



Solaris™ 8 Release Notes Supplement for Sun™ Hardware

Solaris 8

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

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Part No. 806-2225-10
February 2000, Revision A

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

This manual supplements the *Solaris 8 Sun Hardware Platform Guide* and the *Solaris 8 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 operating environment will be added to the online release notes available from:

<http://docs.sun.com>

Unbundled Product Support

Although the Solaris™ 8 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 to find 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 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 operating environment.
- Acquire and install a new version of the unbundled product that is supported on the Solaris 8 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 operating environment. See the unbundled product documentation for more details.
- Remove the unbundled product prior to upgrading to the Solaris 8 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 Operating Environment for Sun Computer Systems CD

Note – In this document, the CD labeled “Software Supplement for the Solaris 8 Operating Environment for Sun Computer Systems” will be 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 Sun Computer Systems Supplement CD
Docs/HWPG/HWPG_en.ps	<i>Solaris 8 Sun Hardware Platform Guide</i>
Docs/HWPG/EOS.html	List of end-of-support peripheral products
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>
SunFDDI_SBus_7.0/Docs/SunFDDI6e10k.ps	<i>SunFDDI 6.0 on the Sun Enterprise 10000 Server</i> (see note below)

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

Note – The SunFDDI 7.0 driver is now included with the Solaris 8 operating environment. The SunFDDI and Sun Enterprise 10000 server document refers to SunFDDI 6.0. For the purposes of this document, SunFDDI 6.0 and SunFDDI 7.0 work the same. This document will be updated in a future release.

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 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 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 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 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 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.

End-of-Support Products

Products Not Supported in the Solaris 8 Operating Environment

Starting with this release, support for the following products has been discontinued. For more information, contact your support provider.

Sun4c-based 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 (32bit 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/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 operating environment is installed. Error messages may be displayed if you do not have some of the corresponding hardware installed. These error messages can be ignored.

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

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

ISDN — Supported in 32-bit Mode Only

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

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

- SICGbdcdr
- SICGc3des
- SICGcdes
- SICGcrc2

- SICGcrc4
- SICGcsafe
- SICGes
- SICGkdsup
- SICGkeymg
- SICGkisup

SunVTS 4.0 Issues

The following issues apply to the SunVTS™ 4.0 product.

New Features for This Release

The following enhancements have been made to SunVTS 4.0 release:

- **Deterministic Scheduler**—allows you to specify groups of tests to run in a specific order.
- **SunVTS message format**—changed to correspond with standard Solaris message formats.
- **Apply to All Instances**—new feature that allows you to apply test options globally to all instances of a test.
- **netlbttest**—tests the GEM devices. This test replaces gemtest.

Refer to the *SunVTS 4.0 User's Guide* and the *SunVTS 4.0 Test Reference Manual* for more details about these new features.

SunVTS OPEN LOOK User Interface Support

The SunVTS OPEN LOOK user interface may not support the latest SunVTS features. For full feature support, use the SunVTS CDE or TTY interface. The SunVTS OPEN LOOK user interface will be sustained, but not enhanced, as long as OPEN LOOK is supported in the Solaris environment.

Possible Installation Problems

There are three possible installation problems that you might encounter when you attempt to install SunVTS with an installation program other than the `pkgadd` command.

Using Webstart 2.0 (4257539)

Webstart 2.0 may not install SunVTS on systems that do not have the Solaris 64-bit environment installed. Webstart 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 4.0 User's Guide*.

The Installation Directory with Webstart 2.0 (4243921) Is Not User-definable

When you attempt to install SunVTS using Webstart 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 4.0 User's Guide*.

Installation Messages Might Refer to Sun Enterprise SyMON

The current version of Sun Enterprise SyMON is now called Sun Management Center. Some SunVTS installation messages might refer to Sun Enterprise SyMON even though the more current product name is Sun Management Center.

Workaround: Consider the references of Sun Enterprise SyMON to be Sun Management Center.

Running SunVTS Online Diagnostics Through Sun Enterprise SyMON

The SunVTS 4.0 online diagnostics feature (`SUNwodu`) is not accessible through the SyMON interface.

Instead, you can start SunVTS so it will run safely in an online environment by using the `vtmui.online` command.

For example:

```
# /opt/SUNWvts/bin/vtsui.online -h hostname
```

For more information about running SunVTS software in an online or offline environment, refer to the *SunVTS 4.0 User's Guide*.

Note – Sun Management Center is the new version of Sun Enterprise SyMON. Sun Management Center does not provide access to SunVTS.

StorEdge-A5XXX Device Group Changes

As of SunVTS 3.3, the way that 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 `configd` program is supported. The `configd` program only supports Ultra Enterprise, the SPARCserver™ 1000, and SPARCcenter 2000 systems.

To display physical mapping, click the physical mapping button in the SunVTS interface. This will result in a re-mapping of the entire set of testable devices and test settings. 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 4.0 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 may 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.

The SunVTS User Interface Disappears (4122829)

In some cases, the SunVTS user interface disappears during a SunVTS test session. The SunVTS kernel is still active and the test session may continue to run.

Workaround: Restart the SunVTS user interface.

For example (starting the SunVTS *CDE* user interface):

```
# /opt/SUNWvts/bin/vtsui
```

Some Devices Not Displayed Under Physical Mapping (4228489)

Certain devices that appear under logical mapping are not displayed under physical mapping; therefore, these devices are not selectable for testing.

Workaround: Use logical mapping for testing such devices.

The `enatest` and `socaltest` Cannot Run at the Same Time (4065417)

When the SunVTS `enatest` is run concurrently with the `socaltest`, the `enatest` may fail.

Workaround: Do not select `socaltest` when `enatest` is selected and vice-versa.

The `socaltest` FATAL: Failed `ioctl` `FCIO_DIAG_XRAM` (4065420)

When the SunVTS `socaltest` is run concurrently with `disktest`, the `socaltest` may fail.

Workaround: Do not select `socaltest` when `disktest` is selected and vice-versa.

The `socaltest` Can Fail Under Heavy System Load (4213518)

Running `socaltest` with heavy system load might cause resource limitations that cause this test to fail.

Workaround: Do not run `socaltest` with a large number of instances and concurrency.

Incorrect Percentage of Tested Memory Reported in the `pmemtest` Test Chapter (4299772)

In functional test mode, `pmemtest` reads less than 100 percent of memory as described in the *SunVTS 4.0 Test Reference Manual*.

Workaround: There is no workaround, however, the next version of the *Test Reference Manual* will no longer report that `pmemtest` tests 100 percent of the system memory.

The Audio Device Driver Resets The Mixer Mode Preventing `audiotest` From Running Properly

If your platform supports the audio mixer function, the mixer must be turned off or `audiotest` will not run properly.

The audio device driver resets the mixer mode, turning it on every time the audio device is reactivated. Therefore, you must turn the mixer off each time you run `audiotest`.

Workaround: Turn the mixer mode off before running `audiotest`:

```
# mixerctl -o
```

Use the following command to turn the mixer mode on:

```
# mixerctl -e
```

Note – Failure to turn the mixer off before running `audiotest` can fill up the `/var/opt/SUNWvts/logs/sunvts.info` file with this warning message:
`audiotest.WARNING sound0: Mixer is turned on. Please turn mixer off with "mixerctl -o" before running this test again. After a long period of testing, you may lose some other information from the sunvts.info file.`

The `cpptest` is Only Supported on UltraSPARC Processors

The `cpptest` chapter in the *SunVTS 4.0 Test Reference Manual* fails to mention that the `cpptest` is only supported on UltraSPARC processors.

Workaround: None

Do Not Select `sctest`

`sctest` is not supported at this time.

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 and/or the hostname contain 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 will appear 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 will appear to hang. Sometimes removing the card will bring 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 Sun Hardware Platform Guide* provides installation instructions that may 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?* OBP 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 may 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 so 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.

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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 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 on Sun Hardware Collection AnswerBook2™.

Installation Issues

If you are upgrading from Solaris 2.6 or Solaris 7 software to Solaris 8 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 *Release Notes Supplement for Sun Hardware* (available in printed form in your Solaris 8 Media Kit)
- Solaris 8 *Sun Hardware Platform Guide*, (available in printed form in your Solaris 8 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 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 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 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 software at this time.

4. Remove the current AP configuration using “Remove the current AP configuration.” on page 15 of the *Solaris 8 Sun Hardware Platform Guide*.
5. Upgrade to Solaris 8 using “Upgrade the Solaris operating environment (if applicable) now.” on page 16 in the *Solaris 8 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.” on page 16 in the *Solaris 8 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 (`nfc`) 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§

§ - AP 2.3 has not been optimized for T300 support in this release. See "Sun StorEdge T300" on page 27.

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 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 operating system. This list does not include all bugs.

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

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 5-1 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

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

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