

Sun SPARC Enterprise T5440 Server

Product Notes



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Sun SPARC Enterprise T5440 Product Notes

These product notes contain late-breaking information about Oracle's Sun SPARC Enterprise T5440 server, including minimum software and firmware supported, late-breaking functionality or performance issues, and documentation additions and errata.

This document contains the following sections:

- [“Important New Information About the Sun SPARC Enterprise T5440 Server” on page 1](#)
- [“Support for the Sun SPARC Enterprise T5440 Server” on page 2](#)
- [“Supported Versions of Solaris and Sun System Firmware” on page 4](#)
- [“Known Issues” on page 16](#)
- [“Documentation Additions and Errata” on page 21](#)

Important New Information About the Sun SPARC Enterprise T5440 Server

New System Firmware

The system is preloaded with Firmware 7.3.1.a or later. This firmware supports the following features:

- Support for Solaris 10 9/10
- Support for Oracle LDOMs 2.0

- Fix for CR ID
-

Support for the Sun SPARC Enterprise T5440 Server

This section includes where to obtain technical support, software, and documentation, including the following:

- “Technical Support” on page 2
- “Downloading Documentation” on page 2
- “Cryptographic Support” on page 3

Technical Support

If you have any technical questions or issues that are not addressed in the Sun SPARC Enterprise T5440 server documentation, contact your local support services representative. For customers in the U.S. or Canada, call 1-800-USA-4SUN (1-800-872-4786). For customers in the rest of the world, find the World Wide Solution Center nearest you by visiting the web site:

(<http://support.oracle.com>)

Downloading Documentation

Instructions for installing, administering, and using your servers are provided in the Sun SPARC Enterprise T5440 documentation set. The entire documentation set is available for download from the following web site:

(<http://www.oracle.com/documentation/>)

Note – Information in these product notes supersedes the information in the Sun SPARC Enterprise T5440 documentation set.

Cryptographic Support

The UltraSPARC® T2 Plus multicore processor provides hardware-assisted acceleration of several types of cryptographic operations:

- Symmetric operations (AES, 3DES, and RC4)
- Asymmetric operations (RSA, DSA, Diffie Hellman, and Elliptic Curve)
- Hashing (SHA1, SHA256, and MD5)
- Random number generation

The Solaris 10 8/07 OS or later provides the multithreaded device drivers that support the hardware-assisted cryptography.

Enabling IPsec Cryptographic Hardware Acceleration

To enable IPsec cryptographic operations to use the cryptographic hardware on the UltraSPARC T2 Plus processor, you must obtain and install the IPsec activation package, when it becomes available. Until the activation file and required patch are available, you can use software acceleration.

For information about obtaining the IPsec activation package, visit:

(<http://www.oracle.com/technetwork>)

Once you have the IPsec activation package, use the `pkgadd` command to install the activation package and use the `patchadd` command to install the patches as shown in the following example:

```
# patchadd 137111-03
# pkgadd sol-10-u4-gz-sparc-cryptoactivation.pkg
# patchadd 137291-03
```

Note – You must reboot the system after installing the activation package to complete the activation.

Installing the package and patches enables IPsec to automatically and transparently use the UltraSPARC T2 Plus cryptographic hardware. For more information about IPsec, refer to the *IPsec and IKE Administration Guide* at: <http://docs.sun.com>.

Supported Versions of Solaris and Sun System Firmware

Your server is preinstalled with the OS, patches, and firmware, but you can install the same or another supported version. Be aware that some versions of the OS require installation of mandatory patches. See [“Patch Information” on page 8](#).

If you install the OS, you will not have access to the additional software that was preinstalled at the factory. See [“Preinstalled Software” on page 5](#).

This topic contains the following sections:

- [“Supported Versions of the Solaris OS” on page 4](#)
- [“About System Firmware” on page 4](#)
- [“Supported Versions of System Firmware” on page 5](#)

Supported Versions of the Solaris OS

The following are the supported versions of the Solaris OS for the Sun SPARC Enterprise T5440 server:

- Solaris 10 8/07 (U4) plus patches
- Solaris 10 5/08 (U5) plus patches
- Solaris 10 10/08 (U6) plus patches
- Solaris 10 5/09 (U7)
- Solaris 10 10/09 (U8)
- Solaris 10 9/10 (U9)

About System Firmware

The System Firmware controls various aspects of the host and the service processor. The System Firmware comprises the following individual firmware components

- Integrated Lights Out Manager (ILOM) firmware
- OpenBoot™ firmware
- POST firmware
- Hypervisor firmware
- VBSC firmware
- SAS controller firmware

System firmware updates are available from SunSolveSM (<http://support.oracle.com>) as patch releases. When you update the system firmware, all of the individual firmware components are updated. With the exception of the SAS controller firmware, you cannot update firmware components individually. Refer to the *Sun SPARC Enterprise T5440 Server Installation and Setup Guide* for more information about updating the server firmware.

Supported Versions of System Firmware

The following are the supported versions of the system firmware for the Sun SPARC Enterprise T5440 server:

- 7.1.5.b (Patch ID 136937-01)
- 7.1.5.c (Patch ID 136937-02)
- 7.1.7.d (Patch ID 136937-03)
- 7.1.8.a (Patch ID 136937-04)
- 7.2.0 (Patch ID 139446-01)
- 7.2.2.b (Patch ID 139446-02)
- 7.2.2.e (Patch ID 139446-03) — Minimum supported version for systems equipped with 1.6-GHz processors
- 7.2.4.e. (Patch ID 139446-04)
- 7.2.7.d (Patch ID 139556-08) — Minimum supported version for systems equipped with the Sun Flash Accelerator F20 PCIe card
- 7.2.9.a (Patch ID 139446-11)
- 7.3.1.a (Patch ID 145678-02) or later (preinstalled)

Preinstalled Software

This section lists and describes the software preinstalled on your server. The preinstalled software is ready to use.

Note – The Solaris OS is preinstalled both in root disk Slice 0 for normal operations, and in Slice 3 along with Live Upgrade software to provide an Alternate Boot Environment (ABE). The ABE allows upgrading the OS or performing system maintenance tasks without reducing performance. An identical (bootable) copy of the root partition (including the OS, and applications) is installed as an ABE in Slice 3.

The following table lists the software preinstalled on your server.

TABLE: Preinstalled Software

Software	Location	Function
Solaris 10 10/09	Root disk Slice 0 (and on Slice 3 in the ABE) with patches (see “Patch Information” on page 8)	Operating system
Sun™ Studio 1.2 U1	/opt/sunstudio12.1	C, C++, and Fortran compiler
LDoms Manager 1.3	/opt/SUNWldm/	Manages Logical Domains
LDoms MIB	/opt/SUNWldmib	LDoms Management Information Base
CMT Tools 1.2	/opt/sunstudio12.1/bin /opt/sunstudio12.1/prod/bin	Sun Studio Developer Tools
Sun Code Generator for SPARC Systems 4.3.2	/opt/gcc and /opt/SUNW0scgfss	GCC compiler for SPARC Systems

This topic contains the following sections:

- [“Cool Tools for Sun Servers With CoolThreads Technology” on page 6](#)
- [“Logical Domains” on page 7](#)
- [“Solaris Live Upgrade” on page 7](#)
- [“Sun Studio - C, C++, and Fortran Compilers and Tools” on page 8](#)

Cool Tools for Sun Servers With CoolThreads Technology

Cool Tools provide a collection of freely available tools designed to enable fast and efficient development and deployment of optimally configured software solutions on CoolThreads™ servers. These tools significantly improve performance and time-to-market for applications running on these servers.

An overview of the Cool Tools and full documentation is available at the following URL:

[\(http://www.oracle.com/technetwork/systems/\)](http://www.oracle.com/technetwork/systems/)

Not all of the Cool Tools listed on the Cool Tools web page are preinstalled on your server. The following are not included:

- Consolidation Tool
- CoolTuner
- Cool Stack
- Corestat

- Cooltst
- Sun Application Porting Assistant

Note – The Sun Code Generator GCC compiler is preinstalled. For lists of preinstalled software, see [“Preinstalled Software”](#) on page 5.

Logical Domains

Using Logical Domains (LDoms) increases your server usage, efficiency, and return on investment. LDoms also reduce your server footprint. The LDoms Manager software creates and manages logical domains, and maps logical domains to physical resources.

Note – The LDoms MIB must be configured before it is ready to use. A README file with configuration instructions is located in the LDoms MIB installation directory, `/opt/ldoms_mib`.

For more information on LDoms, go to:

[\(http://www.oracle.com/technetwork/logical-domains/\)](http://www.oracle.com/technetwork/logical-domains/)

Solaris Live Upgrade

Solaris Live Upgrade technology significantly reduces service outage during an OS upgrade. This technology enables the Solaris OS to run normally during an upgrade or normal maintenance on an inactive boot environment.

Your server is configured with a `liveupgrade` partition on Slice 3 on the boot disk that contains an exact duplicate of the `root` partition (including the OS, Enterprise Installation Services (EIS), and applications). This `liveupgrade` partition is an Alternate Boot Environment (ABE).

For more information about Solaris Live Upgrade, go to:

[\(http://www.oracle.com/technetwork/systems/\)](http://www.oracle.com/technetwork/systems/)

Solaris Live Upgrade software is preinstalled on your server. You might need to install a different version of Solaris Live Upgrade depending on which Solaris OS version you are installing or upgrading.

Sun Studio - C, C++, and Fortran Compilers and Tools

Sun Studio delivers high performance by optimizing C, C++, and Fortran compilers for the Solaris OS on multicore systems.

For an overview and documentation, go to:

(<http://www.oracle.com/technetwork/server-storage/solarisstudio/>)

Supported Sun Explorer Utility Version

The Sun SPARC Enterprise T5440 server is supported by the Sun Explorer Data Collector 5.12 (or later) data collection utility, but is not supported by earlier releases of the utility. Installing Sun Cluster or Sun Net Connect software from the preinstalled Java ES package could automatically install an earlier version of the utility on your system. After installing any of the Java ES software, determine whether an earlier version of the Sun Explorer product has been installed on your system by typing the following:

```
# pkginfo -l SUNWexpl0
```

If an earlier version exists, uninstall it and install version 5.12, or later. To download Sun Explorer Data Collector 5.12, go to:

(<http://support.oracle.com>)

Patch Information

Patches are available at

(<http://support.oracle.com>)

This topic contains the following sections:

- “Mandatory Patch Information for the Solaris 10 8/07 OS” on page 9
- “Mandatory Patch Information for the Solaris 10 5/08 OS” on page 10
- “Mandatory Patch Information for the Solaris 10 10/08 OS” on page 10
- “Patches for Option Cards” on page 11

Mandatory Patch Information for the Solaris 10 8/07 OS

Patches are available at

<http://support.oracle.com>

The following patches are mandatory for systems installed with the Solaris 10 8/07 OS:

- 124235-02 or later
- 125369-13
- 125416-06
- 125476-02
- 126434-05
- 127111-08 or later
- 119254-51 or later
- 125891-01
- 127755-01
- 127127-11
- 137111-03 or later
- 137291-01 or later
- 138048-05 or later
- 138312-01

Note – See [“Install the Solaris 10 8/07 OS and Required Patches”](#) on page 22 for the correct installation procedure.

Before contacting support, ensure that all mandatory patches are installed on your server. In addition to installing these patches, check the SunSolve web site on a regular basis for the availability of new patches.

To determine if a patch is present, see [“Patch Information”](#) on page 8.

Note – These patches might not be included in some versions of the preinstalled or preloaded software on your server. If the patches are missing from your server, download them from SunSolve as described in [“Patch Information”](#) on page 8.

Mandatory Patch Information for the Solaris 10 5/08 OS

Patches are available at

(<http://support.oracle.com>)

The following patches are mandatory for systems installed with the Solaris 10 5/08 OS:

- 137111-03 or later
- 137291-01 or later
- 138048-05 or later
- 138312-01
- 119254-58
- 138866-01
- 137137-09
- 138283-05
- 138888-01

Before contacting support, ensure that all mandatory patches are installed on your server. In addition to installing these patches, check the SunSolve web site on a regular basis for the availability of new patches.

To determine if a patch is present, see [“Patch Information” on page 8](#).

Note – These patches might not be included in some versions of the preinstalled or preloaded software on your server. If the patches are missing from your server, download them from SunSolve as described in [“Patch Information” on page 8](#).

Mandatory Patch Information for the Solaris 10 10/08 OS

Patches are available at

(<http://support.oracle.com>)

The following patches are mandatory for systems installed with the Solaris 10 10/08 OS:

- 138888-01

Before contacting support, ensure that all mandatory patches are installed on your server. In addition to installing these patches, check the SunSolve web site on a regular basis for the availability of new patches.

To determine if a patch is present, see [“Patch Information” on page 8](#).

Note – These patches might not be included in some versions of the preinstalled or preloaded software on your server. If the patches are missing from your server, download them from SunSolve as described in [“Patch Information” on page 8](#).

Patches for Option Cards

If you add option cards to your server, refer to the documentation and README files for each card to determine if additional patches are needed.

Managing Power Use by Idle Disk Drives

The Sun SPARC Enterprise T5440 server supports Solaris OS disk power management features. To learn how to use these features, refer to:

(www.oracle.com/technetwork)

The article, *Managing the Power Used by Idle Disks in Servers Running the Solaris 8 OS or Above*, describes when and how to manage the power used by idle disks on servers running the Solaris 8 OS and above.

Support for Mixed Clock Speeds

In multiple CMP/memory module configurations, all CMP modules must operate at the same clock speed. Mixed CMP module clock speeds are not supported.

Support for SSD Storage

The Sun SPARC Enterprise T5440 server supports 2.5-inch, SATA Enterprise SSDs for internal storage. These solid-state storage devices are hot-pluggable and can be used in place of or in combination with 2.5-inch SAS hard drives. The current 2.5-inch drive tray is fully compatible with these SSD units.

The integrated hard drive controller supports RAID 0 and RAID 1 on the SSDs as well as on the disk drives.

If SSDs are installed in the field, SAS controller firmware must be checked and updated. Instructions for this firmware check and update procedure are provided in [“Update the SAS Controller Firmware” on page 24](#).

Note – At the time of this publication, the Sun SPARC Enterprise T5440 server does not support SSDs when used in a Sun Solaris Cluster environment or configuration.

This topic contains the following sections:

- [“Using a SSD as a Boot Device” on page 12](#)
- [“Updating the SAS Controller Firmware to Support SSDs” on page 13](#)

Using a SSD as a Boot Device

SSDs have a number of performance advantages compared to more traditional disk technologies. However, these SSDs are currently of a smaller capacity than traditional disk drives.

The default Solaris OS boot image for the Sun SPARC Enterprise T5440 server does not fit on a 32-gigabyte SSD. If you want to use an SSD as a boot device, you must adjust the partition sizes on the boot image to fit on the SSD.

In addition, if you are using an SSD as a boot device, you must ensure that it is configured with enough swap space. This swap space is used for the following:

- **Virtual memory.** The amount of virtual memory available to applications running on the Solaris OS is roughly defined by the amount of physical memory, plus the amount of swap space. Use the `swap(1M)` command to determine the amount of swap space available in your system.

If you are running out of virtual memory, you should either install additional physical memory, or add swap space using the procedures described in the `swap(1M)` man page.

Note – You can configure a traditional disk drive (73GB, 146GB, or 300GB), or an additional SSD, as swap space.

- **Solaris OS crash dumps.** If a critical error causes the Solaris OS to abort, the Solaris OS is designed to save a crash dump image on the swap device. This image contains critical information needed to diagnose the nature of any errors which caused the crash, and is copied from the swap partition during the next system boot.

If you do not have enough swap space on the SSD to save the system crash dump, you can use the `dumpadm(1M)` command to configure an additional device as a Solaris crash dump site. In addition, you can use the `dumpadm(1M)` command to control the content type of the pages that will be saved in a crashdump image, potentially reducing the size of the crashdump image.

Related Information

- For additional information on the SSDs, refer to the *32-GByte, 2.5-inch, SATA Enterprise Solid-State Drive Guide*.
- For instructions on installation and removal of SSDs, use the procedures described in the *Sun SPARC Enterprise T5440 Server Service Manual*. These instructions apply to both the disk-based hard drives and SSDs.

Updating the SAS Controller Firmware to Support SSDs

If SSDs will be installed in the server, the 1068E SAS controller firmware must be updated using the following software patch:

- 140949-01

Patches are available at:

(<http://support.oracle.com>)

This topic contains the following tasks:

- “Check the Current Version of the SAS Controller Firmware” on page 13
- “Update the SAS Controller Firmware” on page 14

▼ Check the Current Version of the SAS Controller Firmware

Use the OBP `probe-scsi-all` command to display the version of the SAS controller firmware currently installed on your system.

- **Type the following:**

```
{0} ok probe-scsi-all
/pci@400/pci@0/pci@8/scsi@0

MPT Version 1.05, Firmware Version 1.23.04.00

Target 0
Unit 0   Disk      SEAGATE ST914602SSUN146G0603      286739329 Blocks, 146 GB
        SASAddress 5000c5000ebc1d4d  PhyNum 0
Target 1
...
```

In this example, the firmware version is 1.23.04.00. The minimum SAS controller firmware version which supports SSDs is 1.27.00.00.

▼ Update the SAS Controller Firmware

1. Download the latest version of the firmware image for the LSI 1068E SAS controller from the (<http://support.oracle.com>) site.

As described earlier, the required patch for the server is 140949-01

2. Log into the system as the root user.
3. Identify the controller.

```
# ls -al /dev/cfg
total 20
drwxr-xr-x  5 root  root      512 Apr 15  2008 .
rwxr-xr-x  18 root  sys      5120 Jan 22  15:33 ..
lrwxrwxrwx  1 root  root      45 Apr 15  2008 c0 ->
../../../../devices/pci@400/pci@0/pci@1/scsi@0:scsi
drwxr-xr-x  2 root  root      512 Apr 15  2008 usb0
drwxr-xr-x  2 root  root      512 Apr 15  2008 usb1
drwxr-xr-x  2 root  root      512 Apr 15  2008 usb2
```

In this example, the controller is located at c0.

4. Use the `raidctl` command to update the firmware image.

```
# raidctl -F firmware_image.fw 0
Update flash image on controller 0 (yes/no)? y
ROM image contains MPT firmware version 1.xx.xx
```

5. Shut down the system and perform a DC power cycle to load the new firmware.

Changed Behavior When Operating the Solaris OS With Logical Domains

This section describes the changes in behavior in using the Solaris OS that occur once a configuration has been created by the Logical Domains Manager.

Note – OpenBoot firmware is not available after the Solaris OS has started, because it is removed from memory. To reach the `ok` prompt from the Solaris OS, you must halt the domain. You can use the Solaris OS `halt` command to halt the domain.

The following table shows the expected behavior of halting or rebooting the control (primary) domain.

TABLE: Expected Behavior of Halting or Rebooting the Control (primary) Domain

Command	Other Domain Configured?	Behavior
halt	No	Host powered off and stays off until powered on at the SP.
	Yes	Resets and boots if the variable <code>auto-boot?=true</code> . Resets and halts at <code>ok</code> prompt if the variable <code>auto-boot?=false</code> .
reboot	No	Reboots the host, no power off.
	Yes	Reboots the host, no power off.
shutdown -i 5	No	Host powered off, stays off until powered on at the SP.
	Yes	Resets and reboots.

Processor Identification

Different platforms and platforms of the same model might have different processor IDs for identical configurations. For example, on UltraSPARC T1 CPU-based platforms, the processor IDs start with processor ID 0. But other platforms, including those based on the UltraSPARC T2 Plus CPU, might not have a processor ID 0. The Solaris `psrinfo` command might display output similar to the following for platforms based on the UltraSPARC T2 Plus processor:

8	on-line	since 09/18/2007 21:26:25
9	on-line	since 09/18/2007 21:26:30
16	on-line	since 09/18/2007 21:26:30
17	on-line	since 09/18/2007 21:26:30

The processor IDs exported to a guest domain on a platform running multiple guest domains with a virtual machine manager might represent a virtual abstraction. Within each guest domain, each processor ID visible to the software will be a unique integer value.

Software running in different guest domains on the same physical machine might see the same or different sets of virtual processor IDs. If domaining is enabled, the virtual processor IDs and physical processor IDs are never the same. For information about the mapping between virtual and physical CPU numbers, see the *Logical Domains (LDom)s 1.2 Administration Guide*.

Processor IDs are simply unique integer values in the domain where the software is running. The integer value will fit in the type `processorid_t`. Also refer to the `p_online(2)` man page.

Known Issues

This section includes the following:

- [“Hardware and Mechanical Issues” on page 16](#)
- [“Firmware and General Software Issues” on page 18](#)

Hardware and Mechanical Issues

This section describes hardware issues known to exist at this release of the Sun SPARC Enterprise T5440 server.

TABLE: Hardware and Mechanical Issues on the Sun SPARC Enterprise T5440 Server

CR ID	Description	Workaround
	<p>Some PCIe cards do not have enough clearance for external cables when installed in PCIe Slot 7. The cable management arm (CMA) release button may interfere with external cables and/or connectors for the following PCIe cards when installed in PCIe Slot 7:</p> <ul style="list-style-type: none">• XVR-300 frame buffer card• Any PCIe card with an external SCSI connector• Any PCIe card with an external fiber cable connector	<p>Do one of the following:</p> <ul style="list-style-type: none">• Install the restricted cards in a slot other than PCIe Slot 7.• Do not install the cable management arm.

TABLE: Hardware and Mechanical Issues on the Sun SPARC Enterprise T5440 Server (*Continued*)

CR ID	Description	Workaround
6679425	PCIe Slots 4 and 7 have tight clearances with the chassis rear panel.	When installing a PCIe card in PCIe Slot 4 or 7, angle the card to clear the tab on the PCIe latch on the chassis rear panel, then insert the card vertically into the PCIe slot on the motherboard.
6726637	If three or four USB thumb drives are connected to the external USB ports, and the system is under heavy I/O load (including on the USB thumb drives), the system might panic after several hours (typically more than 10). The OK/Activity LEDs on SSDs behave differently than the OK/Activity LEDs on conventional (disk-based) hard drives. For example, during a hot-plug procedure, the SSD OK/Activity LED flashes, then remains off.	Under heavy I/O load, do not connect more than two USB thumb drives to the system. When performing a hot-plug procedure, use the Ready-to-Remove LED to determine if it is safe to remove a SSD.

Firmware and General Software Issues

This section describes firmware and other general software issues known to exist at this release of the Sun SPARC Enterprise T5440 server.

TABLE: Firmware and General Software Issues on the Sun SPARC Enterprise T5440 Server

CR ID	Description	Workaround															
6587380	<p>The Solaris <code>prtdiag -v</code> command displays some sensor indicators that are not voltage indicators under the Voltage Indicators heading. The sensor indicators involved include:</p> <table><tbody><tr><td>SYS/MB</td><td>I_USB0</td><td>ok</td></tr><tr><td>SYS/MB</td><td>I_USB1</td><td>ok</td></tr><tr><td>SYS/PSx</td><td>CUR_FAULT</td><td>ok</td></tr><tr><td>SYS/PSx</td><td>FAN_FAULT</td><td>ok</td></tr><tr><td>SYS/PSx</td><td>TEMP_FAULT</td><td>ok</td></tr></tbody></table> <p>However, the information reported under the Condition column is accurate and represents the current condition of the components.</p>	SYS/MB	I_USB0	ok	SYS/MB	I_USB1	ok	SYS/PSx	CUR_FAULT	ok	SYS/PSx	FAN_FAULT	ok	SYS/PSx	TEMP_FAULT	ok	Use the Condition column to assess FRU condition.
SYS/MB	I_USB0	ok															
SYS/MB	I_USB1	ok															
SYS/PSx	CUR_FAULT	ok															
SYS/PSx	FAN_FAULT	ok															
SYS/PSx	TEMP_FAULT	ok															
6660556	When BUI is used to enable/disable a component, the <code>/SYS</code> and <code>/SYS/MB</code> fault states appear to be one screen refresh behind the actual state.	Check for the availability of a patch for this defect.															
6683063	When there is an SC reset event, the EP domain software stops updating the <code>bbr</code> files (files under <code>/var/ep/bbr</code>) and the EP detectors do not get telemetry data.	<p>Restart the EP software on the Solaris domain. First disable EP. Type:</p> <pre># svcadm disable ep</pre> <p>Then, enable EP. Type:</p> <pre># svcadm enable ep</pre> <p>Verify that the most recent <code>bbr</code> file in the <code>/var/ep/bbr</code> directory is getting updated. If this workaround does not update the <code>bbr</code> file, a domain reboot can fix the problem.</p>															
6699494	Under rare conditions, the system might panic if repeated commands of creating and deleting aggregation links are put in a loop and are executed many times.	Avoid adding, deleting and repeating the link aggregation operations over and over again.															
6724125	<p>When CMP modules are removed but the corresponding memory modules are left in place, the service processor reports the following:</p> <pre>Fault Critical: /SYS/MB/... prom is unreadable or corrupted.</pre>	<p>Do not power on the system unless complete CMP/memory module pairs are installed. Check for the availability of a patch for this defect.</p> <p>If you are attempting to power on a system in a degraded state, see the <i>Sun SPARC Enterprise T5440 Server Service Manual</i>.</p>															

TABLE: Firmware and General Software Issues on the Sun SPARC Enterprise T5440 Server (*Continued*)

CR ID	Description	Workaround
6725254	<p>If a CMP module is disabled using one of the following commands (see below) and if this CMP module is physically removed from the system, on subsequent power-on the disabled CMP modules will appear in the OpenBoot list of disabled devices. This might prevent automatic boot to Solaris.</p> <pre>sc> disablecomponent asr-key -> set /SYS/component component_state=disabled</pre>	<p>This problem can be avoided by enabling all of the disabled CMP modules before physically removing them. The automatic boot problem can be worked around by setting the OpenBoot variable <code>auto-boot-on-error?</code> to <code>TRUE</code> at the OK prompt:</p> <pre>ok setenv auto-boot-on-error? TRUE</pre>
6743379	<p>In some cases, the system fails to recognize a newly installed XAUI card.</p> <p>After physically installing the XAUI card, verify that the MB/RISER0/XAUIx device is enabled:</p> <pre>-> show -d properties /SYS/MB/XAUI0 /SYS/MB/XAUI0 Properties: type = XAUI Board component_state = Enabled fru_name = XAUI_BOARD fru_description = ASY,XAUI,10G,OPTICAL,1U-2U fru_manufacturer = Flextronics Semiconductor fru_version = 04_50 fru_part_number = 5017489 fru_serial_number = A0077C fault_state = OK clear_fault_action = (none) -> start /SYS ERROR: The following devices are disabled: MB/XAUI0</pre>	<ol style="list-style-type: none">1. Power off the system.2. Unplug the power cords and remove the XAUI card.3. Plug in the power cords. Type:<pre>-> set /SYS/MB/XAUI0 component_state= enabled</pre>4. Unplug the power cords.5. Replace a XAUI card.6. Plug the power cords and power on the system.

TABLE: Firmware and General Software Issues on the Sun SPARC Enterprise T5440 Server (Continued)

CR ID	Description	Workaround
6772876	<p>In certain circumstances, if a disabled CMP module is replaced before the fault is cleared, the replaced CMP module might not be recognized by the system.</p> <p>For example, after replacing CMP1, the ALOM compatibility shell <code>showcomponent</code> command might not show the following devices:</p> <pre>/SYS/MB/CPU1/CMP1/P0 /SYS/MB/CPU1/CMP1/P1 /SYS/MB/CPU1/CMP1/P2 /SYS/MB/CPU1/CMP1/P3 /SYS/MB/CPU1/CMP1/P4 /SYS/MB/CPU1/CMP1/P5</pre>	<p>Reset the service processor after replacing a faulty CMP module. Type:</p> <pre>sc> resetsc</pre>
6950462	<p>The Emulex driver automatically performs a firmware upgrade of the Emulex HBA when the driver and HBA firmware levels do not match. This might occur when the Emulex HBA is assigned to a logical I/O domain using the direct I/O feature.</p> <p>Note - If the firmware upgrade of an Emulex HBA is interrupted, the card is permanently destroyed. Do not assign any Emulex HBA to a logical I/O domain with the direct I/O feature. This issue affects Option SG-XPCIE2FC-EM8-Z, part # 371-4306 8Gigabit/Sec PCI-E Dual FC Host Adapter (Emulex LPe12002-S x8 PCI Express)</p>	<p>Download and install the Emulex driver patch, Patch ID 145098-02.</p>
7068942, 7030371	<p>Systems configured with three CPU/memory modules may hang or will not boot with certain firmware releases installed (7.2.11, 7.3.0.c, 7.3.1.a, 7.4.0.b).</p> <p>In addition, if a system equipped with four CPU/memory modules has a CPU module failure, replace the faulty module before booting the system, or perform the workaround to permit the system to run in a 3-CPU/memory module configuration.</p>	<ul style="list-style-type: none">• Upgrade the system firmware to 7.3.2.a.• If you do not want to upgrade the system firmware, reconfigure the server to run on two processors. <p>For reconfiguration instructions, see the <i>Sun SPARC Enterprise T5440 Server Service Manual</i>.</p>

Documentation Additions and Errata

Some information in the documentation for the Sun SPARC Enterprise T5440 server is incomplete or incorrect. The following sections provide the corrections.

- [“Downloading Patches” on page 21](#)
- [“Installing the Solaris 10 8/07 OS and Required Patches” on page 22](#)
- [“Check and Update the SAS Controller Firmware” on page 24](#)
- [“Errors in the Sun SPARC Enterprise T5440 Server Getting Started Guide” on page 25](#)
- [“Errors and Omissions in the Oracle Integrated Lights Out Manager \(ILOM\) 3.0 Daily Management Concepts Guide” on page 26](#)

Downloading Patches

This section describes how to download patches required for your system. It contains the following task:

- [“Download Patches” on page 21](#)

Related Information

- [“Mandatory Patch Information for the Solaris 10 8/07 OS” on page 9](#)
- [“Mandatory Patch Information for the Solaris 10 5/08 OS” on page 10](#)
- [“Patches for Option Cards” on page 11](#)

▼ Download Patches

1. **Determine whether the patches you require have been installed on your system. For example, using the `showrev` command, type the following for each patch number:**

```
# showrev -p | grep "Patch: xxxxxx"
```

For example:

```
# showrev -p | grep "Patch: 137111"
```

- If you see patch information listed for the queried patch, and the dash extension (the last two digits) matches or exceeds the required version, your system has the proper patches already installed. No further action is required.
For example, if patch 123456-16 or later is installed, your system has the required version of this patch.
 - If you do not see patch information listed for the queried patch, or if the dash extension precedes the required version, go to [Step 2](#).
For example, if no version of the 123456 patch, or a version with an extension of -15 or earlier is installed, you must download and install the new patch.
2. Go to (<http://support.oracle.com>) to download the patches.
Using the SunSolve PatchFinder tool, specify the base Patch ID number (the first six digits) to access the current release of a patch.
 3. Follow the installation instructions provided in a specific patch's README file.

Installing the Solaris 10 8/07 OS and Required Patches

In order to install the Solaris 10 8/07 OS, you must build an install image with the correct patches applied. Use the following procedure to install the Solaris 10 8/07 OS onto your system.

- [“Install the Solaris 10 8/07 OS and Required Patches” on page 22](#)

▼ Install the Solaris 10 8/07 OS and Required Patches

You must download all the patches listed in [“Mandatory Patch Information for the Solaris 10 8/07 OS” on page 9](#) before performing this procedure.

1. Copy the following patches to a location accessible by the netinstall server:
 - 124235-02 or later
 - 125369-13
 - 125416-06
 - 125476-02
 - 126434-05
 - 127111-08 or later

2. Install the following patches to the `miniroot` directory of your netinstall server using the `patchadd` command:

- 125369-13
- 125476-02
- 127111-08 or later

Example:

```
# patchadd -C ./Solaris_10/Tools/Boot /net/downloads/T5440_patches/125369*
# patchadd -C ./Solaris_10/Tools/Boot /net/downloads/T5440_patches/125476*
# patchadd -C ./Solaris_10/Tools/Boot /net/downloads/T5440_patches/127111*
```

3. Copy the following patches into the netinstall server's `Solaris_10/Patches` directory:

- 124235-02 or later
- 125369-13
- 125416-06
- 125476-02
- 126434-05
- 127111-08 or later

Example:

```
# cp -R /net/downloads/T5440_patches/124235* ./Solaris_10/Patches
# cp -R /net/downloads/T5440_patches/125369* ./Solaris_10/Patches
...
```

4. Perform a netinstall using this patched version of the Oracle Solaris 10 8/07 OS.

5. On Oracle's Sun SPARC Enterprise T5440 server, use the `patchadd` command to install the remaining patches:

- 119254-51 or later
- 125891-01
- 127755-01
- 127127-11
- 137111-03 or later
- 137291-01 or later
- 138048-05 or later
- 138312-01

Check and Update the SAS Controller Firmware

This topic contains the following tasks:

- “Check the SAS Controller Firmware” on page 24
- “Update the SAS Controller Firmware” on page 24

▼ Check the SAS Controller Firmware

Use the `prtconf` command to determine which version of the SAS controller firmware is installed on your system.

- Type the following:

```
# prtconf -vp | egrep '(model|version)' | egrep -vi \  
'(obp|firmwareversi> on| mpt-version)' egrep -vi \  
'(obp|firmwareversi> on| mpt-version)'  
...  
model: 'SUNW,4.28.11'  
firmware-version: '1.23.04.00'  
model: 'LSI,1068E'  
version: '1.00.40'
```

In this example, the firmware version is 1.00.40.

▼ Update the SAS Controller Firmware

1. Download the latest version of the firmware image for the LSI 1068E SAS controller from the (<http://support.oracle.com>) site.
2. Log into the system as the root user.

3. Identify the controller.

```
# ls -al /dev/cfg
total 20
drwxr-xr-x  5 root    root        512 Apr 15  2008 .
rwxr-xr-x  18 root    sys         5120 Jan 22  15:33 ..
lrwxrwxrwx  1 root    root         45 Apr 15  2008 c0 ->
../../../../devices/pci@400/pci@0/pci@1/scsi@0:scsi
drwxr-xr-x  2 root    root        512 Apr 15  2008 usb0
drwxr-xr-x  2 root    root        512 Apr 15  2008 usb1
drwxr-xr-x  2 root    root        512 Apr 15  2008 usb2
```

In this example, the controller is located at c0.

4. Use the `raidctl` command to update the firmware image.

```
# raidctl -F firmware_image.fw 0
    Update flash image on controller 0 (yes/no)? y
    Start updating controller c0 firmware....
ROM image contains MPT firmware version 1.xx.xx           Update
controller c0 firmware successfully.
```

5. Shut down the system and perform a DC power cycle to load the new firmware.

Errors in the *Sun SPARC Enterprise T5440 Server Getting Started Guide*

Some information in the *Sun SPARC Enterprise T5440 Server Getting Started Guide* is incorrect. The following sections provide the corrections.

- [“Location of Rack Rail Installation Instructions” on page 25](#)

Location of Rack Rail Installation Instructions

CR ID 6747034

The sentence under Step 2, “Place the server in its intended location for verification,” is incorrect. The corrected sentence is as follows:

For rackmounting instructions, refer to the instructions included in one or more of the following locations:

- Rack installation kit

- *Sun SPARC Enterprise T5440 Server Installation and Setup Guide*

Errors and Omissions in the Oracle Integrated Lights Out Manager (ILOM) 3.0 Daily Management Concepts Guide

The *Oracle Integrated Lights Out Manager (ILOM) 3.0 Daily Management Concepts Guide* states that the server can accept up to 10 simultaneous ILOM sessions. However, the Sun SPARC Enterprise T5440 server has a limit of five simultaneous ILOM sessions.