



# Solaris™ 9 9/05 Release Notes Supplement for Sun™ Hardware

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Solaris 9 9/05

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

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## Late-Breaking News

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This chapter provides the following information:

- “Naming of Media Kit Disks and Documentation” on page 1
- “Name Change for the Supplement CD” on page 2
- “Documents on the Software Supplement CD” on page 2
- “Systems with UltraSPARC IV+ Boards Require Solaris 9 9/05” on page 2
- “Unbundled Product Support” on page 3
- “Flash PROM Update for 64-Bit Operations” on page 3
- “DVD-ROM/CD-ROM Drives on Headless Systems (Bug ID 4365497)” on page 4
- “Sun StorEdge SAN Foundation Software and Documentation” on page 4

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## Naming of Media Kit Disks and Documentation

Not all media disks in the Solaris™ 9 9/05 release have changed content. Some disks might still be labeled “Solaris 9 9/04”, but they are still appropriate for this release. For the latest information and documentation, check this release notes supplement, the *Solaris 9 9/05 Sun Hardware Platform Guide*, the main *Solaris 9 9/05 Release Notes*, and the documentation at:

<http://docs.sun.com>

Some documents and document collections in the “Solaris 9 9/05” category on <http://docs.sun.com> might also be labelled “Solaris 9 9/04”, but they are still appropriate for this release.

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## Name Change for the Supplement CD

The CD that was previously referred to as the *Software Supplement for the Solaris 8 Operating Environment* is now called the *Solaris 9 9/05 Software Supplement*. Past and present documentation might refer to this as the "Supplement CD."

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## Documents on the Software Supplement CD

The documents supplied on the Supplement CD differ in format from past releases. The AnswerBook2™ format documentation collections are no longer supplied with the Solaris 9 9/05 release. Instead, the manuals are provided in installable packages of PDF and HTML files. After installing these packages on your system, you can access documents directly using a browser or PDF file reader, such as the Netscape Navigator™ or Adobe® Acrobat Reader program. For further information, refer to the documentation chapter in the *Solaris 9 9/05 Sun Hardware Platform Guide*.

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## Systems with UltraSPARC IV+ Boards Require Solaris 9 9/05

Several Sun hardware platforms supported by earlier versions of the Solaris 9 OS now might contain UltraSPARC® IV+ system boards, CPU/memory boards, or processor modules:

- Sun Fire V1280
- Sun Fire V490
- Sun Fire V890
- Sun Fire E2900
- Sun Fire E4900
- Sun Fire E6900
- Sun Fire E20K
- Sun Fire E25K
- Sun Fire 12K
- Sun Fire 15K

A system including an UltraSPARC IV+ processor requires installation of the Solaris 9 9/05 OS rather than an earlier Solaris 9 OS version. In a system containing a mixture of UltraSPARC IV+ boards and other boards, only domains that include an UltraSPARC IV+ processor require the Solaris 9 9/05 OS.

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## Unbundled Product Support

Although the Solaris 9 9/05 software is tested to be compatible with previous releases, some applications might not be fully ABI-compliant. Contact the supplier of the unbundled product directly for information about compatibility.

If you are upgrading from an existing version of Solaris software and have installed unbundled products, either from Sun or from a different company, you must ensure that all those products are supported on the Solaris 9 9/05 operating environment prior to upgrading. Depending on the status of each unbundled product, you have three options for each unbundled product:

- Verify that the existing version of the unbundled product is supported on the Solaris 9 9/05 operating environment.
- Acquire and install a new version of the unbundled product that is supported on the Solaris 9 9/05 operating environment. Note that in this case you might need to remove the previous version of the unbundled product prior to upgrading to the Solaris 9 9/05 operating environment. See the unbundled product documentation for more details.
- Remove the unbundled product prior to upgrading to the Solaris 9 9/05 operating environment.

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

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

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## Flash PROM Update for 64-Bit Operations

Some sun4u systems need to be updated to a higher level of OpenBoot™ firmware in the flash PROM before they can run the 64-bit mode of the Solaris 9 9/05 operating environment. Systems that can only run the 32-bit mode, such as those in the sun4m platform groups, do not require updated firmware to run Solaris 9 9/05 software.

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

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

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

For the Ultra and Ultra 2 systems, an antistatic wrist strap might be required for the update. If you need a wrist strap, send email to [strap@sun.com](mailto:strap@sun.com).

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

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

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

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## Sun StorEdge SAN Foundation Software and Documentation

The Sun StorEdge™ SAN Foundation software (SFS) incorporates kernel drivers and utilities that enable a host to connect, monitor, and transfer data on a storage area network (SAN). The Sun StorEdge SAN 4.4 release, firmware upgrades, and documentation are available on the Sun Download Center. Access the Download Center from the SAN product page at:

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# New Dynamic Reconfiguration (DR) Documentation

This release introduces the *Sun Fire High-End and Midrange Systems Dynamic Reconfiguration User's Guide*, part number 819-1501-10, which replaces the following three documents:

- *Sun Fire High-End Systems Dynamic Reconfiguration User Guide*
- *Sun Fire Midrange Systems Dynamic Reconfiguration User Guide*
- *System Management Services (SMS) Dynamic Reconfiguration User Guide*

For the latest information, refer to the online version of the above document at:

<http://www.docs.sun.com>

The following late-breaking information made it into the online edition of the new document, but not the version included on the Supplemental CD:

You cannot use the DR connect and configure operations to add an I/O board to a domain in a single-partition midrange system that is configured with one or more UltraSPARC IV+ system boards. This restriction is due to the absence of a second domain in which the I/O board can be tested. However, you can use the DR unconfigure and disconnect commands on an I/O board in the described system.



## End-of-Support Products

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This chapter announces:

- [“Products Not Supported in the Solaris 9 9/05 Operating Environment”](#) on page 7
- [“Future End-of-Support Products”](#) on page 9

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## Products Not Supported in the Solaris 9 9/05 Operating Environment

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

### sun4d Servers

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

- SPARCserver™ 1000 systems
- SPARCcenter™ 2000 systems

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

### Ethernet Quad Drivers `qe` and `qec`

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

## Alternate Pathing Multipath I/O

Alternate Pathing (AP) multipath I/O technology is no longer included in this release. It has been replaced by the newer, more scalable technologies of MPxIO and IPMP. These technologies present better overall multipath solutions with refined, user-friendly interfaces that are well integrated with Solaris. IPMP also provides true automatic switching for networks upon error detection.

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

## Token Ring Network Drivers

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

## PC File Viewer

PC file viewer is no longer supported in this release. Similar functionality in viewing PC files is now available using the Sun StarOffice™ 6.0 Office Productivity Suite. StarOffice can read and write more than 100 different file formats used by major desktop applications, including Microsoft Office, Lotus, WordPerfect, WordStar, FrameMaker, AutoCAD, Photoshop, and more. For more information, go to:

<http://www.sun.com/staroffice>

## PC Launcher

PC launcher is no longer supported in this release.

## SunFDDI and SunHSI/S Drivers

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

## ShowMe TV

ShowMe TV™ is no longer supported in this release.

## Solaris Maintenance Updates

The Solaris Maintenance Updates (MUs), a separate patch collection provided in conjunction with the Solaris Update Releases, are not available for this release, neither as a CD image nor as a download. The preferred mechanism for updating a Solaris release—for example, to update from the Solaris 9 8/03 operating environment to the Solaris 9 12/03 operating environment—is to use the "upgrade" mechanism (see the *Solaris 9 Installation Guide*).

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## Future End-of-Support Products

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

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**Note** – Support for the following products has already been discontinued in Solaris 10 releases.

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### 1e Drivers

1e network drivers might no longer be supported in a future release.

### SPC Driver

The Serial Parallel Controller on S-bus (SPC/S) driver, `stc(7D)`, might no longer be supported in a future release.

### Sun4m Platform Group

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

- SPARCclassic
- SPARCstation™ LX / LX+
- SPARCstation 4
- SPARCstation 5
- SPARCstation 10
- SPARCstation 20

## Tape Devices

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

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

## Storage Interfaces

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

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

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

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

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

## Sun StorEdge Systems

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

- Sun StorEdge A3000 system
- Sun StorEdge A3500 system
- Sun StorEdge A3500FC system
- Sun StorEdge A1000 array



## Open Issues

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This chapter discusses:

- “Application-Specific Issues” on page 13
- “Platform-Specific Issues” on page 14
- “Other Issues” on page 20

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## Application-Specific Issues

### SunScreen SKIP 1.1.1 Not Supported

If you have SunScreen™ SKIP 1.1.1 software currently installed on your system, you should remove the SKIP packages before installing or upgrading to the Solaris 9 9/05 operating environment. Remove these packages: SICGbdcdr, SICGc3des, SICGcdes, SICGcrc2, SICGcrc4, SICGcsafe, SICGes, SICGkdsup, SICGkeymg, SICGkisup

### SunVTS

The SunVTS diagnostic software now has its own release note document. For the latest information on features and bugs, see the *SunVTS 5.1 Patch Set 10 Release Notes*, part number 819-2825-10, at:

<http://sun.com/documentation>

# Sun Remote System Control

This information on Sun Remote System Control (RSC) 2.2.3 hardware and software issues can be found in the *Sun Remote System Control (RSC) 2.2.3 Release Notes*, part number 819-2022, at:

<http://www.sun.com>

## SunForum

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

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## Platform-Specific Issues

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

To install the Solaris 9 9/05 operating environment on specific Sun Fire and Netra™ servers, you must first update the firmware on the server. If you do not update the firmware before you install the Solaris 9 9/05 software, the server panics. This problem affects the following servers:

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

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

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

The ok prompt is displayed.

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

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

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

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

Firmware update patches are available at:

<http://sunsolve.sun.com>

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

## Netra Servers

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

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

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

Workaround:

1. Check the system's PROM version.
  - If you have OpenBoot PROM version 4.0.9 or later, no action is needed.
  - If the OpenBoot PROM version is earlier than 4.0.9, boot the X1 system in Solaris 8.
2. Install patch 111092-02 or later (this is a prerequisite to Step 3). Do not reboot the system between Steps 2 and 3.
3. Install patch 111952-02 or later.

This installs OpenBoot PROM version 4.0.9 or later.

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

## Sun StorEdge Systems

### LUN Missing After Changing Target ID (Bug ID 4399108)

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

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

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

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

## Sun Fire Systems

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

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

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

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

Workaround:

1. Begin your Solaris installation using either a `ttysa` or PCI-based graphics card with the console.
2. Install Solaris software as usual.

3. Perform a power cycle.

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

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

The fix for Bug ID 4717004 removed the `bbc` and `gptwo` drivers. Even though these drivers have been deleted, the V880 software delivered with Solaris 9 9/05 still attempts to load these drivers, causing the following messages to appear during boot:

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

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

## Sun Fire V250 Installation

The `SUNWCXa11` software metacluster must be installed on a Sun Fire V250.

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

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

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

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

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

## prtdiag Does Not Show System Board After the Board Is Added to the Domain Using DR (BugID 6309113)

If an UltraSPARC IV+ board is added to a Sun Fire V1280 domain via dynamic reconfiguration, the `prtconf` and `prtdiag` programs do not report the nodes corresponding to the UltraSPARC IV+ CPUs as being in the system. These reports remain unchanged until the system is rebooted.

## Sun Fire 15K/12K Systems

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

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

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

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

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

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

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

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

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

If Patch 112829-05 is not installed, no data is returned. If this happens, perform the following procedure:

1. Apply patch 112829-05 to both system controllers according to the instructions in the patch README file.

Note special installation instructions.

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

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

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

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

`SBw/Px/Ey Jz`

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

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

## Sun Blade Systems

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

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

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

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

---

## Other Issues

### Network Drivers Installed by Default

The Solaris Installation CD automatically installs the network drivers from the Supplement CD. Drivers for the SunATM™ and SunHSI/P™ cards are now installed by default when the Solaris 9 9/05 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.

### spec\_open Failure Causes Point Mount Failure (Bug ID 4431109)

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

Workaround: Type the following command:

```
# cat s55initfc
devfsadm -i ssd
```

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

### Last Connection to Subsystem Might Detach (Bug ID 4432827)

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

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

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

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

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

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

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

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

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

```
qlc_enable_pm = 0
```

## Devices Might Not Appear After Boot (Bug ID 4456545)

qlc might remain offline, preventing devices appearing after boot.

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

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

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

Workaround:

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

```
h# of pil!
```

## Untagged Devices Incorrectly Supported (Bug ID 4460668)

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

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

The default timeout value for the SCSI portion of the SunSwift™ PCI Ethernet/SCSI host adapter (X1032A) card does not meet the timeout requirements of Sun's SCSI DVD-ROM drive (X6168A). With marginal media, the DVD-ROM occasionally experiences timeout errors. The only exceptions are Sun Fire 6800, 4810, 4800, and 3800 systems, which overwrite the SCSI timeout value by means of OpenBoot PROM.

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

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

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

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

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

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

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

Workaround: Begin Solaris installation using the Solaris 9 9/05 Software 1 of 2 CD.

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

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

## Patch Obsoleted for Firmware Upgrade (Bug ID 5053382)

The package `SUNWfcbp1` has been removed from the Supplement CD for this Solaris release to prevent installation problems on some systems. This package is no longer needed to upgrade Fibre Channel backplane firmware. Download Patch 117814 if an upgrade of Fibre Channel backplane firmware to version 922A or later is needed.



# Dynamic Reconfiguration on Sun Fire Midrange Systems

---

This chapter describes major issues related to dynamic reconfiguration (DR) on Sun Fire midrange (E6900/E4900/6800/4810/4800/3800) systems running Solaris 9 9/05 software. It includes the following topics:

- [“General Information” on page 25](#)
- [“Known DR Software Bugs” on page 27](#)

---

## General Information

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

## Minimum SC Firmware

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

---

**Note** – To take advantage of the latest firmware features and bug fixes, run the most recent SC firmware on your Sun Fire midrange system. For the latest patch information, see <http://sunsolve.sun.com>

---

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

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

## System Board Classes

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

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

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

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

## Sun Management Center

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

## Upgrading System Firmware

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

---

## Known DR Software Bugs

This section lists important DR bugs.

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

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

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

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

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

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

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

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

Workaround: Install VM 3.2 Patch 01.

## Cannot DR Out cPCI IB with P0 Disabled (BugID 4798990)

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

```
# cfgadm -c unconfigure NO.IB7
cfgadm: Hardware specific failure: unconfigure NO.IB7: Device
  busy:/ssm@0,0/pci@1b,700000/pci@1
```

where NO.IB7 is a compact PCI I/O board with P0 disabled.

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

## panic: mp\_cpu\_quiesce: cpu\_thread != cpu\_idle\_thread (BugID 4873353)

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

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

# Dynamic Reconfiguration on Sun Fire High-End Systems

---

This chapter describes major domain-side dynamic reconfiguration (DR) bugs on Sun Fire high-end (Sun Fire E25K/E20K/15K/12K) systems running Solaris 9 9/05 software. It includes the known bugs at the time of this release.

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

---

## Known Bugs

### Deleteboard Shows Leakage Error (BugID 4730142)

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

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

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

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

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

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

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

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

## System Panic During `ddi_attach` sequence (BugID 4797110)

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

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

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

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

Description: Under certain error conditions, using DR to unconfigure a processor can leave that processor in the powered-off state. If `psradm(1M)` is then used to transition the processor to the off-line state, a system panic may result. Factors

contributing to the problem are that Solaris does not expect processors to be in the powered-off state long-term, and `psradm(1M)` does not allow transitioning of processors to the powered-off state.

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

## `cfgadm_sbd` Plugin Signal Handling Is Broken (BugID 4498600)

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

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

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

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

When permanent memory is unconfigured, a target board is identified and unconfigured first. Once a target board is ready, the contents of the source board (the permanent memory) are copied to the target board. The memory controllers on the target board are then "renamed" (programmed) with the same address range as the source board. This means that if the source board contained any retired pages, these pages would not be dangling pages after the rename. They would point to valid addresses, but the physical memory behind those addresses is in the target board. The problem is that the physical memory is probably good (does not contain ECC errors).

Workaround: None.

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

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

Workaround: Disable `automatic_page_removal`.

## `prtdiag` Still Shows System Board After the Board Is Removed from the Domain Using DR (BugID 6298989)

If an UltraSPARC IV+ board is removed from a Sun Fire 20K or 25K domain via dynamic reconfiguration, the `prtconf` and `prtdiag` programs still report the nodes corresponding to the UltraSPARC IV+ CPUs as being in the system. These reports remain until the system is rebooted.

## Sun Enterprise Midrange Systems

---

This chapter contains the latest information for the Sun Enterprise systems running the Solaris 9 9/05 operating environment. These include the Sun Enterprise 6500, 6000, 5500, 5000, 4500, 4000, 3500, and 3000 systems, and the Sun Fire E2900, E4900 and E6900 systems. This chapter covers:

- [“Dynamic Reconfiguration on Sun Enterprise 6x00, 5x00, 4x00, and 3x00 Systems” on page 33](#)
- [“Known Bugs” on page 37](#)

The Solaris 9 9/05 operating environment includes support for all CPU/memory boards and most I/O boards in the systems mentioned above.

---

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

These release notes provide the latest information on Dynamic Reconfiguration (DR) functionality for Sun Enterprise 6x00, 5x00, 4x00, and 3x00 systems running the Solaris 9 9/05 operating environment. For more information on Sun Enterprise Server Dynamic Reconfiguration, refer to the *Dynamic Reconfiguration User's Guide for Sun Enterprise 3x00/4x00/5x00/6x00 Systems*.

The Solaris 9 9/05 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 that 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
```

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

## Software Notes

### ▼ To Enable Dynamic Reconfiguration

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

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

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

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

```
set kernel_cage_enable=1
```

Setting this variable enables the memory unconfiguration operation.

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

## Quiesce Test

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

## Disabled Board List

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

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

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

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

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

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

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

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

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

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

## Disabled Memory List

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

## Unloading Detach-Unsafe Drivers

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

## Interleaved Memory

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

- **To determine if memory is interleaved, use the `prtdiag` command or the `cfgadm` command.**
- **To permit DR operations on CPU/memory boards, set the NVRAM `memory-interleave` property to `min`.**

For related information about interleaved memory, see [“Memory Interleaving Set Incorrectly After a Fatal Reset \(Bug ID 4156075\)”](#) on page 37 and [“DR: Cannot Unconfigure a CPU/Memory Board That Has Interleaved Memory \(Bug ID 4210234\)”](#) on page 37.

## Self-Test Failure During a Connect Sequence

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

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

---

# Known Bugs

The following list is subject to change at any time.

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

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.

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

This causes memory to be interleaved whenever the system is booted. However, you might find this option to be unacceptable, as a memory board containing interleaved memory cannot be dynamically unconfigured. See [“DR: Cannot Unconfigure a CPU/Memory Board That Has Interleaved Memory \(Bug ID 4210234\)” on page 37](#).

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

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

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

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

Workaround: Shut down the system before servicing the board, then reboot afterward. To permit future DR operations on the CPU/memory board, set the NVRAM `memory-interleave` property to `min`. See also [“Memory Interleaving Set Incorrectly After a Fatal Reset \(Bug ID 4156075\)” on page 37](#) for a related discussion on interleaved memory.

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

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

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

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

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

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

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

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

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

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

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

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

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

Workaround: Perform a DR detach operation:

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

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

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

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



## Sun Enterprise 10000 Systems

---

This chapter contains the release notes for the following features on the Sun Enterprise 10000 server:

- [“Dynamic Reconfiguration Issues” on page 41](#)
- [“InterDomain Networks \(IDN\)” on page 43](#)
- [“Solaris Operating Environment” on page 43](#)

---

## Dynamic Reconfiguration Issues

### DR Model 3.0

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

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

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

---

**Note** – DR model 3.0 is the only DR model supported for the Solaris 9 9/05 release. For details on DR model 3.0, refer to the *Sun Enterprise 10000 Dynamic Reconfiguration User Guide*.

---

## General Issues

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

### DR and Bound User Processes

For Solaris 9 9/05, DR no longer automatically unbinds user processes from CPUs that are being detached. You are now required to perform this operation before initiating a detach sequence. The drain operation fails if CPUs are found with bound processes.

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

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

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

```
# devfsadm -i ngdr
```

---

# InterDomain Networks (IDN)

## General Issues

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

---

# Solaris Operating Environment

This section contains general issues, known bugs, patches, and notes about the Solaris 9 9/05 operating environment on the Sun Enterprise 10000 server.

## General Issues

Dynamic reconfiguration (DR) and InterDomain Networks are supported in the Solaris 9 9/05 release.

---

**Note** – Before you begin the fresh installation or upgrade of the Solaris 9 9/05 operating environment on a Sun Enterprise 10000 domain, you must install SSP 3.5 on your System Service Processor. SSP 3.5 supports the Solaris 9 9/05 operating environment on Sun Enterprise 10000 domains.

---



---

**Note** – Do not use the Solaris 9 9/05 Installation CD to install or upgrade the Solaris operating environment on Sun Enterprise 10000 domains. Begin installation from the Solaris 9 9/05 Software 1 of 2 CD. You can follow the installation procedures described in the *Sun Enterprise 10000 SSP 3.5 Installation Guide and Release Notes*, if you substitute the Solaris 9 9/05 Software CDs for the Solaris 8 10/01 CDs.

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## Solaris 9 9/05 and Boot Disk Partition Sizes

If you are upgrading the operating environment from Solaris 2.6 to Solaris 9 9/05 and you used the partition layout suggested in the *SMCC Hardware Platform Guide Solaris 2.6*, the partitions might not be large enough for the upgrade. For instance, the `/usr` partition must be at least 653 megabytes. If `/usr` is smaller than the size needed to perform the upgrade, `suninstall` uses the Dynamic Space Reallocation (DSR) mode to reallocate the space of the disk partitions.

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

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

## OpenBoot PROM Variables

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



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

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

```
ok printenv
```

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

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

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