version 4.0.9 or later, no action is needed.

2. If the OBP 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 OBP version 4.0.9 or later.

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

HTML File Shows Garbage When Not In Traditional Chinese Locale (BugID 4672694)

The HTML file titled "Solaris 9 on Sun Hardware Documentation- zh_TW - PDF", which is installed as
/opt/sun_docs/zh_TW/solaris_9/SUNWdphshw/booklist.html, shows garbage characters if it is not viewed in the Traditional Chinese (zh_TW) locale.

Workaround: Set "Character Set" to the EUC-TW value in Netscape Navigator.

Default Installation and Custom Installation the Same (BugID 4655266)

In this release, the products on the Software Supplemental CD are not separated into individual installable components. Therefore, when you choose to install a product from the Software Supplemental CD, the results of the Default Install and Custom Install options are identical.

`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 ouput 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.

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

Unbundled Product Support

Although the Solaris 9 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 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 operating environment.
- Acquire and install a new version of the unbundled product that is supported on the Solaris 9 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 operating environment. See the unbundled product documentation for more details.
- Remove the unbundled product prior to upgrading to the Solaris 9 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 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 software.

The only systems that may 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* 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 may 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 (BugID 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 may 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, but 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 Web at: `http://sunsolve.sun.com`.

Documents on the Computer Systems Supplement CD

This chapter is a supplement to the documentation chapter in the *Solaris 9 Sun Hardware Platform Guide*.

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 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.

Many manuals that have been provided in separate AnswerBook2 packages are now grouped together as a set of books in a common directory structure. Each set of manuals includes an HTML file, called `booklist.html`, that provides direct links to each of the books in the set.

This chapter describes where to find the documents on the Supplement CD, and ways you can install and read the online manuals.

Note – The manuals provided on the Supplement CD, both English and localized, are also available at the `http://docs.sun.com` website.

AnswerBook2 Documentation and the Solaris 9 Release

None of the documentation about the Solaris 9 release is supplied in AnswerBook2 format. If you have AnswerBook2 documentation collections for other products you use, the AnswerBook2 server software that provides access to that documentation can continue to be used with the Solaris 9 release.

The Solaris 9 Documentation CDs in the kit provide the greater part of Solaris manuals in PDF and HTML formats. For information about reading the contents of those CDs, load the Documentation CD for English and European language documents and read the following file:

```
/cdrom/sol_9_doc_1of2/index.html
```

The contents of the Solaris 9 Documentation CDs and the Solaris 9 Software Supplement CD are also contained on the Solaris 9 Operating Environment DVD.

Documentation on the Supplement CD

Documentation files in PDF and HTML format are provided on the Supplement CD in the following directory:

```
Solaris_On_Sun_Hardware_Documentation/Product
```

Install the following packages to view the manuals:

TABLE 2-1 Solaris 9 Document Directories on the Supplement CD

Language	Format	Package	Comments
English	PDF	SUNWdpshw	The most complete set of manuals
English	HTML	SUNWdhshw	A subset of the manuals in SUNWdpshw
French	PDF	SUNWdpfrshw	The most complete set of French manuals
French	HTML	SUNWdhfrshw	A subset of the manuals in SUNWdpfrshw
German	PDF	SUNWdpdeshw	The most complete set of German manuals
German	HTML	SUNWdhdeshw	A subset of the manuals in SUNWdpdeshw
Italian	PDF	SUNWdpitshw	The most complete set of Italian manuals

TABLE 2-1   Solaris 9 Document Directories on the Supplement CD *(Continued)*

Language	Format	Package	Comments
Italian	HTML	SUNWdhitshw	A subset of the manuals in SUNWdpitshw
Spanish	PDF	SUNWdpesshw	The most complete set of Spanish manuals
Spanish	HTML	SUNWdhesshw	A subset of the manuals in SUNWdpesshw
Swedish	PDF	SUNWdpsvsw	The most complete set of Swedish manuals
Swedish	HTML	SUNWdhsvshw	A subset of the manuals in SUNWdpsvsw
Japanese	PDF	SUNWdpjashw	The most complete set of Japanese manuals
Korean	PDF	SUNWdpkoshw	The most complete set of Korean manuals
Traditional Chinese	PDF	SUNWdphshw	The most complete set of Traditional Chinese manuals
Simplified Chinese	PDF	SUNWdpcshw	The most complete set of Simplified Chinese manuals

Note – The package SUNWdhjashw, containing Japanese HTML documents, is not included in this Solaris release. Mention of this package in the *Solaris 9 Sun Hardware Platform Guide* is in error.

Install these packages as you would any other software on the Supplement CD. See the *Solaris 9 Sun Hardware Platform Guide* for details.

These documentation sets include manuals that were part of separate AnswerBook2-format collections in releases earlier than the Solaris 9 release. These older AnswerBook2 collections include the following:

- Solaris on Sun Hardware Collection (SUNWabhdw)
- Sun Enterprise 10000 SSP Collection (SUNWuessp)
- Sun Enterprise 10000 Capacity On Demand Collection (SUNWcodbk)
- OpenBoot Collection (SUNWopen)

The Product directory also contains a package named SUNWdocs, which contains software used during installation as needed to provide an easy-to-use link for the PDF and HTML documentation sets you install.

You can also read PDF and HTML documents directly from the Supplement CD. At the top level of this CD, the Docs directory contains a file named index.html that links to all collections.

Accessing Documents from the Installed Packages

Each of the document packages you install contains a file named `booklist.html`. When you read this HTML file in a browser, it provides links to each of the books in that directory.

When you install a PDF or HTML documentation set in any language, a link to the `booklist.html` file for that set is automatically added to the following file:

`/var/opt/sun_docs/sundocs.html`

View that HTML file in your browser and follow the links to any documentation set installed on your system.

Note – If you need software that can display PDF-format files, you can download or order the Adobe Acrobat Reader program from `http://www.adobe.com`.

End-of-Support Products

Products Not Supported in the Solaris 9 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 retired in favor of the newer, more scalable technologies presented by 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 utilize these newer technologies for I/O multipath control.

Future End-of-Support Products

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

PC File Viewer

PC File Viewer may no longer be supported in a future release.

ShowMe TV

ShowMe TV may no longer be supported in a future release.

FDDI, HSI/S, `le`, and Token Ring Drivers

FDDI/S, FDDI/P, HSI/S, `le`, SBus Token Ring, and PCI bus Token Ring network drivers may no longer be supported in a future release.

SPC Driver

The SPC S-Bus interface card driver may no longer be supported in a future release. The SPC card is a Serial Parallel Controller (S-Bus, 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

Open Issues

Application-Specific Issues

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

SunVTS 5.0 Issues

The following issues apply to the SunVTS 5.0 product.

New Features for This Release

The following feature has been added to the SunVTS 5.0 release:

- The deterministic scheduler feature is supported in the SunVTS TTY UI.

Refer to the *SunVTS 5.0 User's Guide* and the *SunVTS 5.0 Test Reference Manual* for more details about this new feature.

Features No Longer Available

The following features are no longer available in this version of SunVTS:

- SunVTS OPEN LOOK UI
- The old SunVTS message format, and the variable VTS_OLD_MSG
- The stress mode option in the Test Execution dialog box
- The sunpcitest
- The isdntest
- The dpttest
- Token Ring
- SunButtons™ and SunDials™

Possible Installation Problems

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 paragraphs.

Installation Problem:
32-bit Only Systems and Web Start 2.0 (BugID 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 5.0 User's Guide*.

Installation Problem:
Security and Web Start 2.0 (BugID 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 5.0 User's Guide*.

Installation Problem:
The Installation Directory With Web Start 2.0 Is Not User-Definable
(BugID 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 5.0 User's Guide.*

Installation Recommendation:
Perform Installations and Uninstallations Using the Same Program

If you install SunVTS using Web Start 2.0, you should also uninstall it using Web Start 2.0. If you install SunVTS with the pkgadd command you should uninstall it with the pkgrm command.

Possible Runtime Problems

Using sunvts *With the* -l *Option (BugID 4638685)*

The sunvts usage message shows -l (OPEN LOOK UI) as one of the available options. However, the OPEN LOOK environment is no longer supported. Therefore the -l option is no longer valid.

```
% ./sunvts -u
Usage: sunvts [-lepqstv][-f logdir][-h host][-o optfile][-display host:0]
```

Workaround: Do not use the -l option when using sunvts.

Using gfbtest*: Three Subtests Are Disabled*
(BugID 4644925)

The Stero, Cafe, and X Chip subtests have been temporarily disabled.

Workaround: There is no workaround for this release.

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 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/`

- 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 allows 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 environments:
  - 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 (BugID 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 (BugID 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 may 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 this 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 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 (BugID 4387587)

In rare instances, the system may 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 (BugID 4343998, 4316483)

When you power on the system, it may 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 (BugID 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.

There are three ways you can reset the host. Use 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 (BugID 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 (BugID 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 (BugID 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

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

Missing Pasted Text (Bug ID 4408940)

When pasting too much text in the whiteboard, some text does not show up on other participants' whiteboards.

New User Resets Page (Bug ID 4446810)

The whiteboard in SF1.0 mode flips back to page 1 when a new user joins the conference.

Platform-Specific Issues

Sun Enterprise Servers

Panic While Connecting Memory Board (Bug ID 4461517)

A Sun Enterprise midrange server may panic while running a dynamic reconfiguration (DR) connection for a memory board.

Workaround:

1. `ifconfig` down and unplumb any FDDI drivers.

2. Stop FDDI daemons by typing the command `S98nf_fddidaemon stop` and/or `S98pf_fddidaemon stop` as required.

3. `modunload` the `smt`, `nf`, `pf`, and other FDDI modules.

4. Perform any needed DR operations.

5. `modload` any `nf` or `pf` drivers. For example, for an `nf` driver, type the command `modload -p drv/sparcv9/nf`

6. Plumb and bring up any FDDI drivers.

7. Restart the FDDI daemon by typing `S98nf_fddidaemon start` and/or `S98pf_fddidaemon start` as appropriate.

Some Sun Enterprise Servers May Panic When Connecting System or Memory Boards (BugID 4522127)

Sun Enterprise™ servers (10000, 6500, 6000, 5500, 5000, 4500, 4000, 3500, and 3000) might panic when connecting system or memory boards using the Dynamic Reconfiguration feature. This panic only occurs if another system board or memory

bank has previously been disconnected from the domain which contains the lowest range of physical addresses in that domain. This bug does not affect the following Sun Fire™ servers: 15K, 6800, 4810, 4800, and 3800.

Workaround: There are two possible workarounds.

- Avoid disconnecting the system board or memory bank from the domain with the lowest physical address range of the domain.
- After disconnecting the system board or memory bank from the domain containing the lowest physical address range, reboot the domain before attempting to attach any additional memory, or boards containing memory, to the domain.

The following command shows how to determine which system board or memory bank contains the lowest physical address region:

```
# cfgadm -a -s "select=type(memory),cols=ap_id:o_state:info"
Ap_Id                             Occupant      Information
SB9::memory                       configured    base address 0x1600000000, 2097152
 KBytes total, 503152 KBytes permanent
SB11::memory                      configured    base address 0x1200000000, 2097152
 KBytes total
SB15::memory              configured   base address 0x0, 2097152 KBytes total
```

In the above example, on a Sun Enterprise 10000 system, SB15 contains 2GB at 0x0. This could cause a panic in the domain if it is removed and memory is later attached to the domain. It is safe to remove SB9 or SB11, whose memory is located at 0x1200000000 and at 0x1600000000.

A second example is the same command run on a Sun Enterprise 6500:

```
# cfgadm -a -s "select=type(memory),cols=ap_id:o_state:info"
Ap_Id                             Occupant      Information
ac0:bank0                         unconfigured slot0 256Mb base 0x0
ac0:bank1                         configured   slot0 256Mb base 0x10000000 permanent
ac1:bank0                         unconfigured slot4 empty
ac1:bank1                         configured   slot4 256Mb base 0x80000000
```

In the above example, it is safe to remove any bank except ac0:bank0, which could potentially cause a panic if additional memory is later attached.

Some Sun Enterprise Systems Fail to Configure CPUs Dynamically (BugID 4638234)

This bug affects Dynamic Reconfiguration on Sun Enterprise 6500, 6000, 5500, 5000, 4500, 4000, 3500 and 3000 servers.

When a newly added CPU/memory board is configured, the system fails to configure the CPUs on the board. The following example shows an attempt to configure a newly added CPU/memory board in slot 2:

```
# cfgadm -c configure sysctrl0:slot2
  cfgadm: Hardware specific failure: configure failed: No such
device
```

The following messages are recorded by syslog as a result of the above failure:

```
sysctrl: NOTICE: configuring cpu board in slot 2
sysctrl: NOTICE: cpu board in slot 2 partially configured
```

The system is still running normally, but the CPUs are not available for use. Memory on the newly configured board is available and may be configured for use.

Workaround: Reboot the system. The CPUs are now available for use.

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 (BugID 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 (BugID 4490002)

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

Workaround: Upgrade to 1.17a T3 firmware.

Sun Fire Systems

RCM May Fail After Repeated Hotplug Stress (BugID 4474058)

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

Sun Fire V880 Panics When Disconnecting HSI Card (BugID 4458402)

After system stress, the Sun Fire V880 might panic while disconnecting the HSI card from the system.

Workaround: Install patch 109715-04.

Documentation Errata

The following documentation errors have been found in the Solaris 9 documents.

`eri(7d)` Man Page

The `eri(7d)` man page incorrectly states that the `eri.conf` file is in the `/kernel/drv/sparcv9/eri.conf` file.

The correct location is: `/kernel/drv/eri.conf`

Platform Notes: Sun GigaSwift Ethernet Driver

In the English language version of the *Platform Notes: Sun GigaSwift Ethernet Device Driver*, several steps are mis-numbered on pages 15, 19, and 21. These errors are corrected in the Japanese language version.

System Management Services (SMS 1.2) Installation Guide and Release Notes

In the installation instructions for the *System Management Services (SMS 1.2) Installation Guide and Release Notes*, one Note only exists in the English and Japanese language versions of the document. The note does apply to all language versions of the software. This note should read: "Due to a late arrival in the software, you may see slight differences between the screen snapshots shown in the Installation Guide and what appears on your screen during installation."

Other Issues

Booting From Partitions Greater Than 2 Gbytes (BugID 1234177)

Due to PROM limitations, all sun4m architectures do not 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 Computer Systems Installer 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 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 (BugID 4177805)

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

FDDI Driver Does Not Complete Initialization (BugID 4473527)

When installing FDDI after reboot, the system warns that the minor name `nfm` does not match the network driver name `nf`.

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

```
* Turn off interface name checking
set sunddi_netifname_constraints=0
```

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 Xserver. The Xserver 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 Xserver.

`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: Use the `luxadm -e forcelip <dev>` command to reset the link:

Pulled Cable On A5X00 Leaves System Board Non-Detachable (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`.

DR Hangs When Used With CPU Power Control (Bug ID 4114317)

A configuration with PCI buses may see Dynamic Reconfiguration operations hang after a few loops when CPU power control is also running.

Workaround: Do not invoke DR and psradm(1) operations in parallel.

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 OBP'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 OBP
■ Before switching, raise pil to f with the following command:

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

ASSERTION Failure When Running An I/O Load Test (Bug ID 4416839)

The system hits an ASSERTION failure when running an I/O load test with fault injections on next-generation Fabric configuration systems.

System Panics When Using More Than One HBA Path (Bug ID 4418335)

When a device is configured for use over more than one HBA path, it exposes a race condition in multiple ports, which results in a panic.

Board Fails Connection When PCI FDDI Is Configured (Bug ID 4453113)

If you try to connect a board using the `cfgadm` command while a PCI FDDI (pf) card is up on another board, the connection fails with an error message.

Workaround: Shut down and unplumb all PCI FDDI networks.

Failed Assertion May Cause Panic (Bug ID 4329268)

If certain assertions fail in DEBUG kernels during trap tracing, the kernel may panic when it cannot complete a proper call.

Untagged Devices Incorrectly Supported (Bug ID 4460668)

The 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 (BugID 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 DVDROM 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 via OBP.

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).

DR Commands Hang Waiting For `rcm_daemon` While Running `ipc`, `vm`, and `ism` Stress (BugID 4508927)

In rare cases when a quiesce of the Solaris operating environment fails to stop certain user threads, other user threads may not be restarted and remain in a stopped state. Depending on the threads affected, applications running on the domain may stop running and other DR operations may not be possible until the domain is rebooted.

Workaround: To avoid this problem, do not use DR to remove a board that contains permanent memory.

MPxIO Driver Causes Domain Panic During DR (BugID 4467730)

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

`scsi` Times Out on cPCI and Dual Channel FC PCI Cards (BugID 4424628)

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

ISDN — Supported in 32-bit Mode Only

ISDN does not support the Power Management™ suspend and resume features.

SunFDDI and Diskless Booting

Neither the SunFDDI™ PCI board (FDDI/P) nor the SunFDDI SBus board (FDDI/S) supports diskless booting.

Multiple Sun GigaSwift Ethernet Cards May Hang System (BugID 4336400, 4365263, 4431409)

Your system may experience heavy CPU usage or may hang if more than two Sun GigaSwift Ethernet cards are installed.

Display of PCI Device Slot Information Is Incorrect (Bug ID 4130278)

The `prtdiag` command does not display the slot number for I/O cards correctly. Ultra 60, Ultra 80, Sun Enterprise 10000, and Sun Enterprise 6x00, 5x00, 4x00, and 3x00 platforms are affected.

Workaround: Each of the above platforms must install a minimum revision of OBP for the prtdiag command to report the hardware configuration correctly. Running the fixed prtdiag with an old version of OBP still results in the wrong slot number information. The revision numbers for each platform are as follows:

Platform	OBP/SSP rev	Patch#
Ultra-60/80	OBP_3.31.0	109082-05
Sun Enterprise 6x00, 5x00, 4x00	OBP_3.2.29	103346-29
Sun Enterprise 10000	SSP 3.3	109661-04

FDDI May Hang During Heavy Load (BugIDs 4485758, 4174861, 4486543)

The PCI FDDI card has known hardware problems related to `DTXSUSP` (DMA TX process suspend interrupt) and `DRXSUSP` (DMA RX process suspend interrupt) bits in the `MAIN_CONTROL` and `MAIN_STATUS` registers. These hardware bugs minimally affect FDDI functionality under normal conditions. However, under a *very* heavy TX or RX load, the card posts an unexpected interrupt. The system posts the error message, "Interrupt level 6 is not serviced". After 20 such errors, the `pcipsy` driver shuts down interrupt processing for the FDDI and hangs FDDI.

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 8 LANE instances are on a single adapter. This bug does not manifest from 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 atm network by typing:

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

3. Reset netmasks or any other network setup for the atm interfaces. This process only reinitializes your atm network.

Expert3D, Expert3D-Lite Might Panic (BugIDs 4633116 and 4645735)

In rare cases, the Expert3D and Expert3D-Lite frame buffers might panic when Power Management or Frame Buffer Power Management (FBPM) are enabled. The following error message appears:

```
"WARNING:     ddi_umem_free: Illegal "cooie" type 8192 panics"
```

Workaround: Disable power management and FBPM on the system.

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.

Sun Fire 6800/4810/4800/3800 Systems

This section provides information on using the Solaris operating environment.

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

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

Note – For information on the system controller firmware that contains DR functionality, refer to the *Sun Fire 6800/4810/4800/3800 Systems Software Release Notes* included with the 5.13.0 firmware release. This firmware and related documentation is included in SunSolve patch 112494-01, which is available on the SunSolve web site (`http://sunsolve.Sun.com`).

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 38
- "Known DR Limitations" on page 39
- "Dynamic Reconfiguration (DR) Software Bugs" on page 43

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 will see other DR classes as well.

For more information about system-specific problems with DR, see "Known Dynamic Reconfiguration Bugs" on page 43.

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 the `-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 via an ftp or http connection from an ftp or http server where the firmware image is stored.

Note – Additional information about installing the firmware patch is available in the README and Install.info files that accompany the patch.

▼ To Upgrade the System Firmware:

1. **Set up the ftp or http server.**

   For more information, see Appendix B of the *Sun Fire 6800/4810/4800/3800 Systems Platform Administration Manual* (part number 805-7373-13).

2. **Download the 5.13.0 firmware.**

   This firmware and related documentation is included in SunSolve patch 112494-01, which is available on the SunSolve Web site located at:

   `http://sunsolve.Sun.COM/pub-cgi/show.pl?target=patches/patch-access`

3. **Copy the patch onto the ftp or http server using a command such as the following:**

   ```
   # cp /patch_location/* /export/ftp/pub/5.13.0
   ```

4. **From the Sun Fire System Controller, perform a** flashupdate**.**

   For more information, see the flashupdate command topic in the *Sun Fire 6800/4810/4800/3800 System Controller Command Reference Manual* (part number 805-7372-13). Use a command such as the following:

   ```
   qasp3-sc0:SC> flashupdate -f ftp://labuser:welcome@qasp3-a/export/ftp/pub/5.13.0/ all rtos
   ```

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 (IB*x*) 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 re-start 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), nor SAI/P (bug 4466378), nor 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.
- Do not reboot nor reset the System Controller (SC) during DR operations. In addition, do not perform a flashupdate, which requires a reboot upon completion.

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 boat 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, 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. However, there is no harm in doing so.

■ 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 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. **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 Enterprise 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 Enterprise 6800, 4810, 4800 and 3800 Systems Dynamic Reconfiguration User Guide* for more information.

2. **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 had 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 root:

```
# 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. Typically, a quiescent state lasts longer than two minutes.

Because quiescence has a noticeable impact, `cfgadm` requests confirmation before effecting 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 using 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 (DR) Software Bugs

This section contains the synopses and Sun BugID numbers of the more important bugs that have been discovered during testing of DR. This list does not include all bugs.

Known Dynamic Reconfiguration Bugs

- `cryptorand` exited after removing CPU board with Dynamic Reconfiguration (BugID 4456095)

Description: If a system is running the `cryptorand` process, which is found in the SUNWski package, an unconfigure of memory, such as part of a CPU/Memory (SB) board disconnect, causes `cryptorand` to close with messages recorded in `/var/adm/messages`. This denies random number services to secure sub-systems, and any memory present when `cryptorand` is started should not be unconfigured.

The `cryptorand` process supplies a random number for `/dev/random`. After `cryptorand` is started, the amount of time before `/dev/random` becomes available depends on the amount of memory in the system. It takes about 2 minutes per GB of

memory. Applications that use `/dev/random` to get random numbers may experience temporary blockage. It is not necessary to restart `cryptorand` if a CPU/memory board is added to a domain.

Workaround: If a CPU/memory board is removed from the domain, restart `cryptorand` by entering the following command as superuser:

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

■ SBM sometimes can cause system panic during DR operations (BugID 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 trials, and do not perform CPU system board DR operations on systems with SBM installed.

■ DR hangs during configure operation with IB board w/ vxdmpadm policy= check_all (BugID 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: To avoid the deadlock between the DMP daemon and system board DR, enter the following command to stop and re-start the DMP daemon before performing DR operations:

```
# /usr/sbin/vxdmpadm stop restore
```

■ cfgadm_sbd plugin in multi-threaded environment is broken (BugID 4498600)

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

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

■ DR operations hang after a few loops when cpu power control is also running (BugID 4114317)

Description: When multiple concurrent DR operations occur, or when `psradm` is run at the same time as a DR operation, the system may hang because of a mutex deadly embrace.

Workaround: Perform DR operations serially (one DR operation at a time); and allow each to complete successfully before running `psradm`, or before beginning another DR operation.

■ Test case `libcfgadm_031_040` hangs on `fc_request_cv` (BugID 4633009)

Description: Solaris may exhibit hang symptoms during DR operations if the machine is stressed and starved of resources. The following messages, which can be found in the `/var/adm/messages` file, appear on the console:

```
ufs: NOTICE: alloc: /: file system full
fork failed - too many processes
genunix: NOTICE: out of per-user processes
no swap space to grow stack
```

Workaround: Restart the `efdeamon` by typing the following command as root:

```
# /usr/lib/efcode/sparcv9/efdaemon 2> /dev/null
```

■ CPU/Mem board `unconfig` takes a long time to complete with Oracle/TPCC load (BugID 4632219)

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

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

■ Cannot run DR and PPP daemon concurrently (BugID 4638018)

If the Sun OC48 PacketOverSonet adapter has been configured for PPP, all DR operations fail and an error message is generated.

Workaround: Before initiating any DR operations on the adapter, manually stop the PPP daemon by typing the following command:

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

Do not proceed with any DR operations on the adapter until `pppd` has been successfully stopped. Failure to do so requires a system reboot to recover.

Sun Enterprise Midrange Systems Open Issues

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

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

Dynamic Reconfiguration of Sun Enterprise 6x00, 5x00, 4x00, and 3x00 Systems

These release notes provide the latest information on Dynamic Reconfiguration (DR) functionality for Sun Enterprise 6x00, 5x00, 4x00, and 3x00 systems running the Solaris 9 operating environment from Sun Microsystems. 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 operating environment includes support for CPU/memory boards and most I/O boards in Sun Enterprise 6x00, 5x00, 4x00, and 3x00 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

Enabling 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*) may 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 OBP command instead of the above 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 Open Boot 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 (BugID 4156075)" on page 51 and "DR: Cannot Unconfigure a CPU/Memory Board That Has Interleaved Memory (BugID 4210234)" on page 51.

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.`

`cfgadm -v` Not Working Properly (BugID 4149371)

The memory test should give occasional indications that it is still running. During a long test, the user cannot easily determine that the system is not hanging.

Workaround: Monitor system progress in another shell or window, using `vmstat(1M)`, `ps(1)`, or similar shell commands.

Memory Interleaving Set Incorrectly After a Fatal Reset (BugID 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 below.

- **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 may 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 (BugID 4210234)" on page 51.

DR: Cannot Unconfigure a CPU/Memory Board That Has Interleaved Memory (BugID 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 (BugID 4156075)" on page 51 for a related discussion on interleaved memory.

DR: Cannot Unconfigure a CPU/Memory Board That Has Permanent Memory (BugID 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 (BugID 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 (BugID 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 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 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, 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 operating environment on the Sun Enterprise 10000 server.

General Issues

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

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

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

Solaris 9 and Boot-Disk Partition Sizes

If you are upgrading the operating environment from Solaris 2.6 to Solaris 9 and you used the partition layout suggested in the *SMCC Hardware Platform Guide Solaris 2.6*, the partitions may 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 may calculate a partition layout which is not acceptable for some systems. For instance, DSR may select partitions that appear to DSR as being unused (non-UFS partitions which may contain raw data or other types of file systems). If DSR selects a used partition, data loss may 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 may need to manually repartition the boot device, or you may have to perform a fresh install.

Open Boot PROM Variables

Before you perform the `boot net` command from the Open Boot 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 may prevent the domain from successfully booting over the network.

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