SPARC T4-1 Server

Product Notes

Part No.: E22987-15
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Contents

Using This Documentation

This document contains late-breaking information and known issues for Oracle's SPARC T4-1 server.

Related Documentation

Documentation	Links
All Oracle products	http://docs.oracle.com
SPARC T4-1 server	http://www.oracle.com/goto/T4-1/docs
Oracle Integrated Lights Out Manager (ILOM)	http://www.oracle.com/goto/ILOM/docs
Oracle Solaris 11 OS	http://www.oracle.com/goto/Solaris11/docs
Oracle Solaris 10 OS	http://www.oracle.com/goto/Solaris10/docs
Oracle VM Server for SPARC	http://www.oracle.com/goto/VM-SPARC/docs
Oracle VTS	http://www.oracle.com/goto/VTS/docs
Oracle Dual Port QDR InfiniBand Adapter M3	http://www.oracle.com/goto/DUAL_PORT_QDR_INFINIBAND_M3/docs

Note – See http://docs.oracle.com for specific information about supported I/O cards and other peripherals.

Feedback

Provide feedback on this documentation at:

http://www.oracle.com/goto/docfeedback

Access to Oracle Support

Oracle customers have access to electronic support through My Oracle Support. For information visit http://www.oracle.com/pls/topic/lookup?ctx=acc&id=info, or visit http://www.oracle.com/pls/topic/lookup?ctx=acc&id=trs if you are hearing impaired.

CHAPTER 1

Late Breaking Information

These product notes contain important and late-breaking information about Oracle's SPARC T4-1 server.

Preinstalled Software

The preinstalled Oracle Solaris OS is installed on a ZFS file system, as described in TABLE 1-1.

TABLE 1-1 Preinstalled Software

Software	Location	Function
Oracle Solaris 11.1 OS with SRU 3.5.1 or later	Root disk Slice 0	Operating system
Oracle VM Server for SPARC 3.0.0.1	`/opt/SUNWldm`	Manages logical domains
System firmware no earlier than version 8.4.0	Service processor Host processor	Oracle ILOM operations All other firmware operations

Note – Refer to the Customer Information Sheet shipped with your server to identify which version of Oracle Solaris OS is preinstalled.

Note – In addition to reading the product notes for your server, always review the latest version of the Oracle Solaris OS release notes when installing or using the server. The release notes provide important installation, runtime, and update information that you should consider when installing or running the Oracle Solaris OS. The release notes also list the known OS problems and provide workarounds when available.

Find the release notes for your version of the OS on the following web site:
http://docs.oracle.com

Supported Versions of Oracle Solaris OS, Firmware, and Software

TABLE 1-2 Supported Versions of the Oracle Solaris OS and Firmware

Software	Supported Versions
Operating System	• Oracle Solaris 11.1 or later OS • Oracle Solaris 11 11/11 OS • Oracle Solaris 10 1/13 OS • Oracle Solaris 10 8/11 OS with required patchsets • Oracle Solaris 10 9/10 OS with the Solaris 10 8/11 SPARC Bundle and required patchsets • Oracle Solaris 10 10/09 OS with the Solaris 10 8/11 SPARC Bundle and required patchsets
Oracle VM Server for SPARC (LDoms)	• 2.2 or later with Solaris 11 • 2.1 or later with Solaris 10
Electronic Prognostics on the server host	1.1 with Oracle Solaris 10*
System firmware	• 8.1.1.c or later • 8.2.1.b or later with Sun Flash F40 card • No earlier than 8.4.0.b with Oracle Dual Port QDR InfiniBand Adapter M3

* Electronic Prognostics is integrated into all versions of Oracle Solaris 11.

OS Package and Patch Updates

Note – You should install the latest patches or package updates available for the version of the Oracle Solaris OS installed on your system.

Determining Oracle Solaris 11 OS Package Update Version

Updates to Oracle Solaris 11 are provisioned using package updates called Support Repository Updates (SRUs) instead of patches. SRUs are part of a new OS provisioning scheme called the Image Packaging System (IPS).

To determine the package version of the Oracle Solaris 11 OS installed on your system, run the `pkg info kernel` command and then interpret the FMRI value displayed in the output. This is an example:

```
# pkg info kernel
          Name: system/kernel
       Summary: Core Kernel
   Description: Core operating system kernel, device drivers and other modules.
      Category: System/Core
         State: Installed
     Publisher: solaris
       Version: 0.5.11
 Build Release: 5.11
        Branch: 0.175.0.2.0.2.1
Packaging Date: Wed Oct 19 07:57:11 2011
          Size: 17.99 MB
          FMRI: pkg://solaris/system/kernel@0.5.11,5.11-0.175.0.2.0.2.1:
                  20111128T20503
```

Then evaluate the following three fields in the FMRI value:

- 175—The value 175 indicates that the system has Oracle Solaris 11 OS installed. This value is a constant for Oracle Solaris 11.
- 0—The first field to the right of "175" indicates the update release. In this example, there have been no updates to the initial release.
- 2—The next field contains the SRU value. In this example, the second patch bundle (called SRU2) has been installed on Oracle Solaris 11, update 0.

You can ignore the other fields in the FMRI package description.

When you know which version of the OS is installed, you can access a list of all the packages contained in that release from the following web page:

http://pkg.oracle.com/solaris/release/en/index.shtml

To list the packages contained in a particular Oracle Solaris 11 release, select that release in the Release and Branch pull-down menu and press the Browse button. Or you can search for individual packages in the Search for: window.

Determining Oracle Solaris 10 Patch Revision

If your system is currently running Oracle Solaris 10, you can find its patch level with the commands `showrev`(1M) and `uname(1)`. This is shown in the following example:

```
# showrev
Hostname: *********
Host id: *********
Release: 5.10
Kernel architecture: sun4v
Application architecture: sparc
Hardware provider: Sun_Microsystems
Domain: Ecd.East.Sun.COM
Kernel version SunOS 5.10 Generic_142909-17
# uname -a
SunOS ********* Generic_142909-17 sun4v sparc sun4v
# showrev -p | tail -3
Patch: 143525-01 Obsoletes: Requires: 118833-36, 127127-11 Incompatibles:
    Packages:SUNWcsu
Patch: 143125-01 Obsoletes: 138079-01 138089-01 Requires: 120011-14
    Incompatibles: Packages: SUNWcsu
Patch: 121557-01 Obsoletes: Requires: Incompatibles: Packages: SUNWpiclu
#
```

Minimum Required Patchset for Oracle Solaris 10 8/11 OS

Install the patches listed in TABLE 1-3 before using the server with the Oracle Solaris 10 8/11 OS.

TABLE 1-3 Minimum Required Patchset for Oracle Solaris 10 8/11

147440-03
147149-01
147153-01
147707-01
147159-03

In addition, you should download and install "Recommended OS Patchset Solaris 10 SPARC". This patchset contains Oracle Solaris 10 OS patches that address current Sun Alerts.

Note – The download of the Solaris 10 8/11 SPARC Bundle is identified by the number 14158708 at `http://support.oracle.com`.

Minimum Required Patchsets and SPARC Bundle for Oracle Solaris 10 9/10 OS

To use the server with the Oracle Solaris 10 9/10 OS, install the patches listed in TABLE 1-3, as well as the Oracle Solaris 10 8/11 SPARC Bundle. In addition, you should download and install "Recommended OS Patchset Solaris 10 SPARC". This patchset contains Oracle Solaris 10 OS patches that address current Sun Alerts.

Note – The download of the Solaris 10 9/10 SPARC Bundle is identified by the number 13153809 at `http://support.oracle.com`.

Minimum Required Patchsets and SPARC Bundle for Oracle Solaris 10 10/09 OS

To use the server with the Oracle Solaris 10 10/09 OS, install the patches listed in TABLE 1-3, as well as the Oracle Solaris 10 8/11 SPARC Bundle. In addition, you should download and install "Recommended OS Patchset Solaris 10 SPARC". This patchset contains Oracle Solaris 10 OS patches that address current Sun Alerts.

Note – The download of the Solaris 10 9/10 SPARC Bundle is available at http://support.oracle.com.

Installing and Booting Oracle Solaris 11 From Devices Connected to a USB Port

To install Oracle Solaris 11 without using an IPS AutoInstall server on the network, you can use Oracle Solaris media in a DVD drive, either built into the server or attached to a USB port. You also can boot from an ISO image copied to a DVD disk, hard disk, or SSD.

Starting with Oracle Solaris 11.2 and System Firmware 8.5.1.x, you can install the OS on this server from an image copied to a USB flash drive. That USB image is available for download at the same location as the ISO images:

http://www.oracle.com/technetwork/serverstorage/solaris11/downloads/index.html

You also can create a persistent device alias for a device connected to a USB port.

For more information see "Installing Oracle Solaris 11.2 Systems" at:

http://docs.oracle.com/cd/E36784_01

You can boot Oracle Solaris 11 from drives installed in the server (hard disk, SDD, or DVD) or from devices connected to a USB port.

For the path to identify a USB port in a boot command, refer to this table:

USB Port	Path
USB 0 (Back panel top)	/pci@400/pci@2/pci@0/pci@f/pci@0/usb@0,2/hub@2/storage@1
USB 1 (Back panel bottom)	/pci@400/pci@2/pci@0/pci@f/pci@0/usb@0,2/hub@2/storage@2
USB 2 (Front panel top)	/pci@400/pci@2/pci@0/pci@f/pci@0/usb@0,2/hub@4/storage@1
USB 3 (Front panel bottom)	/pci@400/pci@2/pci@0/pci@f/pci@0/usb@0,2/hub@4/storage@2

Support for new 16 Gbyte and 32 Gbyte DIMMs

The server supports the following new DIMM architectures:

- 4Rx4 32-Gbyte DDR3 DIMMs
- 2Rx4 16-Gbyte DDR3 DIMMs

Note – These new DIMM options require system firmware no earlier than 8.2.1.b.

For specific DIMM installation instructions, see the *SPARC T4-1 Server Service Manual*.

Rules for I/O Slot Use by Certain Cards

Some optional I/O cards are restricted to specific I/O slots to meet system cooling requirements. Other I/O cards provide better performance when installed in particular slots. TABLE 1-4 lists these slot requirements and recommendations.

Note – This table lists only I/O cards that have specific slot or quantity restrictions or other requirements. It does not list I/O cards that are supported by the SPARC T4-1 server but are not subject to slot or quantity restrictions.

TABLE 1-4 PCIe Slot Usage Rules for Certain I/O Cards

Description	X-option	ATO	Max	Restrictions
Network Interface Card				
10 GbE XFP XAUI adapter card	SE3X7XA1Z	SE3Y7XA1Z	2	Slots 0 and 3 only
10 GbE short reach XFP transceiver	SE3X7XT1Z	SE3Y7XT1Z	2	
10 GbE long reach XFP transceiver	SE3X7XT2Z	SE3Y7XT2Z	2	
SAS Host Bus Adapter				
Sun Storage 6 Gb SAS PCIe RAID HBA, Internal: 8 port and 512 MB memory*	SGX-SAS6-R-INT-Z	SG-SAS6-R-INT-Z	1	Slot 3

TABLE 1-4 PCIe Slot Usage Rules for Certain I/O Cards *(Continued)*

Description	X-option	ATO	Max	Restrictions
SAS cable kit for installation of internal RAID card	SE3X4A11Z	SE3Y4A11Z	1	
Sun Storage 6 Gb SAS PCIe HBA: 8 port, External	SGX-SAS6-EXT-Z	SG-SAS6-EXT-Z	4	Slots 0, 3, 4, and 5
InfiniBand				
Sun InfiniBand QDR Host Channel Adapter PCIe	X4242A	4242A	4	
Oracle Dual Port QDR InfiniBand Adapter M3†	7104074	7104073	2	
Miscellaneous				
Sun Crypto Accelerator 6000 PCIe Card	X6000A-N	6000A-N	2	Preferred slots 0, 2, 3 or 5
Sun Flash F40 Card‡	7104482	7104480	2	Slots 3 and 5
Flash Accelerator F80 Card**	7107092	7107091	2	Slots 3 and 5

* Requires SE3Y4A11Z cable kit.

† Requires system firmware no earlier than 8.4.0.b.

‡ Requires system firmware no earlier than 8.2.1.b.

** Preferred installation order: slot 5, slot 3.

CHAPTER 2

Known Product Issues

This section describes issues that are known to affect Oracle's SPARC T4-1 servers at the time of this release. The issue descriptions are organized as follows.

Hardware Issues

This section describes issues related to SPARC T4-1 server components.

Maximizing Memory Bandwidth

To maximize memory bandwidth, Oracle recommends that only fully-populated memory configurations—as opposed to 1/4- or 1/2-populated configurations—be considered for performance-critical applications.

For specific memory installation and upgrade instructions, see the *SPARC T4-1 Server Service Manual*.

Direct I/O Support

Only certain PCIe cards can be used as direct I/O endpoint devices on an I/O domain. You can still use other cards in your Oracle VM Server for SPARC environment, but they cannot be used with the Direct I/O feature. Instead, they can be used for service domains and for I/O domains that have entire root complexes assigned to them.

For the most up-to-date list of supported PCIe cards, refer to:

https://support.oracle.com/CSP/main/article?cmd=show&type=NOT&doctype=REFERENCE&id=1325454.1

Use Links Labeled SPARC T3 to Download `sas2ircu` Firmware and Documentation for SPARC T4 Servers

To download `sas2ircu` firmware and documentation for SPARC T4-1 and T4-2 servers from the current LSI web site, you must use links labeled SPARC T3-1 and T3-2. The software and documentation is the same for both sets of servers.

This is the web site for downloading `sas2ircu` firmware from LSI:

http://www.lsi.com/sep/Pages/oracle/index.aspx

This is the web site for downloading `sas2ircu` documentation from LSI:

http://www.lsi.com/sep/Pages/oracle/sparc_t3_series.aspx

Sun Type 6 Keyboards Are Not Supported By SPARC T4 Series Servers

Sun Type 6 keyboards cannot be used with SPARC T4 series servers.

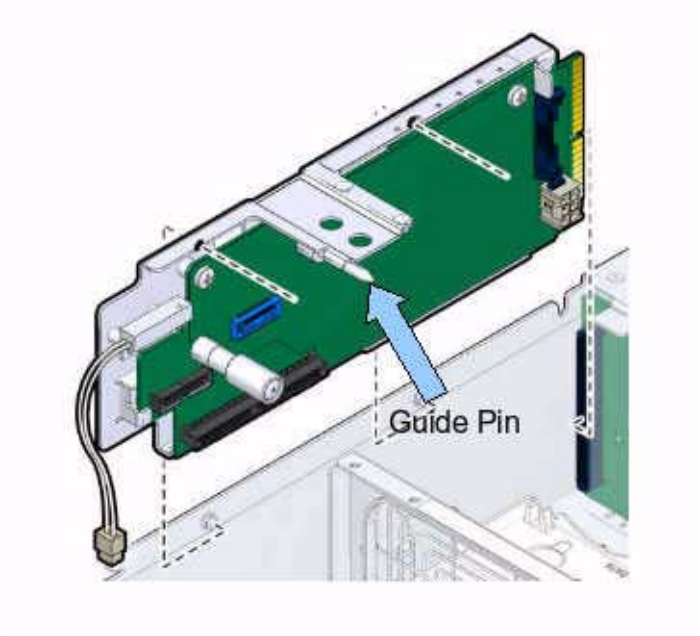
Caution Needed When Removing a SATA Data Cable From a Backplane Connector

When disconnecting the SATA data cable from the disk backplane, pull the cable straight back, in a perpendicular direction away from the backplane.

Caution – Do not rock or twist the cable in any other direction. Doing so could damage the integrity of the data cable connection.

Caution Needed When Handling the Connector Board

Use caution when handling the connector board to avoid pressing your hand against the pointed end of the guide pin that's located below the mounting bracket. The guide pin is indicated by an arrow in the following figure.



Server Panics When Booting From a USB Thumbdrive Attached to the Front USB Ports (Bug ID 15667682)

Note – This issue was originally listed as CR 6983185.

When attempting to boot a USB thumbdrive inserted in either front USB port (USB2 or USB3), the server might panic.

Workaround: Use the server's rear USB ports (USB0 or USB1) whenever booting from an external USB device.

PSH Might Not Clear a Retired Cache Line on a Replaced Motherboard (Bug ID 15705327, Bug ID 15713018)

Note – This issue was originally listed as CR 7031216.

Note – This issue was fixed in Oracle Solaris 11.1.

When a motherboard is replaced to repair a faulty CPU, PSH might not clear retired cache lines on the replacement FRU. In such cases, the cache line remains disabled.

Workaround: Manually clear the disabled cache line by running the following command:

```
# fmadm repaired /SYS/MB/CMP0
```

PCIe Correctable Errors Might Be Reported (Bug ID 15720000, Bug ID 15722832)

Note – This issue was originally listed as CR 7051331.

Note – This issue was fixed in Oracle Solaris 11.

In rare cases, PCIe devices might generate I/O errors that are identified and reported by PSH. For example:

```
--------------- ------------------------------------  -------------- ---------
TIME            EVENT-ID                              MSG-ID         SEVERITY
--------------- ------------------------------------  -------------- ---------
Aug 10 13:03:23 a7d43aeb-61ca-626a-f47b-c05635f2cf5a  PCIEX-8000-KP  Major
```

```
Host        : dt214-154
Platform    : ORCL,SPARC-T3-1B  Chassis_id  :
Product_sn  :

Fault class : fault.io.pciex.device-interr-corr 67%
              fault.io.pciex.bus-linkerr-corr 33%
Affects     : dev:////pci@400/pci@1/pci@0/pci@c
              dev:////pci@400/pci@1/pci@0/pci@c/pci@0
                  faulted but still in service
FRU         : "/SYS/MB" (hc://:product-id=ORCL,SPARC-T3-1B:product-sn=
1052NND107:server-id=dt214-154:chassis-id=0000000-0000000000:serial=1005LCB-
1052D9008K:part=541-424304:revision=50/chassis=0/motherboard=0) 67%
              "FEM0" (hc://:product-id=ORCL,SPARC-T3-1B:product-sn=
1052NND107:server-id=dt214-154:chassis-id=0000000-0000000000/chassis=
0/motherboard=0/hostbridge=0/pciexrc=0/pciexbus=1/pciexdev=0/pciexfn=
0/pciexbus=2/pciexdev=12/pciexfn=0/pciexbus=62/pciexdev=0) 33%
                  faulty

Description : Too many recovered bus errors have been detected, which indicates
              a problem with the specified bus or with the specified
              transmitting device. This may degrade into an unrecoverable
              fault.
              Refer to http://sun.com/msg/PCIEX-8000-KP for more information.

Response    : One or more device instances may be disabled

Impact      : Loss of services provided by the device instances associated with
              this fault

Action      : If a plug-in card is involved check for badly-seated cards or
              bent pins. Otherwise schedule a repair procedure to replace the
              affected device.  Use fmadm faulty to identify the device or
              contact Sun for support.
```

These errors might be an indication of a faulty or incorrectly seated device. Or these errors might be invalid.

Workaround: Ensure that the device is properly seated. If the errors continue, apply patch 147705-01 or higher.

SPARC T3 and T4 Platforms Might See Dropped or Doubled Character Input From USB Keyboards (Bug ID 15700526, Bug ID 15728507)

Note – This issue was originally listed as CR 7067025.

On Oracle's SPARC T3 and T4 servers, all USB ports/connectors available to users are connected to an internal USB 2.0 (ehci) controller through an onboard USB 2.0 hub.

When a full/low speed USB 1.0/1.1 keyboard and mouse are connected to a USB port through this USB 2.0 hub, keyboard input might drop characters or might display double characters.

Note – These errors occur when the ehci (USB 2.0) driver fails to detect keystrokes and mouse control input due to USB "Missed Micro-Frame" errors.

Workaround: Currently, a workaround has been implemented for this issue where an internal USB hub is manually bound to the ohci (USB 1.0/1.1) driver. This binding causes a variable named ehci_forced_port_to_companion to instruct the ehci (USB 2.0) driver to transfer ownership of a specific port on the USB controller to the ohci (1.0/1.1) driver. Once the ohci driver is bound to a particular port on the USB controller, the ohci driver will also be used by the internal USB hub connected to that port and all USB connectors on that hub.

This workaround is available in the following forms:

- Oracle Solaris 11 OS – Oracle Solaris 11 Support Repository Update 3 (SRU3)
- Oracle Solaris 10 8/11 – Patch 147004-03

For earlier supported versions of Oracle Solaris 10, apply the Solaris 10 8/11 SPARC Bundle, followed by patch 147004-03.

Note – As a general practice, you should download and install all the latest available patches (for Oracle Solaris 10 OS) or latest SRU package (for Oracle Solaris 11 OS). To download Oracle Solaris patches and/or SRU packages, go to `http://support.oracle.com`

Supplementary Notes

On T3-1, T4-1, T3-2, and T4-2, the rear USB connectors as well as the virtual keyboard, virtual mouse, virtual CD-ROM, and virtual USB ethernet connection to the service processor (a.k.a RKVMS) are all beneath a hub connected to port 2 on the USB controller.

The front USB connectors are connected through a hub to port 4 of the USB controller.

Likewise, on the T3-4 and T4-4 platforms, the rear USB connector is beneath a hub that is connected to port 3 of the USB controller and the front USB connector and the virtual mouse, keyboard, CD-ROM and virtual USB ethernet connection to the service processor are beneath a hub that is connected to port 2 of the USB controller.

To use a physical keyboard and mouse with this workaround, apply the fix (either patch 147004-03 or SRU3) and then perform the following recommended steps:

- On SPARC T3-1, T4-1, T3-2, and T4-2 systems:
  1. Connect the input devices to a *front* USB connector.
  2. Add the following line to `/kernel/drv/ehci.conf`:

     ```
     ehci-port-forced-to-companion = 4
     ```

  3. Reboot.
- On SPARC T3-4 and T4-4 systems:
  1. Connect the input devices to a *rear* USB connector.
  2. Add the following line to `/kernel/drv/ehci.conf`:

     ```
     ehci-port-forced-to-companion = 3
     ```

  3. Reboot.

To use a physical keyboard and mouse with this workaround, first apply the fix (either patch 147004-03 for Oracle Solaris 10 or SRU3 for Oracle Solaris 11) and then add the following line to `/kernel/drv/ehci.conf` and reboot:

```
ehci-port-forced-to-companion = 2
```

All other devices connected to the hub that services the virtual keyboard and mouse will be forced to operate at the lower USB 1.0/1.1 speed. These include:

- The virtual USB ethernet connection to the service processor.
- The physical USB connectors:
  - Rear conectors on the T3-1, T4-1, T3-2, and T4-2 servers.
  - Front connectors on the T3-4 and T4-4 servers.

Note – If you use the virtual keyboard and mouse with this workaround, some devices connected to the hub, such as a Virtual CD-ROM and Ethernet over a USB connection to the service processor, may not come up properly following a reboot.

When these devices do not come up, messages similar to the following will be displayed on the console and written to system logs:

```
WARNING: /pci@400/pci@2/pci@0/pci@f/pci@0/usb@0,1/hub@1/hub@3 (hubd4):
Connecting device on port 2 failed
```

```
WARNING: /pci@400/pci@2/pci@0/pci@f/pci@0/usb@0,1/hub@1/hub@3 (hubd4):
Connecting device on port 3 failed
```

Caution – At this time, there is no fix or workaround for the failure of these devices to come up when the missing micro-frame workaround is configured to support a virtual keyboard and mouse.

For this reason, you should limit use of following USB ports when using virtual keyboard and mouse functionality:

- Rear USB connectors on the T3-1, T4-1, T3-2, and T4-2
- Front USB connectors on the T3-4 and T4-4

All other virtual devices (such as virtual keyboard and virtual mouse) will continue to function, but will be limited to operating at the lower speed.

L2 Cache UEs Are Sometimes Reported as Core Faults Without Any Cache Line Retirements (Bug ID 15731176)

Note – This issue was originally listed as CR 7071237.

When a processor cache line encounters an uncorrectable error (UE) the fault manager is supposed to attempt to retire the cache line involved in the error. Because of this defect, the fault manager might not retire the faulty cache line and instead report the entire chip as faulted.

Workaround: Schedule a replacement of the FRU containing the faulty component. For additional information about UEs in processor cache lines, search for message ID SUN4V-8002-WY on the Oracle support site, http://support.oracle.com.

Upon a Reboot After an Unrecoverable Hardware Error, CPUs Might Not Start (Bug ID 15733431)

Note – This issue was originally listed as CR 7075336.

In rare cases, if the server or sever module experiences a serious problem that results in a panic, when the server is rebooted, a number of CPUs might not start even though the CPUs are not faulty.

Example of the type of error displayed:

```
rebooting...
Resetting...

ERROR: 63 CPUs in MD did not start
```

Workaround: Log in to Oracle ILOM on the SP and then power cycle by typing:

```
-> stop /SYS
Are you sure you want to stop /SYS (y/n)? y
Stopping /SYS
-> start /SYS
Are you sure you want to start /SYS (y/n) ? y
Starting /SYS
```

`reset /SYS` Operations Can Cause the SAS Controller to Disappear (Bug ID 15737475)

Note – This issue was originally listed as CR 7082665.

During an Oracle ILOM `reset /SYS` command, a SAS controller might not initialize correctly. In such cases it might lose contact with the target disk devices. The error message might appear as follows:

```
{0} ok boot disk
Boot device: /pci@400/pci@1/pci@0/pci@4/scsi@0/disk@p0  File and args: ERROR:
boot-read fail

Can't locate boot device
{0} ok
```

If a data disk is not available after performing a `reset /SYS`, you can use the OBP command `probe-scsi-all` to verify if your SAS controllers are present. The following example shows the output that you should see with `probe-scsi-all`:

```
{0} ok probe-scsi-all
/pci@400/pci@2/pci@0/pci@f/pci@0/usb@0,2/hub@2/hub@3/storage@2
  Unit 0   Removable Read Only device    AMI     Virtual CDROM   1.00

/pci@400/pci@2/pci@0/pci@4/scsi@0

FCode Version 1.00.56, MPT Version 2.00, Firmware Version 9.00.00.00

Target 9
  Unit 0   Disk   SEAGATE  ST914603SSUN146G 0B70    286739329 Blocks, 146 GB
  SASDeviceName 5000c50005ba000f  SASAddress 5000c50005ba000d  PhyNum 0
Target a
  Unit 0   Removable Read Only device   TSSTcorp CDDVDW TS-T633A  SR00
  SATA device  PhyNum 6
Target b
  Unit 0   Disk   SEAGATE  ST914603SSUN146G 0B70    286739329 Blocks, 146 GB
  SASDeviceName 5000c50016f76db7  SASAddress 5000c50016f76db5  PhyNum 1
Target c
  Unit 0   Disk   SEAGATE  ST914603SSUN146G 0B70    286739329 Blocks, 146 GB
  SASDeviceName 5000c50016f765ef  SASAddress 5000c50016f765ed  PhyNum 2
Target d
  Unit 0   Disk   SEAGATE  ST914603SSUN146G 0B70    286739329 Blocks, 146 GB
  SASDeviceName 5000c50016f7833b  SASAddress 5000c50016f78339  PhyNum 3

/pci@400/pci@1/pci@0/pci@4/scsi@0

FCode Version 1.00.56, MPT Version 2.00, Firmware Version 9.00.00.00

Target 9
  Unit 0   Disk   SEAGATE  ST914603SSUN146G 0868    286739329 Blocks, 146 GB
  SASDeviceName 5000c50016f777df  SASAddress 5000c50016f777dd  PhyNum 0
Target a
  Unit 0   Disk   SEAGATE  ST914603SSUN146G 0B70    286739329 Blocks, 146 GB
  SASDeviceName 5000c50016f7818b  SASAddress 5000c50016f78189  PhyNum 2
Target b
  Unit 0   Disk   SEAGATE  ST914603SSUN146G 0B70    286739329 Blocks, 146 GB
  SASDeviceName 5000c50016f758ff  SASAddress 5000c50016f758fd  PhyNum 3
Target c
  Unit 0   Disk   SEAGATE  ST914603SSUN146G 0B70    286739329 Blocks, 146 GB
  SASDeviceName 5000c50016f7703f  SASAddress 5000c50016f7703d  PhyNum 1

{0} ok
```

If you are missing either of the following lines, you might be experiencing this error (CR 7082665):

- /pci@400/pci@2/pci@0/pci@4/scsi@0
- /pci@400/pci@1/pci@0/pci@4/scsi@0

As an alternative test of this error condition, you can use the `format`(1) command in Oracle Solaris to list all disks available to the operating system. If one of your data disks is not present after performing a `reset /SYS` and booting the operating system, you may be experiencing this error (CR 7082665).

Workaround: At the Oracle ILOM prompt first type the `stop /SYS` command and then the `start /SYS` command. If the issue persists beyond several power cycles, contact your authorized Oracle Service Provider.

SAS Command Might Fail to Complete When Certain SAS Devices Are Put Under Heavy Load (Bug ID 15802084)

Note – This issue was originally listed as CR 7088469.

When certain SAS devices are placed under heavy load, a SCSI Bus Reset might occur. The SCSI bus reset will result in one or more WARNING messages being written to the system log file, `/var/adm/messages`. The following is an example of the WARNING message you might see:

```
scsi: [ID 243001 kern.info] /pci@400/pci@2/pci@0/pci@4/scsi@0 (mpt_sas1):
mptsas_handle_event_sync: IOCLogInfo=0x31120303
scsi: [ID 243001 kern.info] /pci@400/pci@2/pci@0/pci@4/scsi@0 (mpt_sas1):
mptsas_handle_event: IOCLogInfo=0x31120303
scsi: [ID 243001 kern.info] /pci@400/pci@2/pci@0/pci@4/scsi@0 (mpt_sas1):
mptsas_check_scsi_io: IOCStatus=0x4b IOCLogInfo=0x31120303
scsi: [ID 243001 kern.info] /scsi_vhci (scsi_vhci0):
/scsi_vhci/disk@g5000c5003bee5ae3 (sd6):
Command failed to complete (4) on path mpt_sas3/disk@w5000c5003bee5ae1,0
scsi: [ID 107833 kern.warning] WARNING: /scsi_vhci/disk@g5000c5003bee5ae3 (sd6):
SCSI transport failed: reason 'reset': retrying command
```

Workaround: No work around needed. The system will retry the failed command automatically.

Contact your authorized Oracle service provider if the following message is seen:

```
SCSI transport failed: reason 'reset': giving up
```

Rebooting an SDIO-SAS HBA Guest Domain Might Generate `ereport.io.pciex.pl.re` (Bug ID 15718101)

Note – This issue was originally listed as CR 7048307.

When a guest domain is configured using SDIO (Static Direct I/O) and an onboard SAS2 controller (`/SYS/MB/SASHBA0` or `/SYS/MB/SASHBA1`) eReports of type `ereport.io.pciex.pl.re` will be generated at the time the guest is bound and started. Similar eReports might occur intermittently when the guest domain reboots.

Workaround: If the problem persists or occurs outside of rebooting an SDIO-SAS HBA guest domain, contact your authorized Oracle Service Provider for additional assistance.

Otherwise, you can safely ignore this message.

Characters Are Occasionally Dropped at the Oracle OpenBoot Prompt (Bug ID15813690)

In some cases, input characters are dropped or doubled at the Oracle OpenBoot (`ok`) prompt.

Workaround: Retype the command.

Oracle Solaris OS Issues

This section describes issues related to the Oracle Solaris OS in this release.

When a Start Address Is Not Aligned With the Largest Page Size, the OS Should Use the Next Available Page Size (Bug ID 15718159)

Note – This issue was originally listed as CR 7048380.

Ideally, memory access start addresses should be aligned with the largest page size supported by the OS. For example, when the largest supported page size is 2 GB, memory accesses should start on 2-GB page boundaries.

When a start address aligns with a smaller page size, the OS should allocate pages based on the next available page size. For example, if an application specifies a start address on a 256 MB boundary, the OS should begin allocating 256 MB pages. Later, when the page allocations align with a 2 GB address, the OS should start allocating 2-GB pages.

Note – This issue was fixed in Oracle Database 11g Release 2, version 11.2.0.3.

Workaround: Update the package Oracle Database 11g Release 2 to patch set 11.2.0.3 or later.

Cannot Boot Oracle Solaris 10 10/09 OS (U8) From the Internal DVD

The internal DVD cannot be used to boot the Oracle Solaris U8 release.

Note – Later updates of Oracle Solaris 10 do not have this limitation.

Workaround: Remote cdrom/DVD (Storage part of rKVMS) can be used to boot the DVD media itself or the iso image. An external USB DVD drive can also be used to boot the media.

Spurious Interrupt Message in System Console (Bug ID 15651697, Bug ID 15771956, Bug ID 15771958)

Note – This issue was originally listed as CR 6963563.

Note – This issue was fixed in System Firmware 8.2.0.a.

During the normal operation of the server, and when running the Oracle VTS system exerciser, you might see the following message in the system console:

```
date time hostname px: [ID 781074 kern.warning] WARNING: px0: spurious
interrupt from ino 0x4
date time hostname px: [ID 548919 kern.info] ehci-0#0
date time hostname px: [ID 100033 kern.info]
```

Workaround: You can safely ignore this message.

Spurious Error Message During Initial Oracle Solaris 10 OS Installation (Bug ID 15658412)

Note – This issue was originally listed as CR 6971896.

The miniroot is a bootable root file system that includes the minimum Oracle Solaris OS software required to boot the server and configure the OS. The miniroot runs only during the installation process.

When the server boots the miniroot for the initial configuration, you might see the following messages in the system console:

```
Fatal server error:
InitOutput: Error loading module for /dev/fb

giving up.
/usr/openwin/bin/xinit: Network is unreachable (errno 128):
unable to connect to X server
/usr/openwin/bin/xinit: No such process (errno 3): Server error.
```

The messages indicate the Xsun server in the Oracle Solaris 10 OS miniroot cannot find a supported driver for the AST graphics device in the service processor. These messages are legitimate, as the miniroot contains only the Xsun environment, and the AST framebuffer (`astfb`) is supported only in the Xorg environment. The Xorg environment is included in the installed system, so the graphics device might be used when running the installed Oracle Solaris OS.

Workaround: You can safely ignore this message.

When `diag-switch?` is Set to `true`, Oracle Solaris OS Fails to Update EEPROM for Automatic Rebooting (Bug ID 15666767)

Note – This issue was originally listed as CR 6982060.

When installing the Oracle Solaris OS to a device when the OBP `diag-switch?` parameter is set to `true`, the Oracle Solaris OS installer fails to update the `bootdevice` parameter with the new device path where the OS was installed. Therefore, this new device path will not be used during the subsequent automatic system reboots.

Under these conditions, the server will display the following error message and you will not be able to reboot from the device:

```
Installing boot information
       - Installing boot blocks (cxtxdxsx)
       - Installing boot blocks (/dev/rdsk/cxtxdxsx)
       - Updating system firmware for automatic rebooting
WARNING: Could not update system for automatic rebooting
```

On previous systems, the OBP `diag-device` parameter used to set the new device path to the boot device when the `diag-switch?` parameter was set to `true`. On SPARC T4 systems, the `diag-device` parameter is no longer supported and the Oracle Solaris OS installer warns that setting the OBP `boot-device` parameter is not possible.

Workaround: From the Oracle ILOM prompt, set the OBP `diag-switch?` parameter to `false`:

```
-> set /HOST/bootmode script="setenv diag-switch? false"
```

Note – The change to the `/HOST/bootmode` script will take effect with the next system poweron.

Alternatively, you can set this parameter at the OBP `ok` prompt:

```
ok setenv diag-switch? false
```

Memory Allocation Issues With Emulex 8Gb HBAs In a Magma IO Expansion Box (Bug ID 15666779)

Note – This issue was originally listed as CR 6982072.

Memory allocation errors might occur when four or more 8Gb FC PCI-Express HBA, Emulex cards are used in a Magma IO expansion box connected to an Oracle SPARC T4 series server. The following is an example of the types of messages that might be logged in `/var/adm/messages` with this configuration:

```
date time hostname emlxs: [ID 349649 kern.info] [ 8.019A]emlxs22:  ERROR: 301: Memory
alloc failed. (BPL Pool buffer[1760]. size=1024)
date time hostname emlxs: [ID 349649 kern.info] [ 8.019A]emlxs20:  ERROR: 301: Memory
alloc failed. (BPL Pool buffer[2765]. size=1024)
date time hostname emlxs: [ID 349649 kern.info] [ 8.019A]emlxs24:  ERROR: 301: Memory
alloc failed. (BPL Pool buffer[3437]. size=1024)
date time hostname emlxs: [ID 349649 kern.info] [13.0363]emlxs22:  ERROR: 201:
Adapter initialization failed. (Unable to allocate memory buffers.)
date time hostname emlxs: [ID 349649 kern.info] [ 5.064D]emlxs22:  ERROR: 201:
Adapter initialization failed. (status=c)
date time hostname emlxs: [ID 349649 kern.info] [ B.1949]emlxs22:  ERROR: 101: Driver
attach failed. (Unable to initialize adapter.)
date time hostname emlxs: [ID 349649 kern.info] [13.0363]emlxs20:  ERROR: 201:
Adapter initialization failed. (Unable to allocate memory buffers.)
date time hostname emlxs: [ID 349649 kern.info] [ 5.064D]emlxs20:  ERROR: 201:
Adapter initialization failed. (status=c)
date time hostname emlxs: [ID 349649 kern.info] [ B.1949]emlxs24:  ERROR: 101: Driver
attach failed. (Unable to initialize adapter.)
date time hostname emlxs: [ID 349649 kern.info] [13.0363]emlxs24:  ERROR: 201:
Adapter initialization failed. (Unable to allocate memory buffers.)
date time hostname emlxs: [ID 349649 kern.info] [ 5.064D]emlxs24:  ERROR: 201:
Adapter initialization failed. (status=c)
date time hostname emlxs: [ID 349649 kern.info] [ B.1949]emlxs24:  ERROR: 101: Driver
attach failed. (Unable to initialize adapter.)
```

Workaround: Add the following line in the `/kernel/drv/emlxs.conf` file:

```
num-iotags=1024;
```

Reboot the server for the changes to take effect.

Fault Management Sometimes Sends Resolved Cases to the SP (Bug ID 15667874, Bug ID 15741999)

Note – This issue was originally listed as CR 6983432.

Note – This issue is fixed in Patch 147790-01: SunOS 5.10: fmd patch, and in Oracle Solaris 11.

This defect will result in previously diagnosed and repaired PSH faults from the host to reappear in Oracle ILOM when the host reboots. It manifests itself as an incorrect report of a PSH diagnosed fault represented through the Oracle ILOM CLI, BUI, and fault LED.

Tip – You can identify this defect by checking to see if the same PSH fault was reported from the host as well. If it was reported *only* by Oracle ILOM and not from the host, it is probably an example of this defect.

Recovery Action: Use the Oracle ILOM diagnostic and repair tools to identify the error condition and correct it. The following example illustrates how to diagnose and repair a PSH fault diagnosed by the host. This example is based on the Oracle ILOM fault management shell.You could instead use the Oracle ILOM CLI or BUI to accomplish the same results.

1. Display the fault information

```
faultmgmtsp> fmadm faulty
------------------- ------------------------------------ -------------- -------
Time                UUID                                 msgid          Severity
------------------- ------------------------------------ -------------- -------
2011-09-16/15:38:19 af875d87-433e-6bf7-cb53-c3d665e8cd09 SUN4V-8002-6E  Major

Fault class : fault.cpu.generic-sparc.strand
```

```
FRU         : /SYS/MB
              (Part Number: 7015272)
              (Serial Number: 465769T+1130Y6004M)

Description : A fault has been diagnosed by the Host Operating System.

Response    : The service required LED on the chassis and on the affected
              FRU may be illuminated.

Impact      : No SP impact.  Check the Host OS for more information.

Action      : The administrator should review the fault on the Host OS.
              Please refer to the Details section of the Knowledge Article
              for additional information.
```

2. Check for faults on the host.

```
# fmadm faulty
#                        <-- Host displays no faults
```

3. Verify that the fault shown by Oracle ILOM was repaired on the host.

```
# fmdump
TIME                 UUID                                 SUNW-MSG-ID
Sep 16 08:38:19.5582 af875d87-433e-6bf7-cb53-c3d665e8cd09 SUN4V-8002-6E
Sep 16 08:40:47.8191 af875d87-433e-6bf7-cb53-c3d665e8cd09 FMD-8000-4M Repaired
Sep 16 08:40:47.8446 af875d87-433e-6bf7-cb53-c3d665e8cd09 FMD-8000-6U Resolved
#
```

4. Flush the previously faulty component from the host resource cache.

```
# fmadm flush /SYS/MB
fmadm: flushed resource history for /SYS/MB
#
```

5. Repair the fault in Oracle ILOM.

```
faultmgmtsp> fmadm repair /SYS/MB
faultmgmtsp> fmadm faulty
No faults found
faultmgmtsp>
```

Gigabit Ethernet (nxge) Driver Not Loading on Systems With Oracle Solaris 10 10/09 OS and a Solaris 10 9/10 Patchset or Solaris 10 8/11 Patchset (Bug ID 15677751)

Note – This issue was originally listed as CR 6995458.

A problem in the Oracle Solaris 10 10/09 package installation process prevents the nxge alias definition for SPARC T4 servers from being entered in /etc/driver_aliases. Without this alias being properly defined, the nxge cannot be attached.

Workaround: To correct this problem, perform the steps described below.

Note – You must be logged in as root to edit the driver_aliases file.

1. Add the following entry to /etc/driver_aliases:

```
nxge "SUNW,niusl-kt"
```

2. Reboot the server.

3. Configure the network interfaces.

The trapstat -T Command Causes Bad Watchdog Resets at TL2 (Bug ID 15720390)

Note – This issue was originally listed as CR 7052070.

In some instances, servers equipped with Solaris 10 10/09 or Solaris 10 09/10 might panic when running the trapstat -T command.

Workaround: Add the missing SUNWust1 and SUNWust2 packages from the Solaris 10 10/09 or Solaris 10 09/10 media. The Solaris 10 ISO image is available at https://support.oracle.com/epmos/faces/DocumentDisplay?id=1277964.1

Watchdog Timeouts Seen With Heavy Workloads and Maximum Memory Configurations (Bug ID 15737671, Bug ID 15744469, Bug ID 15771943)

Note – This issue was originally listed as CR 7083001.

Note – This issue is fixed in KU 147440-05, and in Oracle Solaris 11.

With certain unusually heavy workloads, especially where a highly processor-intensive workload is bound to CPU 0, the host might appear to suddenly reset back to OBP without any sign of a crash or a panic, and the Oracle ILOM event log contains a "Host watchdog expired" entry. This issue is more prevalent on select systems with full memory configurations.

If you encounter this sort of sudden reset, display the SP event log using this command from the Oracle ILOM CLI:

```
-> show /SP/logs/event/list
```

If you encounter 7083001, the event list includes an entry labeled, "Host watchdog expired."

Workaround: If you encounter 7083001, contact your authorized service provider to see if a fix is available.

You can also work around this problem by extending the watchdog period by adding this entry to the Oracle Solaris `/etc/system` file:

```
set watchdog_timeout = 60000
```

This will extend the watchdog timeout period to 1 minute (60000 milliseconds).

In extreme cases, you can also disable the watchdog timeout altogether by adding this entry to the `/etc/system` file:

```
set watchdog_enabled = 0
```

A reboot is required for any `/etc/system` modification to take effect.

If it is not desirable to reboot the system immediately after editing `/etc/system`, an additional temporary workaround that will take effect immediately can be applied. To apply this temporary workaround, execute the following command as `root`:

```
# psrset -c -F 0
```

This command will create a temporary processor set containing only CPU 0, preventing application workloads from using this processor and preventing this issue from occurring.

Note – If any threads had been bound to CPU 0, they will be unbound.

This temporary processor set will be removed on the next operating system reboot, at which point the `/etc/system` workaround described above will take effect.

`ereport.fm.fmd.module` Generated During a Reboot of an SDIO Domain (Bug ID 15738845, Bug ID 15742069)

Note – This issue was originally listed as CR 7085231.

Note – This issue is fixed in Oracle Solaris 11.1.

The server module might generate an `ereport.fm.fmd.module` message during a reboot of an SDIO domain. This ereport indicates that an error occurred on one of the `fmd` modules but the `fmdump` command does not display a valid message (`msg`).

For example:

```
# fmdump -eV -c ereport.fm.fmd.module
TIME                           CLASS
Sep 27 2011 06:27:19.954801492 ereport.fm.fmd.module
nvlist version: 0
        version = 0x0
        class = ereport.fm.fmd.module
        detector = (embedded nvlist)
        nvlist version: 0
                version = 0x0
                scheme = fmd
                authority = (embedded nvlist)
```

```
                nvlist version: 0
                        version = 0x0
                        product-id = ORCL,SPARC-T4-1
                        server-id = c193-133
                (end authority)

                mod-name = etm
                mod-version = 1.2
        (end detector)

        ena = 0x425fc9b065404001
        msg = cannot open write-only transport  <===
        __ttl = 0x1
        __tod = 0x4e81cf37 0x38e91d54
```

Workaround: You can safety ignore `ereport.fm.fmd.module` ereports.

Benign Error Message: `mptsas request inquiry page 0x83 for target:a, lun:0 failed!` (Bug ID 15809005)

Note – This issue was originally listed as CR 7092982.

The following error message might appear in `/var/adm/messages` when the system boots:

```
mptsas request inquiry page 0x83 for target:a, lun:0 failed!
```

Workaround: You can safely ignore this message.

Oracle VTS `dtlbtest` hangs when the CPU Threading Mode is Set to `max-ipc` (Bug ID 15743740, Bug ID 15744945)

Note – This issue was originally listed as CR 7094158.

The Oracle VTS component stress `dtlbtest` hangs when Oracle VM for SPARC is set to `max-ipc` threading mode. This issue is not specific to any processor type and can happen when both the following cases are true:

- Only one CPU per core is online.
- The total number of online CPUs is less than or equal to 128.

Workaround: Do not run the Oracle VTS Processor test in high stress mode when Oracle VM for SPARC is set to `max-ipc` mode.

Some `pciex8086,105f` Devices Fail to Attach (Bug ID 15774699)

Note – This issue was originally listed as CR 7147940.

Note – This issue is fixed in Oracle Solaris 11.1.

In some cases, the server becomes unresponsive after it is upgraded from System Firmware from 8.1.0.e or earlier to System Firmware 8.2.1.b or later. Log entries such as the following appear:

```
e1000g: [ID 801725 kern.warning] WARNING: pciex8086,105f - e1000g[0] : Mapping
registers failed
```

Workaround: Download and install Patch ID 148233-02 before updating the system firmware. This patch is available at `http://support.oracle.com`.

L2 Cache Uncorrectable Errors Causing a Reboot Abort (Bug ID 15826320)

On rare occasions, when rebooting a server running Oracle Solaris 11, an error similar to the following appears in the system console:

```
ABORT: ../../../greatlakes/n2/src/err_subr.s, line 0x291: strand_in
```

In addition, if you perform the `fmdump -eV` command, the following error appears:

```
ereport.cpu.generic-sparc.l2data-uc@/host proxied
```

This error appears on servers running Oracle VM Server for SPARC 2.1.x, which is embedded in all versions of Oracle Solaris 11 up to Oracle Solaris 11 SRU 8. This uncorrectable memory error occurs in the memory scrubbing process during system shutdown, and is not a data corruption or memory loss.

Workaround: If you encounter this issue, contact your authorized and upgrade to Oracle VM Server for SPARC 2.2.x.

Firmware Issues

This section describes issues related to the system firmware.

Performing First-Time Boot On Servers Equipped With the Sun Storage 6 Gb SAS PCIe 8-Port Internal RAID HBA

On servers ordered with the Sun Storage 6 Gb SAS PCIe 8-Port Internal RAID HBA card preinstalled, you must specify the full device path when performing first-time boot.

1. Set the *auto-boot* parameter to *false*:

```
sc> set /HOST/bootmode script="setenv auto-boot? false"
```

2. Use the full device path when performing first-time boot:

```
ok boot /pci@400/pci@2/pci@0/pci@c/LSI,mrsas@0/disk@0,0
```

Cold Reset Adds One Day to System Time (CR 15764743, Bug ID 15765255, Bug ID 15765770)

Note – This issue was originally listed as CR 7127740.

Note – This issue is fixed in System Firmware version 8.1.4.e.

After a cold reset, the server might add one day to the Oracle Solaris OS date and time. This possible date change will only occur on the first cold reset after the first day of a leap year (for example. January 1, 2012). Once you set the correct date using the Oracle Solaris OS `date`(1) command, the corrected date and time will persist across future resets.

Note – This extra day error condition will return if the clock offset stored in the SP is cleared for any reason. For example, the clock offset will be lost if the battery is replaced, Oracle ILOM is reset, or the system firmware is flashed without first saving and then restoring the configuration.

A cold reset is when you halt the OS and restart the service processor (SP). For example, you can use one of the following Oracle Solaris OS commands to halt the OS:

```
# shutdown -g0 -i0 -y
# uadmin 1 6
# init 5
# poweroff
```

Then, at the Oracle ILOM prompt, use the following commands to reset the host:

```
# stop /SYS
# start /SYS
```

Refer to the service manual, the administration guide, and the Oracle Solaris OS documentation for more information.

Workaround: After the first cold reset of the system, verify that system date and time are correct. If the date has been impacted by this issue, use the Oracle Solaris OS date(1) command to set the correct date and time.

For example, to set the date and time to be February 26, 9:00am, 2012, type:

```
# date 022609002012
```

Refer to the `date` (1) man page and the Oracle Solaris OS documentation for more information.

Timestamp for an Oracle ILOM Fault/Critical Event Might Be Off by One Hour (Bug ID 15802097)

Note – This issue was originally listed as CR 6943957.

Note – This issue is fixed in System Firmware 8.3.0.

The timestamp reported in an email generated in an Oracle ILOM Fault/critical event might be one hour later than the timestamp recorded in the event log.

Recovery Action: Check the timestamp recorded in the event log. If it does not match the timestamp reported in the email, use the event log time.

Missing Interrupt Causes USB Hub Hotplug Thread to Hang, Resulting In Process Hangs (Bug ID 15655752)

Note – This issue was originally listed as CR 6968801.

When running Oracle VTS on T4 series platforms, it is possible (although rare) for a Oracle VTS test to hang. If this happens, it might cause other processes and commands to hang, including `fmadm` and `prtconf`. The hung processes cannot be killed.

Workaround: Reboot the system. If the problem repeats, contact your authorized service provider. Avoid running Oracle VTS in production environments.

Units Used to Define the MIB Power Management Time Limit Are Reported in Seconds (Bug ID 15675720)

Note – This issue was originally listed as CR 6993008.

The MIB should report the `sunHwCtrlPowerMgmtBudgetTimelimit` in milliseconds, but the value displayed is in seconds.

Workaround: Understand that the value reported for `sunHwCtrlPowerMgmtBudgetTimelimit` is in seconds.

Message From `cpustat` Refers to Processor Documentation Incorrectly (Bug ID 15717099, Bug ID 15717100, Bug ID 15749141)

Note – This issue was originally listed as CR 7046898.

Note – This issue is fixed in Oracle Solaris 11.

A message displayed by the `cpustat` command says:

```
SPARC T4 Supplement to Oracle SPARC Architecture 2011
User's Manual" for descriptions of these events.
Documentation for Sun processors can be found at:
http://www.sun.com/processors/manuals
```

This document and web site listed in this message are not available.

`reboot disk` Command Occasionally Fails When `disk` Argument Picks Up Extra Characters (Bug ID 15816272)

Note – This issue was originally listed as CR 7050975.

Note – This issue is fixed in Oracle Solaris 10 01/13.

When running the `reboot` disk command, extraneous characters are occasionally added to the disk argument before it reaches the OpenBoot PROM (OBP). This results in a failure to boot.

Recovery Action: Repeat the boot request.

Explicit Processor Binding Might Block Strand Retirement (Bug ID 15733312)

Note – This issue was originally listed as CR 7071974.

The explicit assignment of specific process(es) to CPU strands, either by binding or by use of the High-IPC feature, might cause a situation in which the fault manager's attempt to retire a strand is rejected because the strand is marked as busy.

Workaround: Remove the explicit binding of any process to the CPU strand diagnosed as faulty.

Blue OK-to-Remove LED On Drive Does Not Light When The Drive Is Ready To Remove (Bug ID 15737491)

Note – This issue was originally listed as CR 7082700.

When you attempt to unconfigure a drive for removal, the drive's OK-to-Remove LED might not light. This happens after you place a drive in a slot in place of a drive that had a different WWID.

Workaround: If you inserted a drive after booting the server, realize that the OK-to-Remove LED does not perform this function until the server has been rebooted.

In Some Instances, a PCIe Card Might Disappear From the Device Tree Upon Reboot or During Power-On (Bug ID 15849720)

In some cases, a PCIe card might disappear from the device tree upon reboot or during power-on. The PCIe card reappears in the device tree when the system is power cycled or reset.

Workaround: Do one of the following:

- Power cycle the sever.
- Perform a system reset:

```
ok reset-all
```

Note – If the PCIe card does not reappear even after a power cycle or system reset, the PCIe card might be faulty

---

System Firmware 8.2.0 Contains a New Version of the `scvar` Database (Bug ID 16184046)

A new version of the `scvar` database was introduced in system firmware 8.2.0. Upgrading the system firmware from a version prior to 8.2.0 to system firmware version 8.2.0 or later reverts the `scvar` database to default settings after the installation completes. This also erases any date/time offsets that have not been saved in an LDOMs `spconfig` file, making it necessary to re-set the date/time on affected domains.

System Firmware 8.3.0.b Incompatible with the Sun Flash Accelerator F40 PCIe Card (Bug ID 16813726)

Servers equipped with System Firmware 8.3.0.b might exhibit severe performance degradation due to thermal limiting of the Sun Flash Accelerator F40 PCIe Card.

Workaround: If your server is equipped with the Sun Flash Accelerator F40 PCIe Card, do not not upgrade to System Firmware 8.3.0.b. If you have already upgraded a server equipped with a Sun Flash Accelerator F40 PCIe Card to System Firmware 8.3.0.b and are encountering thermal-related performance degradation, downgrade to System Firmware 8.2.2.c.

Documentation Issues

The electrical and power specifications listed in the *SPARC T4-1 Server Installation Guide* are incorrect. The corrected values are as follows:

Parameter	Value (at 200 VAC)	Value (at 100 VAC)
Operating input voltage ranges (input voltage tolerance +/- 10%)	200 to 240 VAC, 50-60 Hz	100 to 120 VAC, 50/60 Hz
Maximum operating input current (see note)	3.9 A	7.87 A
Maximum operating input power (see note)	762 W	771 W
Maximum heat dissipation	2330 BTU/hr 2459 KJ/hr	2239.7 BTU/hr 2556.8 KJ/hr
Maximum standby power	20 W	22 W
Maximum server configuration specification under nominal temperature and voltage conditions: One T4 processor, sixteen 32-GByte DDR3 DIMMs, eight HDDs, and six I/O cards.		
Idle AC input power	469 W	485 W
Peak AC input power (running SpecJBB)	683 W	713 W
Minimum server configuration specification under nominal temperature and voltage conditions: One T4 processor, four 4-GByte DDR3 DIMMs, no HDDs, and no I/O cards.		
Idle AC input power	276 W	280 W
Peak AC input power (running SpecJBB)	335 W	358 W

Note – Use these specifications only as a general planning guide. To determine power values based on expected workloads, use the SPARC T4-1 power calculator located at: http://www.oracle.com/goto/powercalculators/.