



Solaris™ 8 10/00 Release Notes Supplement for Sun™ Hardware

Solaris 8 10/00

Includes Additional Release Notes and End-of-
Support Statements for Solaris 8 10/00 Running on
Sun Hardware Products

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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)
- Open issues (Chapter 3)
- Alternate Pathing issues (Chapter 4)
- Sun Enterprise™ 3x00, 4x00, 5x00, and 6x00 server issues (Chapter 5)
- Sun Enterprise 10000 server issues (Chapter 6)

This manual supplements the *Solaris 8 10/00 Sun Hardware Platform Guide* and the *Solaris 8 10/00 Release Notes*.

Release Notes Update

New information that becomes available between the time this document goes to press and the release of the Solaris™ 8 10/00 operating environment are available in the online release notes at the following URL:

<http://docs.sun.com>

What's New on the Solaris 8 10/00 Computer Systems Supplement CD?

Three new software packages have been added in this release:

- Netra™ ct Platform 1.0 software
- Netra t11xx Alarms 2.0 software
- Netra t Lights Out Management 1.0 software

One software package has been updated for this release:

- SunVTS™ software updated from 4.0 to 4.1

Solaris 8 Adoption Service

Sun™ Support Services offers a fully scalable suite of services designed to meet the dot-com needs of any enterprise. These new Solaris Adoption Services help meet the evaluation, application fitness, implementation, and adoption needs of customers looking to upgrade to the Solaris 8 operating environment. These services are complemented with Web-based resources including an online interactive technical support site, SunSolveSM knowledge database, technical news groups, and FAQs that provide any customer with anytime, anywhere help.

For more information, please visit the Web site at:

<http://www.sun.com/sysadmin/solaris8adoption>

Unbundled Product Support

Although the Solaris 8 10/00 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 and have installed unbundled products, either from Sun or from a different company, you must ensure that all those products are supported on Solaris 8 10/00 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 8 10/00 operating environment.
- Acquire and install a new version of the unbundled product that is supported on the Solaris 8 10/00 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 8 10/00 operating environment. See the unbundled product documentation for more details.

- Remove the unbundled product prior to upgrading to the Solaris 8 10/00 operating environment.

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

<http://sunsolve.sun.com/pubpatch>

Documents on the Software Supplement for the Solaris 8 10/00 Operating Environment for Sun Computer Systems CD

Note – In this document, the CD labeled “Software Supplement for the Solaris 8 10/00 Operating Environment” is called the “Computer Systems Supplement CD”.

Table 1-1 lists the documents available on the Computer Systems Supplement CD:

TABLE 1-1 Documents on the Supplement CD

Path	Comment
Docs/README_en.html	Readme file for Solaris 8 10/00 Sun Computer Systems Supplement CD
Docs/HWPG/HWPG_en.ps	<i>Solaris 8 10/00 Sun Hardware Platform Guide</i>
ShowMeTV_1.3/Docs/UserGuide/UG_en.ps	<i>ShowMe TV™ 1.3 User's Guide</i>
SunForum_3.0/Docs/SunForumUG.ps	<i>SunForum™ User's Guide</i>

Note – The _en indicates an English language document. Other languages may be indicated, depending on locale.

The Computer Systems Supplement CD also contains other documentation in AnswerBook™ packages and in man page packages. The documentation in AnswerBook packages can only be read through the AnswerBook2™ server software provided on the Solaris Documentation CD. Documents in the man page packages

can only be read through the `man` command. Refer to the *Solaris 8 10/00 Sun Hardware Platform Guide* for details on installing these packages from the Supplement CD.

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 8 10/00 operating environment. Systems that can only run the 32-bit mode (such as those in the sun4d and sun4m platform groups) do not require updated firmware to run Solaris 8 10/00 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 the *Solaris 8 10/00 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 wriststrap may be required for the update. If you need a wriststrap, send e-mail to strap@eng.sun.com

Flash PROM Update Multimedia AnswerBook CD

This CD provides video clips that illustrate how to perform steps involving hardware that are part of the procedures for updating the flash PROM on some sun4u systems.

The video clips on this CD can be accessed several ways. Some software products are present on this CD to facilitate viewing of the videos directly from the CD. Do not use the AnswerBook2 server software or the ShowMe TV software on this CD to install these products permanently on a system. Instead, use the Solaris 8 10/00 Documentation CD to install AnswerBook2 server software and use the Computer Systems Supplement CD to install ShowMe TV software.

Note – The video clips on the Flash PROM Update Multimedia AnswerBook CD have English language audio tracks. The volume level for the audio tracks is set to minimum. If you want to hear the English language audio track, you must adjust the audio level.

Removable Media Manager Issues

The Removable Media Manager replaces the “Open Floppy” and “Open CD-ROM” options formerly found in the CDE menus and Front Panel. For related bug descriptions and workarounds, refer to the Common Desktop Environment Bugs section of Solaris Runtime Issues in the *Solaris 8 (SPARC Platform Edition) 10/00 Release Notes Update* on <http://docs.sun.com>.

cfgadm Command Consistently Panics Enterprise 3x00-6x00 Systems (bugID 4339235)

The `cfgadm` command panics the system while trying to quiece CPUs, while performing the connect and configure command:

```
cfgadm -v -y -c configure sysctrl10:slotX
```

Workaround: Update the `cpu_tick_freq` variable after boot using `adb` as follows:

```
adb -wk
*sys_tick_freq>/i/c
cpu_tick_freq/W <c
```

Alternate Pathing 2.3

The version of Alternate Pathing (AP) 2.3 contained on this supplement CD has been pre-patched with patch 108719-03, enabling AP to work with the changes in this update of Solaris.

Any installation of AP 2.3 other than the one on this CD, requires the application of patch 108719-03 in order to operate correctly with Solaris 8 10/00. Patch 108719-03 is located in the `/cdrom/cdrom0/Alternate_Pathing_2.3/Patches` directory on this CD.

Failure to install the pre-patched AP 2.3 or the patch to any other installation of AP 2.3 could leave your Solaris 8 10/00 system unbootable.

End-of-Support Products

Products Not Supported in the Solaris 8 Operating Environment

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

Sun4c Systems

The following sun4c architecture systems and servers based on these systems are not supported by this Solaris release:

- SPARCstation™ SLC
- SPARCstation ELC
- SPARCstation IPC
- SPARCstation IPX
- SPARCstation 1
- SPARCstation 1+
- SPARCstation 2

Note – All hardware options (such as SCSI devices) and supported configurations that are dependent upon the sun4c architecture are no longer supported. A list of these options is included in the Supplement CD `/Docs/HWPG` directory in the `EOS.html` file.

SPARCstation Voyager

SPARCstation Voyager™ systems are not supported by this Solaris release.

SPARC Xterminal 1

SPARC™ Xterminal 1™ systems are not supported by this Solaris release.

Future End-of-Support Products

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

sun4d Servers (32-bit only)

The following sun4d architecture servers may no longer be supported in a future release:

- SPARCserver™ 1000 systems
- SPARCcenter™ 2000 systems

Hardware options that are dependent on the sun4d architecture may no longer be supported in a future release.

Ethernet Quad Drivers `qe` and `qec`

Ethernet Quad drivers `qe` and `qec` may no longer be supported in a future release.

Open Issues

StarOffice Support

The Sun StarOffice™ Knowledge Database is the current customer support resource for StarOffice 5.1. For more information, refer to:

<http://www.sun.com/products/staroffice/support.html>

Booting From Partitions Greater Than 2 Gbytes (1234177)

Due to PROM limitations, all sun4d and sun4m architectures will not boot from partitions greater than 2 Gbytes. These systems will 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 sun4d, and 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™, SunHSI/S™, SunHSI/P™, SunFDDI/S, SunFDDI/P, and Sun GigabitEthernet cards are now installed by default when the Solaris 8 10/00 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 (4177805)

This `s_p_c` driver does not support Dynamic Reconfiguration features in the Solaris 8 operating environment.

Booting a Sun Enterprise 10000 System in 32-bit Mode (BugId 4348354)

Sun Enterprise 10000 systems with 64 Gbytes of memory cannot boot the Solaris 8 10/00 operating environment in 32-bit mode.

OpenGL Conformance Test (BugID 4368030)

Running the OpenGL 1.2.1 Conformance test in an environment without the window manager crashes the Xserver.

SunScreen SKIP 1.1.1 Not Supported in Solaris 8 10/00 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 8 10/00 operating environment. The packages you should remove are:

SICGbdcdr	SICGcrc4	SICGkdsup
SICGc3des	SICGcsafe	SICGkeymg
SICGcdes	SICGes	SICGkisup
SICGcrc2		

ISDN — Supported in 32-bit Mode Only

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

SunVTS 4.1 Issues

The following issues apply to the SunVTS 4.1 product.

New Features for This Release

The following enhancements have been made to the SunVTS 4.1 release:

- New tests added:
 - `env3test`—exercises the thermal sensor on Ultra 100 systems.
 - `fwcamtest`—tests the LG PC-10 digital camera, exercising the 1394 bus through the 1394 camera.
 - `usbkbtest`—exercises the Sun type 6 USB keyboard.
 - `sutest`—tests the on-board Super I/O serial port (`su`) device.

- qlctest—tests the Qlogic2202 board (host bus adapter card).
- ifbtest—tests the Expert3D graphics card.
- Test enhancements:
 - disktest—now supports testing of the USB ZIP drive.
 - sptest—now supports testing of serial ports by using dynamic determination of port type.
- SunVTS OPEN LOOK UI and tests moved to a new package called SUNWvtsol (these items were part of the SUNWvts package prior to SunVTS 4.1).
- For certain platforms (Workgroup servers and Sun Enterprise 10000 servers), the necessity of having to load a separate package to get the config program has been eliminated. For this reason, the SUNWeswga config package is no longer provided.

Refer to the *SunVTS 4.1 User's Guide* and the *SunVTS 4.1 Test Reference Manual* for more details about these new features.

SunVTS End of Support Statements

SunVTS OPEN LOOK User Interface

The SunVTS OPEN LOOK user interface does not support the latest SunVTS features and will be discontinued when the OPEN LOOK environment is discontinued in the Solaris operating environment. For full feature support, use the SunVTS CDE or TTY interface. Refer to the Solaris “End of Software Support Statements” section of the Solaris operating environment release notes for the latest end of support news.

SunVTS Online Testing

In a future SunVTS revision, the SunVTS online testing capability that is initiated using the `vtsui.online` command will no longer be available. The SUNWodu package that provides this online testing functionality will be removed.

Online Diagnostic testing of Sun systems is now available through the Sun Management Center software using the Sun Hardware Diagnostic Suite add-on software. See <http://www.sun.com/sunmanagementcenter> for details.

Possible Installation Problems

There are several installation problems that you might encounter 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 (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 4.1 User's Guide*.

Installation Problem: Security and Web Start 2.0 (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 4.1 User's Guide*.

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

When you attempt to install SunVTS using Web Start 2.0 you are not able 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 4.1 User's Guide*.

Sun StorEdge A5xxx Device Group Changes

As of SunVTS 3.3, the way that Sun StorEdge™ A5XXX devices are grouped in the SunVTS System Map (for logical mapping) changed. Prior to version 3.3, the enclosure was grouped under the `SENA(n)` group and the disks were grouped under the `SCSI-Devices` group. Now the enclosure and disks are both grouped under the `StorEdge-A5xxx_enclosure_name` group.

Physical Configuration Mapping Support

The physical mapping function is only supported on the systems where the config program is supported.

To display physical mapping, click the Physical Mapping button in the SunVTS interface. The entire set of testable devices and test settings are remapped. Changing the logical and physical view during a test session is not recommended, because the previous system and test status will be reset.

Disk Test (`disktest`) Mounting Issues

As of the SunVTS 3.0 release, SunVTS `disktest` by default does not mount any mountable partitions. To have SunVTS software mount all partitions that contain a file system, set the environment variable `BYPASS_FS_PROBE` to 0 (zero), then start SunVTS software. For more details, refer to the `disktest` chapter in the *SunVTS 4.1 Test Reference Manual*.

Disk Test (`disktest`) Option File Note

Loading an option file that was created when `BYPASS_FS_PROBE` was set to 0 (zero) might not work if the `BYPASS_FS_PROBE` environment variable is no longer set to 0 (zero). Testing might fail with the following error:

```
SUNWvts.disktest.8088 07/24/98 15:47:22 disktest c0t0d0 FATAL:
"Couldn't get file system information on /disktest_c0t0d0s0,
statvfs() system call failure error: No such file or directory.
```

This error is caused when SunVTS software expects to use the predefined mount point names (`/disktest_cntndnsn`) that are created when `BYPASS_FS_PROBE` is set to 0 (zero), but these mount points do not exist while `BYPASS_FS_PROBE` is not set to 0 (zero).

Workaround: Create two separate option files for the two different states of the `BYPASS_FS_PROBE` environment variable.

Undocumented `disktest` Option

When you run `disktest` from the command line, there is an undocumented option you can use to specify the media access method as follows:

```
method=AsyncIO+SyncIO
```

This `disktest` option runs the following subtests:

- asynchronous I/O test using the async read/write feature of the Solaris disk driver
- synchronous I/O test

Some Devices Not Displayed Under Physical Mapping (4228489)

Certain devices that appear under logical mapping are not displayed under physical mapping. These devices are not selectable for testing.

Workaround: Use logical mapping for testing such devices.

The `qlctest` Causes Other Tests To Fail (4338166)

If you try to run other tests while the `qlctest` is running, the other tests will fail.

Workaround: Do not run any other tests when you run the `qlctest`.

The `fwcamtest`, When Run Remotely, Might Display and Log Numerous Warning Messages (4335966)

Running `fwcamtest` through a remote connection (such as a telnet session), when the `DISPLAY` variable is not set properly, causes numerous warning messages to display. These messages are also logged and can fill the log files.

Workaround: Set your `DISPLAY` variable to the local host before you start SunVTS and run `fwcamtest`.

The `fwcamtest` and `vmentest` Cannot Run at the Same Time on Sun Blade 100 Systems (4367255)

Do not run the `fwcamtest` and `vmentest` at the same time on any Sun Blade™ 100 system or test failures might occur.

Undocumented `bpptest` Option

There is an undocumented option you can use to specify the loopback test option:

```
loop=enable|disable
```

The Correct `nettest` Timeout Value (4364042)

The SunVTS Test Reference incorrectly lists the `nettest` timeout value as 20 seconds in the Command-Line Syntax section. The correct timeout value is 120 seconds.

The `sutest` Does Not Support Loopback Testing With 28800 Baud (4364194)

If you attempt to run the `sutest` loopback test at 28800 baud, you receive the `sutest` error “Invalid baud_rate: 28800”. The `Sutest` runs fine when you select any of the other selectable baud rates.

Workaround: Do not select the 28800 baud rate from the option menu when running the `sutest` loopback test.

The netlbtest Might Fail On Systems With Multiple ERI Devices (4367671)

The netlbtest might fail when there are multiple ERI ports and one port is connected to the network while the other ports are not.

Workaround: Before you run the netlbtest, shutdown the live ERI port with the ifconfig command.

ShowMe TV 1.3 Known Problems

ShowMe TV 1.3 software contains support for MPEG2 movie playback. Support was dropped for the Sun MediaCenter™ in ShowMe TV 1.3. Also, ShowMe TV 1.3 software contains a number of bug fixes over ShowMe TV 1.2.1. Here is a list of some known problems:

- There are various minor problems with playing MPEG1/2 files: Zoom does not work on some frame-buffers, the position indicator is not accurate enough, the frame-by-frame step back function does not work.
- You can not switch between CIF and QCIF H.261 streams (that is, regular resolution, or 352x288 size frames, and low resolution, or 176x244 size frames) on non Ultra systems.
- Mixing Asian and ASCII characters in one line of text can confuse the input/output functions in ShowMe TV software. In particular, if a user sets up a transmission in which the transmission name or the hostname contains Asian characters, then saving or recovering these parameters to or from the `.showmetv-programs-hostname` configuration file might not work correctly.
- The receiver's buttons and menus contain incorrect text in locales other than English (bug id 4210702).

PCMCIA Issues

The following bugs have been filed against PCMCIA device support in this Solaris release.

Known Bugs

If the PC ATA (`pcata`) module is modunloaded the system appears to hang (4096137)

Description: If there is a PCMCIA I/O card in a slot that has been accessed and the card driver is unloaded (as occurs during `modunload -i 0` at the end of multi-user boot) the system appears to hang. Sometimes removing the card brings the system back.

When Booting Solaris 8 operating environment initially with 64-bit kernel the device `/dev/term/pc0`, PC card serial driver, may not get created (4162969)

Description: When booting the Solaris 8 operating environment initially with 64-bit kernel, the `/dev/term/pc0` hardware device node for PC card serial device may not be created.

Workaround: Boot the system up with the 32-bit kernel first, then reboot with the 64-bit kernel.

PC File Viewer Issues

Install in the `/opt` Directory

The *Solaris 8 10/00 Sun Hardware Platform Guide* provides installation instructions that might indicate that PC file viewer can be installed in a directory other than the default directory. PC file viewer *must* be installed in the default (`/opt`) directory.

Known Bugs

- Backdrop image is not displayed in PowerPoint97 document (4159447).
- Cannot display nonstandard fonts in PowerPoint97 (4159448).
- Excel graph/table in PowerPoint97 document is not displayed (4159449).

- Cannot display scaled font, colored text, italic-underlined text in PowerPoint97 (4159450, 4159451, 4159452).
- Copy and paste of certain files into a text editor results in asterisks (*) instead of actual text (4165089).
- Searching does not work for multibyte (tch, ko) in PC file viewer (4151774).
- Wrong string is reversed in PC file viewer search on Japanese locales (4171815).
- Cannot display TCH Word95 saved in Word97 or PowerPoint97 formats in zh.TW.BIG5 locale (4150413).

Sun Remote System Control (RSC) Release Notes

What's New in This Version

This version of Sun Remote System Control (RSC) includes bug fixes and a new environment variable, *tpe_link_test*. In addition, the RSC device Internet address has been added to email and pager alert messages.

If you have already installed a previous version of Remote System Control, back up your RSC configuration before installing this version, following the directions in Chapter 2 of the *RSC User's Guide*, and then restore them after installation when you run the RSC configuration script.

The *tpe_link_test* variable enables 10BASE-T Ethernet link integrity tests when set to true, the default. If you are using RSC in a hub that does not support Ethernet link integrity tests or that has them disabled, set this variable to false. Changes to this variable take effect after the next RSC reset. The *tpe_link_test* variable behaves similarly to the *tpe-link-test?* OpenBoot PROM environment variable, which is available on some SPARC platforms.

RSC and the local hub should have Ethernet link integrity tests enabled or disabled consistently. If this setting is not consistent, communication might not be possible.

Hardware and Software Configurations Supported for RSC

Supported Server

The Sun Enterprise 250 server, running the Solaris 8, Solaris 7, or Solaris 2.6 5/98 operating environment, is the only supported system.

The Sun Enterprise 250 flash PROM must be updated to version 3.7.7 or later before installing the RSC software. Failing to do so may cause server and RSC malfunctions. For update instructions and a downloadable image, see the Sun Enterprise 250 Supplement Web page at this address:

<http://sunsolve2.Sun.COM/sunsolve/E250/flash.html>

If you install RSC from the Sun Enterprise 250 Supplement CD, you can update the flash PROM as part of the installation process.

Supported GUI Clients

Sun JDK™ version 1.1.6 or a subsequent compatible version is required for GUI support on systems running the Solaris operating environment, and is included in the base Solaris 8 operating environment and the Sun Enterprise 250 Supplement CD.

Supported CLI Clients

- ASCII character terminals
- Systems running ASCII terminal emulation software
- Systems with Telnet client software

Ethernet Support

RSC is designed to function in a 10BASE-T network, and the RSC Ethernet port should be connected to a hub operating at 10 Mbps. If RSC does not respond to an Ethernet request, check that the connection is to a 10BASE-T hub.

Uninterruptible Power Supply (UPS)

An American Power Conversion SmartUPS 1000 with PowerChute plus 4.2.2 software was used for testing.

Paging Support

RSC paging requires that the customer's paging service adhere to the TAP protocol. Paging services in the Americas and Europe generally are TAP-compliant, but this is not necessarily true in other locales.

Testing RSC Paging

Due to the many variables associated with paging, Sun Microsystems strongly recommends that you test the RSC paging mechanism to insure that your configuration options are set correctly.

The easiest way to test that all the components associated with RSC paging are functioning properly is to use the `rscadm send_event -c` command. Invoke this command from a UNIX® shell to initiate an RSC alert. If the RSC `page_enabled` flag is set to true, this alert will send a page to the recipients specified by the `page_info1` and `page_info2` environment variables.

If RSC fails to send a page, a message similar to the following will be added to the event log:

```
THU AUG 27 22:31:09 1998 sst4828: 00060006: "Failed to send
page alert for recent event"
```

If RSC successfully transmits a page, no error message is added to the event log.

RSC can fail to send a page notification for the following reasons:

- It failed to communicate with the modem.
- It failed to contact the paging service specified by the `page_info1` or `page_info2` variable.
- A failure occurred while RSC was communicating with the paging service TAP server.

When a page fails, check that the following conditions are met:

1. The modem dip switch and software configuration variables are set correctly.
2. All the RSC `page` variables (`page_info1`, `page_info2`, `page_init1`, `page_init2`, `page_baud1`, and `page_baud2`) are set correctly and match the settings for your paging service.

3. Your paging service supports the TAP protocol. Check with the paging service to ensure that you have the proper phone number and modem configuration parameters.
4. Attempt to connect with the paging service manually. Refer to the "Troubleshooting Modem Problems" section in Appendix B of the *RSC User's Guide* for instructions on manually connecting to a TAP paging service.

Troubleshooting

In some cases, it might be desirable to extend the pause period to allow the modem to recognize the dial tone of the phone line. This can be accomplished on most modems by increasing the value in the S8 register. See the documentation that came with your modem for more details.

Documentation Errata

The following documentation errors have been found in the Solaris 8 10/00 documents.

Solaris 8 10/00 Sun Hardware Platform Guide

Table 3-1 incorrectly lists the version number of Netra t Lights Out Management as 1.0. The correct version number is 2.0

Table 3-1 incorrectly lists the version number of OpenGL for the Solaris 8 operating environment as 1.2.1. The correct version number is 1.2.

Table 3-2 incorrectly states that installation of CDRW 1.0 is optional. Installation is not optional, it is installed by default.

`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`

SunVTS 4.1 Test Reference Manual

bpptest—The *SunVTS 4.1 Test Reference Manual* does not mention the loopback test option. The syntax for the option is `loop=enable|disable`

disktest—The *SunVTS 4.1 Test Reference Manual* does not mention the `method=AsyncIO+SyncIO` option, which specifies the Media access method. This option runs the asynchronous I/O test, using the async read/write feature of the Solaris disk driver and/or Runs the synchronous I/O test

cg6test—The *SunVTS 4.1 Test Reference Manual* incorrectly listed test path as `/opt/SUNWvts/bin/cg6test`. The correct test path is `/opt/SUNWvts/bin/cg6`.

nettest—The *SunVTS 4.1 Test Reference Manual* incorrectly listed the default timeout value as 20 seconds in the Command-Line Syntax section. The correct default timeout value is 120 seconds.

AP 2.3 on Sun Enterprise Servers

AP 2.3 on Sun Enterprise Servers

This section contains the release notes for Alternate Pathing (AP) 2.3 on Sun Enterprise 3x00, 4x00, 5x00, 6x00 and 10000 servers.

Note – AP 2.3 is the first release of AP that supports the Solaris 8 10/00 operating environment.

AP enables you to define and control alternate physical paths to peripheral devices, adding increased availability and a level of fault recovery to your server. If a physical path to a device becomes unavailable, an alternate path can be used. For more information, see the *Sun Enterprise Server AP 2.3 User Guide* in the Solaris 8 10/00 on Sun Hardware Collection AnswerBook2™.

Installation Issues

If you are upgrading from Solaris 2.6 or Solaris 7 software to Solaris 8 10/00 software and have AP 2.1 or AP 2.2 on your system, you must upgrade to AP 2.3. Because most systems have a volume manager installed we have included references to them.

Note – AP 2.3 installation is Solaris operating environment specific. If you have already installed AP 2.3 on your system and choose to upgrade your operating system at a later date, you must follow the upgrade procedure to remove the AP 2.3 software using `pkgrm` and re-install AP 2.3.

This section contains an overview of the entire upgrade process, which requires you to use several sections from different publications. You should ensure that you have the following publications before you start the upgrade:

- *Solaris 8 10/00 Release Notes Supplement for Sun Hardware* (available in printed form in your Solaris 8 10/00 Media Kit)
- *Solaris 8 10/00 Sun Hardware Platform Guide*, (available in printed form in your Solaris 8 10/00 Media Kit or in AnswerBook2 format on the Computer Systems Supplement CD)
- *Sun Enterprise Server Alternate Pathing 2.3 User Guide* (available in AnswerBook2 format on the Computer Systems Supplement CD in your Solaris 8 10/00 Media Kit)
- User Guide for your Volume Manager
- Installation and Product Notes for your Volume Manager

Note – Before attempting an upgrade, verify that your volume manager supports the Solaris 8 10/00 software.



Caution – You must follow the sequence given here to successfully complete the upgrade.

In general, you will perform the following tasks:

- Deconfigure your volume manager
- Remove the previous version of AP.
- Upgrade to the Solaris 8 10/00 operating environment.
- Install AP 2.3.
- Install and reconfigure your volume manager

Specifically, you must perform the following tasks:

1. Read “Performing an Upgrade of AP” in the *Solaris 8 Sun Hardware Platform Guide*.
2. Commit any uncommitted AP metadevices (see Step 1 in “To Upgrade AP” in the *Solaris 8 Sun Hardware Platform Guide*).
3. Deconfigure your volume manager using the documentation provided by the specific vendor.

Note – With regard to AP, no additional steps need to be taken to do this other than those recommended by the manufacturer to deconfigure the volume manager.



Caution – When the volume manager has been deconfigured and you are instructed to install the new OS, stop at that point and remove your previous version of AP. Do *not* install Solaris 8 10/00 software at this time.

4. Remove the current AP configuration using “Remove the current AP configuration.” of the *Solaris 8 10/00 Sun Hardware Platform Guide*.
5. Upgrade to Solaris 8 10/00 using “Upgrade the Solaris operating environment (if applicable) now.” in the *Solaris 8 10/00 Sun Hardware Platform Guide*.
6. Upgrade to AP 2.3 using “When the Solaris software upgrade process is completely finished, upgrade to AP 2.3.” in the *Solaris 8 10/00 Sun Hardware Platform Guide*.
7. Install your volume manager according to your manufacturer’s instructions.

General Issues

This section contains general issues that involve AP on Sun Enterprise servers. Read this section before you attempt to install or configure AP.

Note – If you are upgrading to AP 2.3 on *all* Sun Enterprise 10000 domains then you can safely remove the `SUNWapssp` package software from the SSP workstation using `pkgrm`. If, however, any domain will remain at an earlier version of AP, then you must *not* remove the AP software on the SSP workstation. In either case, leaving AP software on SSP workstations will have *no* effect on AP 2.3.

Supported Devices

The following devices are supported by the AP software on Sun Enterprise servers:

- SPARCstorage™ Arrays recognized by AP using the `pln(soc)` controllers
- Sun™ StorEdge™ A5000 recognized by AP using `sf(socal)` controllers
- Sun™ StorEdge™ T300 recognized by AP using `sf(socal)` controllers
- SunFastEthernet™ 2.0 (`hme`)
- SunFDDI/S™ 6.0 (`nfe`) SAS (Single-Attach Station) and DAS (Dual-Attach Station)
- SCSI-2/Buffered Ethernet FSBE/S and DSBE/S (`le`)
- Quad Ethernet (`qe`)
- Sun™ Quad FastEthernet™ (`qfe`)
- Sun Gigabit Ethernet 2.0 (`ge`)

The following table lists which devices are supported in which releases:

TABLE 4-1 AP Support Matrix

AP Version	Solaris Release	Network Interface Cards									Disk Controllers	Storage Products
		ge	hme	le	nf	bf	hi	qe	qfe	vge		
2.0	2.5.1		X	X	X	X	X	X	X		pln/soc	SSA
2.0.1	2.5.1		X	X	X	X	X	X	X		pln/soc, sf/socal	SSA, A5000
2.1	2.6	X	X	X	X			X	X	X	pln/soc, sf/soc	SSA, A5000
2.2	7	X	X	X	X			X	X		pln/soc, sf/socal,	SSA, A5000
2.3	2.6	X	X	X	X			X	X	X	pln/soc, sf/socal	SSA, A5000,
	7	X	X	X	X			X	X		pln/soc, sf/socal,	SSA, A5000, T300§
	8	X	X	X	X				X		pln/soc, sf/socal,	SSA, A5000, T300§
<p>§ - AP 2.3 has not been optimized for T300 support in this release. See “Sun StorEdge T300” on page 29.</p>												

SunFDDI and Gigabit Ethernet Devices

AP 2.3 validation tests were performed on SunFDDI/S (revision 6.0) and Gigabit Ethernet (revision 2.0). If you install either of these devices, you must use the revision level that was tested, unless a higher revision level exists. In addition, you must install all of the available patches for these devices. Refer to <http://www.sunsolve.sun.com> for more information about the patches.

Sun StorEdge A3000

The Sun StorEdge A3000 supports failover capabilities that are similar to those provided by AP 2.3. Because of this, AP 2.3 does not support the Sun StorEdge A3000. See that product’s documentation for more information about its failover support.

Sun StorEdge A5000

AP 2.3 supports the Sun StorEdge A5000 for this release.

Sun StorEdge A7000

AP 2.3 does not support the Sun StorEdge A7000 for this release.

Sun StorEdge T300

AP 2.3 supports the Sun StorEdge T300 with standard AP active/passive I/O distribution algorithms for this release.

Software Compatibility

The following lists includes the possible combinations of AP and Solaris software you can install on a Sun Enterprise server.

- Solaris 8 10/00 with AP 2.3 and DR
- Solaris 7 with AP 2.3 and DR
- Solaris 7 with AP 2.2 and DR
- Solaris 2.6 with AP 2.3 and DR
- Solaris 2.6 with AP 2.1 and DR
- Solaris 2.5.1 with AP 2.0.1 and DR (Sun Enterprise 10000 server only)
- Solaris 2.5.1 with AP 2.0 and DR (Sun Enterprise 10000 server only)

Dynamic Reconfiguration (DR) Issues

The DR Attach operation can complete without the controller being immediately accessible to AP. You must verify that the physical device is present before switching to the new controller using `apconfig`.

A Sun Enterprise 10000 Server running the Solaris 2.6 operating environment requires Patch 106284-02 for AP 2.3 to run correctly with the `dr_daemon`.

Boot Disk Issues

AP 2.3 provides support for only one alternately pathed boot disk plus a mirror disk per domain.

In order to fix inconsistencies in boot recovery behavior device aliases for the boot disk are not supported.

Boot recovery is architecture generic in AP 2.3. Boot recovery works on Sun Enterprise 6x00, 5x00, 4x00, and 3x00 systems as well as Sun Enterprise 10000 platforms.

AP Online Documentation Locations

Documentation for AP 2.0 and 2.0.1 can be found in their respective collections under Hardware -> Enterprise Servers at `docs.sun.com`.

AP 2.1 and 2.2, however, are in the Hardware -> Solaris on Sun Hardware Answerbook collection at `docs.sun.com`.

AP 2.3 is in its own collection under Hardware -> Enterprise Servers.

Known Bugs/RFEs

The following Bugs/RFEs are known to exist in the FCS version of AP 2.3:

SunBugID 4297640 - BAD TRAP panic with `mether_rarp` with AP network switching.

SunBugID 4304418 - Starfire panics after removing network drivers rebooting - AP databs not updated.

SunRFEID 4265982 - an immediate switch of path using AP after DR configure forces it into a 'T' state.

SunRFEID 4276330 - AP handling for individual target failure, FC hubs/fabric, and daisy chaining.

SunRFEID 4297492 - hang on e3500 with mirrored internal disk pull out with ap and sds.

Fixed Bugs

This section contains the synopses and Sun BugID number of the more important bugs that have been fixed since the AP 2.2 release (Solaris 7 11/99). This list does not include all of the fixed bugs.

SunBugID 4166261 - manual AP switch of `hme` meta device loses communication.

SunBugID 4166249 - manual AP switch of `qfe` meta device loses communication.

SunBugID 4171297 - `ap_ioctl` operation panics 64-bit kernel when performing DR drain.

SunBugID 4174503 - AP network with HME switches to device with bad cable, but does not switch back.

SunBugID 4176249 - domain hung on offlining cpu.

SunBugID 4211884 - gigabit ethernet fails to communicate after AP switch.

SunBugID 44162900 - mount an AP metadvice panics.

Other Bugs

This section contains the synopses and Sun BugID number of the more important bugs that have been discovered regarding AP 2.3 and the Solaris 8 10/00 operating system. This list does not include all bugs.

SunBugID 1267410 - upgrade fails on system with metadvice in `vfstab`.
(`suninstall`).

Sun Enterprise 6x00, 5x00, 4x00, and 3x00 Systems Open Issues

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 8 10/00 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 8 10/00 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.

Firmware Notes

FC-AL Disk Arrays or Internal Drives

For Sun StorEdge™™ A5000 disk arrays or for internal FC-AL disks in the Sun Enterprise 3500 system, the firmware version must be ST19171FC 0413 or later. For more information, refer to the “Solaris 8” section at the following web site:

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

PROM Updates for CPU and I/O Boards

Users of Solaris 8 10/00 software who wish to use dynamic reconfiguration must be running CPU PROM version 3.2.22 (firmware patch ID 103346-xx) or later. This firmware is available from the web site. See “How to Obtain Firmware” on page 35.

Older versions of the CPU PROM may display the following message during boot:

```
Firmware does not support Dynamic Reconfiguration
```



Caution – CPU PROM 3.2.16 and earlier versions do not display this message, although they do not support dynamic reconfiguration of CPU/memory boards.

1. To see your current PROM revision, enter `.version` and `banner` at the `ok` prompt. Your display will be similar to the following:

```
ok .version
Slot 0 - I/O Type 1 FCODE 1.8.22 1999/xx/xx 19:26 iPOST 3.4.22 1999/xx/xx 19:31
Slot 1 - I/O Type 1 FCODE 1.8.22 1999/xx/xx 19:26 iPOST 3.4.22 1999/xx/xx 19:31
Slot 2 - CPU/Memory OBP 3.2.22 1999/xx/xx 19:27 POST 3.9.22 1999/xx/xx 19:31
Slot 3 - I/O Type 4 FCODE 1.8.22 1999/xx/xx 19:27 iPOST 3.4.22 1999/xx/xx 19:31
Slot 4 - CPU/Memory OBP 3.2.22 1999/xx/xx 19:27 POST 3.9.22 1999/xx/xx 19:31
Slot 5 - CPU/Memory OBP 3.2.22 1999/xx/xx 19:27 POST 3.9.22 1999/xx/xx 19:31
Slot 6 - CPU/Memory OBP 3.2.22 1999/xx/xx 19:27 POST 3.9.22 1999/xx/xx 19:31
Slot 7 - CPU/Memory OBP 3.2.22 1999/xx/xx 19:27 POST 3.9.22 1999/xx/xx 19:31
Slot 9 - CPU/Memory OBP 3.2.22 1999/xx/xx 19:27 POST 3.9.22 1999/xx/xx 19:31
Slot 11 - CPU/Memory OBP 3.2.22 1999/xx/xx 19:27 POST 3.9.22 1999/xx/xx 19:31
Slot 12 - CPU/Memory OBP 3.2.22 1999/xx/xx 19:27 POST 3.9.22 1999/xx/xx 19:31
Slot 14 - CPU/Memory OBP 3.2.22 1999/xx/xx 19:27 POST 3.9.22 1999/xx/xx 19:31
ok banner
16-slot Sun Enterprise E6500
OpenBoot 3.2.22, 4672 MB memory installed, Serial #xxxxxxx.
Ethernet address 8:0:xx:xx:xx:xx, Host ID: xxxxxxxx.
```

How to Obtain Firmware

For information about updating your firmware, refer to the “Solaris 8” section at the following web site:

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

At this site, you will find information on how to:

- Download the DR-capable PROM firmware
- Upgrade the PROM

If you cannot use the web site, contact your Sun support service provider for assistance.

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]
```

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

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

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

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

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

1. If you are at the OpenBoot™ prompt, use this 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 Solaris on Sun Hardware Collection AnswerBook set in this release.

Disabled Memory List

For information about the OBP `disabled-memory-list` setting, refer to the section “Specific NVRAM Variables” in the *Platform Notes: Sun Enterprise 3x00, 4x00, 5x00, and 6x00 Systems* manual in the Solaris on Sun Hardware Collection AnswerBook 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 (4156075)” on page 38 and “DR: Cannot Unconfigure a CPU/Memory Board That Has Interleaved Memory (4210234)” on page 39.

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.

Dynamic Reconfiguration Feature in Sun Management Center Software

The Sun Management Center™ system monitoring and management software supports dynamic reconfiguration in the Solaris 8 10/00 operating environment. Refer to the *Sun Management Center 2.1 Software User's Guide*, part number 806-3166.

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 (4149371)

Category: RFE

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 (4156075)

Category: Bug

Memory interleaving is left in an incorrect state when a Sun Enterprise X500 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.

1. To clear the problem after it occurs, manually reset the system at the OK prompt.
1. To avoid the problem before it occurs, set the NVRAM `memory-interleave` property to `max`.

This causes memory to be interleaved whenever the system is booted. However, you 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 (4210234)” on page 39.

vmstat Output Is Incorrect After Configuring Processors (4159024)

Category: Bug

`vmstat` shows an unusually high number of interrupts after configuring CPUs. With `vmstat` in the background, the interrupt field becomes abnormally large (but this does not indicate a problem exists). In the last row in the example below, the interrupts (in) column has a value of 4294967216:

#	procs			memory				page						disk				faults			cpu	
r	b	w	swap	free	re	mf	pi	po	fr	de	sr	s6	s9	s1	--	in	sy	cs	us	sy	id	
0	0	0	437208	146424	0	1	4	0	0	0	0	0	1	0	0	50	65	79	0	1	99	
0	0	0	413864	111056	0	0	0	0	0	0	0	0	0	0	0	198	137	214	0	3	97	
0	0	0	413864	111056	0	0	0	0	0	0	0	0	0	0	0	286	101	200	0	3	97	
0	0	0	413864	111072	0	11	0	0	0	0	0	0	1	0	0	4294967216	43	68	0	0	100	

Workaround: Restart `vmstat`.

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

Category: RFE

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 (4156075)” on page 38 for a related discussion on interleaved memory.

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

Category: RFE

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 (4220105)

Category: Bug

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 (4231845)

When a server is configured as a boot server for Solaris 2.5.1-based x86 clients, it has several `rpld` jobs running, whether or not such devices are in use. These active references prevent DR operations from detaching these devices.

Workaround: To 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 Dynamic Reconfiguration (DR) feature, the InterDomain Networks (IDNs) feature, and the Solaris operating environment on the Sun Enterprise™ 10000 server.

Dynamic Reconfiguration

Release notes and other technical information in this section apply only to the Solaris 8 version of Sun Enterprise 10000 Dynamic Reconfiguration (DR) feature.

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-max-mem` Variable

The way `dr-max-mem` is used has changed since the Solaris 2.5.1 release. Refer to the appropriate section of the Solaris 8 version of the *Sun Enterprise 10000 Dynamic Reconfiguration User Guide* for a detailed description of this important OBP variable.

DR and Bound User Processes

For Solaris 8, 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 DR Detach sequence. The DR Drain operation will fail if CPUs are found with bound processes.

Nonpageable Memory Location

For Solaris 8, the location of nonpageable memory (that is, OBP and kernel memory), the kernel cage, resides in the highest physical address space, which generally is on the highest-numbered system board in the domain. The direction of growth of this area is from highest to lowest physical addresses. Exceptions to this rule do exist. Always use `drshow(1M)` to verify a board's memory state.

Some customers require the kernel cage to be located on the lowest numbered system board. If you have this requirement, you can apply Patch 105873-08, as a minimum level, on the SSP to change the location of the cage. Refer to the Patch README file for instructions on how to install the patch. You can obtain the patch from <http://sunsolve.corp.sun.com> or from your local service provider.

DR and SunFDDI

If your Sun Enterprise 10000 server hosts any SunFDDI™ SBus Adapter 5.0 interfaces and if you plan to use DR, you must install Sun Patch 104572-05, or the highest revision level available. You can obtain this patch at the following Web site:

- <http://sunsolve.corp.sun.com>

DR and the Sun StorEdge A3000

Dynamic Reconfiguration of Sun™ StorEdge™ A3000 arrays on the Sun Enterprise 10000 server running the Solaris 8 operating environment requires RAID Manager 6.22, or the latest version, for correct operation. Refer to the *Sun StorEdge A3000 Release Notes* (PN 805-7758-10) for more information.

DR and the Sun StorEdge A5000

DR will be supported on systems configured with Sun StorEdge A5000 devices and the latest StorEdge A5000 patch. Contact your service provider for more information on how to obtain the patch.

For I/O boards connected to the A5000, you must ensure that the FC-AL disk firmware version is ST19171FC 0413 or newer. For more information, refer to the following Web site:

- <http://sunsolve2.Sun.COM/sunsolve/Enterprise-dr/>

DR and pln and soc Drivers

If you are using pln and/or soc drivers on your server, you must ensure that the parameters are properly set in the `/etc/system` file. The file should include the following two entries, exactly as they appear in the example.

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

Bugs Fixed

The following important bugs have been fixed since the last release of DR. This list does not include minor bugs, nor does it include those bugs that were fixed in patches.

4083412 - `socal` and `sf` need to support DETACH/SUSPEND/RESUME

4090750 - DR panics during detach when `dr-max-mem` set is high.

4096048 - `disks(1M)` command preens controller entries and corrupts the Sun StorEdge A3000 device tree.

4133607 - DR operations with `mem_board_interleave_ok` cause problems.

4134357 - `availrmem` is not being reduced during Sun Enterprise 10000 memory detach.

4135366 - Sun StorEdge A3000 patch has been changed.

4136544 - Getting “flusher thread” hang during DR drain with official -20 KU patch.

4100212 - Sonoma daemon cannot be suspended.

4229238 - Unable to drain sysboards in Solaris 7 and `dr_daemon` segmentation faults.

4233315 - Console hangs when performing DR operations.

4249101 - `sigbcmd(1M)` (Break-to-OBP) operation panics host.

4260500 - DR reports all instances of unsafe drivers when only one is necessary.

- 4260509 - Suspending the OS can mistakenly overlook referenced unsafe drivers.
- 4261908 - Retry of failed detach results in incorrect system memory computation.
- 4265017 - DR driver and DR daemon incorrectly report unsafe devices list.
- 4260071 - Panic can occur during DR detach, which can cause data corruption.

Documentation Errata

This section contains descriptions of errors in the publications that were found after this release of the DR feature.

PSM Error Messages

The table that contains the PSM error messages includes an incorrect entry. The following table contains the correct entry.

TABLE 6-1 PSM Error Messages

Error Message	Probable Cause	Suggested Action
4 SFDR_ERR_UNSAFE	Failed to quiesce the operating system due to referenced suspend-unsafe devices.	Determine the I/O usage of unsafe devices in the domain, and manually suspend the unsafe devices.

Reconfiguration After a DR Operation

The *Sun Enterprise 10000 Dynamic Reconfiguration User Guide* contains information about reconfiguring the domain after a DR operation. For this Solaris 8 release, a new DDI subsystem `devfsadm` negates the need for manual reconfiguration. All reconfiguration tasks are completed by the new DDI subsystem.

Solaris Operating Environment

This section contains general issues, known bugs, patches, and notes about the Solaris 8 operating environment on the Sun Enterprise 10000 server.

General Issues

Alternate Pathing (AP), Dynamic Reconfiguration (DR), and InterDomain Networks are supported in the Solaris 8 release.

Note – Before you begin the fresh install or upgrade procedures, you must install SSP 3.2. The SSP 3.0 and SSP 3.1.1 releases do not support the Solaris 8 operating environment on a Sun Enterprise 10000 domain.

Solaris 8 and Boot-Disk Partition Sizes

If you are upgrading the operating environment from Solaris 2.6 to Solaris 8 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 will adjust the affected file systems, and the upgrade will continue. 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.

Solaris 8 and Driver Variables

For Solaris 8, you must enable the `soc` and `pln` drivers in `/etc/system` before you attempt to detach a system board that hosts these drivers. Use the following syntax to enable the drivers:

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

SunFDDI

SunFDDI™ is not supported on the Sun Enterprise 10000 server.

SunATM 4.0 Update 1

SunATM™ 4.0 Update 1 is not supported on the Sun Enterprise 10000 server.

Documentation Errata

This section contains errors in the documentation that pertains to the Solaris operating environment on the Sun Enterprise 10000 server.

OBP Variables

Before you perform the `boot net` command from the OBP 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
```