

SPARC T5-4 Server Product Notes

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Using This Documentation

- **Overview** – Provides late-breaking formation about Oracle's SPARC T5-4 server.
- **Audience** – Technicians, system administrators, and authorized service providers
- **Required knowledge** – Advanced experience configuring and troubleshooting hardware and software.

Product Documentation Library

Late-breaking information and known issues for this product are included in the documentation library at <http://www.oracle.com/goto/T5-4/docs>.

Feedback

Provide feedback about this documentation at <http://www.oracle.com/goto/docfeedback>.

Late-Breaking Information

These topics provide important information and late-breaking news about the server:

- [“IMPORTANT - Install Latest OS Updates, Patches, and Firmware” on page 11](#)
- [“Preinstalled Software” on page 12](#)
- [“Minimum Supported Versions of the Firmware, OS, and Software” on page 13](#)
- [“Mandatory Oracle Solaris 11 OS Package Updates” on page 14](#)
- [“Mandatory Oracle Solaris 10 OS Patches” on page 14](#)
- [“Installing and Booting Oracle Solaris 11 From Devices Connected to a USB Port” on page 17](#)
- [“I/O Slot Restrictions” on page 18](#)
- [“Known Issues” on page 19](#)
- [“Documentation Issues” on page 44](#)

IMPORTANT - Install Latest OS Updates, Patches, and Firmware

Some product features are enabled only when the latest versions of patches or firmware are installed. In order to retain optimal performance, security, and stability, installing the latest available patches or firmware is required.

Verify that the server firmware version is at a minimum 9.5.1.b or higher.

1. Check the system firmware:

From the ILOM web interface, click System Information → Summary, then view the property value for the System Firmware Version in the General Information table.

From the command prompt, type:

```
-> show /HOST
```

2. Ensure the server firmware version is at the minimum required version, shown above, or a subsequent release, if available.
3. If required, download the latest available software release version from My Oracle Support at:

<https://support.oracle.com>

4. If required, update the server firmware.

Refer to the information about performing firmware updates in the *Oracle ILOM Administrator's Guide for Configuration and Maintenance*. Ensure that you perform the preparatory steps described in that document before updating the firmware.

Preinstalled Software

Software	Location	Description
Oracle Solaris 11.2 OS SRU 3.5	The OS is installed on drive 0, using a ZFS file system.	Host OS.
Oracle VM Server for SPARC [†]	/opt/SUNWldm	Manages logical domains.
Oracle VTS [*]	/usr/sunvts	Provides hardware validation tests.

[†]These software components are part of the Oracle Solaris 11 OS distribution.

The preinstalled OS is ready to be configured at the appropriate point when you first apply power to the server.

Mandatory package updates might not be preinstalled. Ensure that you obtain and install all mandatory updates before you put the server into production. See [“Mandatory Oracle Solaris 11 OS Package Updates” on page 14](#).

Refer to the Oracle Solaris documentation for instructions on installing and configuring the Oracle Solaris OS.

You can reinstall the OS, along with mandatory package updates or patches, instead of using the preinstalled OS. See [“Minimum Supported Versions of the Firmware, OS, and Software” on page 13](#).

Minimum Supported Versions of the Firmware, OS, and Software

If you configure the server with Oracle VM Server for SPARC, you can install various combinations of the minimum (or later) versions of the OS. For example, you can use Oracle Solaris 11.1.4.6 for the control domain, and Oracle Solaris 10 9/10 in guest domains.

Note - Oracle Solaris 11 is the recommended OS for T5 servers. The advantages of Oracle Solaris 11 include simplified installation and maintenance, enhanced virtualization capabilities and performance enhancements. A more detailed list may be found at: <http://www.oracle.com/technetwork/server-storage/solaris11/overview/solaris-matrix-1549264.html>

Note - Oracle VM Server for SPARC 3.1.1 requires firmware version 9.1.2.d. Oracle Solaris 11.1 SRU 17 contains Oracle VM Server for SPARC 3.1.1.

Software	Minimum Supported Versions
Oracle System Firmware	<p>9.0.0.h for fully populated servers (two processor modules).</p> <p>9.1.0.b for half-populated servers (one processor module).</p> <p>Note - Both versions include Oracle ILOM 3.2.1.</p> <p>9.2.1.x for installing directly from a USB device. See “Installing and Booting Oracle Solaris 11 From Devices Connected to a USB Port” on page 17.</p> <p>Note - The server might require more recent firmware to support Oracle Solaris Kernel Zones. For specific firmware requirements, refer to <i>Creating and Using Oracle Solaris Kernel Zones</i>.</p>
Oracle Solaris 11 OS	<p>For the control domain, guest domains, and nonvirtualized configurations:</p> <p>Oracle Solaris 11.1. 4.6</p> <p>Includes these software components:</p> <ul style="list-style-type: none"> ■ Oracle VM Server for SPARC 3.0.0.2 ■ Oracle Electronic Prognostics ■ Oracle VTS 7.0 PS 15 (S11.1 SRU4) <p>Also see “Mandatory Oracle Solaris 11 OS Package Updates” on page 14.</p>
Oracle Solaris 10 OS	<p>For the control domain, guest domains, or for nonvirtualized configurations:</p> <ul style="list-style-type: none"> ■ Oracle Solaris 10 1/13 plus patches and and Oracle VM Server for SPARC (SUNWldm package) <p>For guest domains only:</p> <ul style="list-style-type: none"> ■ Oracle Solaris 10 9/10 OS or Oracle Solaris 10 8/11 OS, plus Oracle Solaris 10 1/13 SPARC Bundle and patches.

Software	Minimum Supported Versions
	Note - Oracle Electronic Prognostics 1.3 is not included, but you can install it separately. Note - The Oracle Solaris 10 OS includes Oracle VTS 7 PS15. Also see “Mandatory Oracle Solaris 10 OS Patches” on page 14.

Mandatory Oracle Solaris 11 OS Package Updates

No package update is required at this time to use the preinstalled Oracle Solaris 11.2 OS with this server.

If you reinstall the OS, you might need to install certain package updates before you put the server and optional hardware or software components into production.

Install the most recent Oracle Solaris 11.2 Support Repository Update (SRU). Taking this action ensures that your server has the latest software for the best performance, security, and stability.

Use the `pkg info entire` command to display which SRU is currently installed on your server.

Use the `pkg` command or the package manager GUI to download any available SRUs from <https://pkg.oracle.com/solaris/support>.

Note - To access the Oracle Solaris 11 package update repository, you must have an Oracle support agreement that enables you to install a required SSL certificate and support key. Refer to the article at: <http://www.oracle.com/technetwork/articles/servers-storage-admin/o11-018-howto-update-s11-1572261.html> Go to Oracle's certificate request web site at: <https://pkg-register.oracle.com>.

Mandatory Oracle Solaris 10 OS Patches

If you choose to install the Oracle Solaris 10 OS, you must also install additional patches, and in some cases, a patch bundle. See the following sections:

- “Oracle Solaris 10 1/13 Mandatory Patches” on page 15
- “Oracle Solaris 10 8/11 Mandatory Patches” on page 15
- “Oracle Solaris 10 9/10 Mandatory Patches” on page 16
- “Obtain Patches” on page 16

Oracle Solaris 10 1/13 Mandatory Patches

This version of the OS is supported in the control domain, in guest domains, or for nonvirtualized configurations:

Installation Order	OS or Patch
1	Oracle Solaris 10 1/13 OS
2	Mandatory patches: <ul style="list-style-type: none"> ■ 148322-07 (or higher) ■ 148324-06 (or higher) ■ 148888-03 (or higher) ■ 149638-01 (or higher) ■ 149644-01 (or higher) ■ 150011-02 (or higher) ■ 150025-01 (or higher) ■ 150027-01 (or higher) ■ 150107-01 (or higher)

Oracle Solaris 10 8/11 Mandatory Patches

This version of the OS is supported only in guest domains.

Installation Order	OS or Patch
1	Oracle Solaris 10 8/11 OS
2	Oracle Solaris 10 1/13 SPARC Bundle
3	All of the Oracle Solaris 10 1/13 mandatory patches. See “Oracle Solaris 10 1/13 Mandatory Patches” on page 15 .

Note - Until the Oracle Solaris 10 1/13 SPARC Bundle is installed, the Oracle Solaris 10 8/11 OS supports only 512 CPUs and 3840 Gbytes of memory. For servers exceeding those resources, reduce the resources until the Oracle Solaris 10 1/13 SPARC Bundle is installed, or install a later version of the Oracle Solaris OS.

Note - Until the Oracle Solaris 10 1/13 SPARC Bundle is installed, you might encounter bugs 15712380, 15704520, and 15665037. The first two bugs are resolved when the Oracle Solaris 10 1/13 SPARC bundle is installed. These bugs do not impact the patch installations.

Oracle Solaris 10 9/10 Mandatory Patches

This OS is supported only in guest domains.

Installation Order	OS or Patch
1	Oracle Solaris 10 9/10 OS
2	Oracle Solaris 10 1/13 SPARC Bundle
3	All of the Oracle Solaris 10 1/13 mandatory patches. See “Oracle Solaris 10 1/13 Mandatory Patches” on page 15.

Note - Until the Oracle Solaris 10 1/13 SPARC Bundle is installed, the Oracle Solaris 10 9/10 OS supports only 512 CPUs and 3840 Gbytes of memory. For servers exceeding those resources, reduce the resources until the Oracle Solaris 10 1/13 SPARC Bundle is installed, or install a later version of the Oracle Solaris OS.

Note - Until the Oracle Solaris 10 1/13 SPARC Bundle is installed, you might encounter bugs 15712380, 15704520, and 15665037. The first two bugs are resolved when the Oracle Solaris 10 1/13 SPARC Bundle is installed. These bugs do not impact the patch installations.

▼ Obtain Patches

Perform these steps to obtain patches for the Oracle Solaris 10 OS.

1. Sign in to My Oracle Support:

<http://support.oracle.com>

2. Select the Patches & Updates tab.

3. Search for a patch using the Patch Search panel.

When searching for a patch using the Patch Name or Number field, you must specify the complete name or number of the patch. For example:

- **Solaris 10 1/13 SPARC Bundle**
- **13058415**

■ **147159-03**

To search using a patch number without the revision number (last two digits), type % in place of the revision number. For example:

147159-%

4. **Once you locate the patch, access the README and download the patch from the site.**

The patch README provides the patch installation instructions.

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, 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/server-storage/solaris11/downloads/index.html>

Note - Installing directly from a USB device requires System Firmware 9.2.1.x or later.

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 Connector	Path
USB 0 (Rear top)	/pci@4c0/pci@1/pci@0/pci@c/pci@0/pci@6/usb@0/storage@3/

USB Connector	Path
USB 1 (Rear bottom)	/pci@4c0/pci@1/pci@0/pci@c/pci@0/pci@6/usb@0/storage@2/
USB 2 (Front top)	/pci@300/pci@1/pci@0/pci@4/pci@0/pci@6/usb@0/storage@3/
USB 3 (Front bottom)	/pci@300/pci@1/pci@0/pci@4/pci@0/pci@6/usb@0/storage@4/

These paths appear in the list of devices that is output by the show-dev OpenBoot command.

Note - All four USB ports support the USB 3.0 protocol.

I/O Slot Restrictions

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.

Note - This table lists only the 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 server but are not subject to slot or quantity restrictions.

Description	Part Number	Maximum	Restrictions
Network Interface Card			
Sun Dual 10GbE SFP+ PCIe Low Profile Adapter	X1109A-Z	8	
InfiniBand			
Sun InfiniBand Dual Port 4x QDR PCIe Low Profile Host Channel Adapter	7104073, 7104074	2 (single-PM configurations) 4 (dual-PM configurations)	Single-PM configurations: supported in slots 4 and 8 only. Adjacent slots (next higher slot number) must remain unoccupied. For example, if you install this card in slot 4, slot 5 must remain unoccupied. Dual-PM configurations: Install in slots 3-14 only. Do not install in slots 1, 2, 15, or 16.
Miscellaneous			
Sun Flash Accelerator F40 PCIe	7104482	8	Requires PCIe Hot Plug Carrier Extension. Cannot be installed in slot 16.
Sun Flash Accelerator F80 PCIe	7107092	8	Requires PCIe Hot Plug Carrier Extension. Cannot be installed in slot 16.

Description	Part Number	Maximum	Restrictions
Sun Crypto Accelerator 6000Board	X6000A-N	2	

Known Issues

These topics describe known issues with the server.

- [“Security Updates for System Firmware and Oracle Solaris OS” on page 20](#)
- [“When You Create Logical Domains, Some Memory Is Reserved by the Server” on page 20](#)
- [“sas2ircu Might Fail to Create a RAID Volume \(BugID 15788910\)” on page 21](#)
- [“rKVMS Does Not Support Redirecting Storage From a SPARC Client \(BugID 15795058\)” on page 23](#)
- [“Mouse Pointer Is Not Aligned With the Cursor in a Remote Window \(BugID 15798251\)” on page 23](#)
- [“xhci Device Failed During Boot on USB Ports \(BugID 15809582\)” on page 25](#)
- [“/System/Cooling Target Lists Power Supply Fans as Not Supported \(BugID 15809846\)” on page 25](#)
- [“File Descriptor Leakage in libldom/ldom_xmpp_client.c \(BugID 15811297\)” on page 26](#)
- [“ilomconfig Might Report Internal Error \(BugID 15823485\)” on page 26](#)
- [“High-speed PCIe I/O Cards Sometimes Downtrain to Gen1 I/O Speed \(BugID 15825866\)” on page 27](#)
- [“PCIe Fabric Error Panic or eReport Occurs on Slots Populated With the StorageTek 8 Gb FC PCI-Express HBA \(Bug ID 15894188\)” on page 29](#)
- [“Active mempm Should Balance Cage Assignment Across All Nodes \(Bug ID 15944881\)” on page 30](#)
- [“Link error on port 3 Warning \(BugID 16038894\)” on page 31](#)
- [“Drive OK to Remove LED Might Not Illuminate When a Drive is Unconfigured \(BugID 16051551\)” on page 32](#)
- [“FPGA iPOST power-on-reset, error-reset, and hw-change Triggers Do Not Work \(BugID 16192025\)” on page 34](#)
- [“Oracle ILOM Errors Might Occur When Multiple LDOM Configuration Files Exist Using the Same Name \(BugID 16239544\)” on page 36](#)
- [“CPU Power Management Can Lower Disk IOPS Performance \(BugID 16355418, 17179054\)” on page 36](#)
- [“While SR-IOV Devices Are in Use, Attempts to Unbind or Remove Resource Hangs And Cannot Be Stopped by Using Ctrl-C \(BugID 16426940\)” on page 37](#)

- “Oracle ILOM Sends V1 Authority, but Oracle Solaris Can Not Handle V1 Authority (BugID 16456603)” on page 37
- “Management of SP Does Not Display a Table as Expected (BugID 16607793)” on page 37
- “In Some Instances During First-Time Boot, an Oracle Solaris OS Driver Attempts to Attach a Drive Controller Prematurely, Causing a Drive Attach Error (Bug ID 16608475)” on page 39
- “OPS Failing `fault.ops.chassis.voltage.fail` on FRU /SYS/MB at Component /SYS/MB (Bug ID 18070361)” on page 41
- “POST Abort When Retiring Multiple Memory Pages (Bug ID 18091447)” on page 41
- “RAID 10 Volumes Created Instead of RAID 1E on an Even Number of Target Disks (Bug ID 18335578)” on page 42
- “Europa-Based 10 GbE PCIe Cards Generate Device Training Errors (Bug ID 18647589)” on page 42
- “Processor Module Fault Results in Single Point of Failure (Bug ID 19439215)” on page 42
- “Support for the InfiniBand Dual Port 4x QDR PCIe Low Profile Host Channel Adapter (Bug ID 19871511, 20077539)” on page 43
- “Server Cannot Be Shipped in a Rack” on page 44
- “Processor Module Bezel Labels Are Incorrect” on page 44

Security Updates for System Firmware and Oracle Solaris OS

The following include critical security updates for your server:

- System Firmware 9.3.0 or later
- Oracle Solaris 11.2 OS SRU 3.5 or later

When You Create Logical Domains, Some Memory Is Reserved by the Server

When you use Oracle VM Server for SPARC, you can assign most of the memory in a SPARC T5 server to logical domains. However, a small portion of the server's memory is preassigned to software components, the hypervisor, and certain I/O devices. To determine which portions of memory are unavailable for logical domains, type this command:

```
# ldm ls-devices -a mem
```

In the output, look for rows that include `_sys_` in the Bound column. Each of those portions of memory is not available for logical domains.

sas2ircu Might Fail to Create a RAID Volume (BugID 15788910)

Note - This issue was fixed in Oracle Solaris 11.1.

When you use the `sas2ircu` command within Oracle Solaris to create a RAID volume, the command might report that volume creation has failed. For example:

```
# ./sas2ircu 0 create raid0 max 1:0 1:1 1:2 my-RAID0
LSI Corporation SAS2 IR Configuration Utility.
Version 14.00.00.00 (2012.07.04)
Copyright (c) 2009-2012 LSI Corporation. All rights reserved.

You are about to create an IR volume.

WARNING: Proceeding with this operation may cause data loss or data
corruption. Are you sure you want to proceed (YES/NO)? yes

WARNING: This is your last chance to abort this operation. Do you wish
to abort (YES/NO)? no
Please wait, may take up to a minute...
@ Nov 6 09:46:47 sys-33 scsi: /pci@300/pci@1/pci@0/pci@2/scsi@0 (mpt_sas0):
Nov 6 09:46:47 sys-33      Volume 0 is now , enabled, inactive
@ Nov 6 09:47:45 sys-33 scsi: WARNING: /pci@300/pci@1/pci@0/pci@2/scsi@0
(mpt_sas0):
Nov 6 09:47:45 sys-33      passthrough command timeout
@ SAS2IRCU: IocStatus = 0 IocLogInfo = 0SAS2IRCU: Volume creation failed.
SAS2IRCU: Error executing command CREATE
#
```

If you retype the `sas2ircu` command at the Oracle Solaris prompt, the command will fail. The `sas2ircu` command will state that the wrong number of disks have been provided, since they had already been committed to a volume. For example:

```
# ./sas2ircu 0 create raid0 max 1:0 1:1 1:2 my-RAID0
LSI Corporation SAS2 IR Configuration Utility.
```

Version 14.00.00.00 (2012.07.04)
Copyright (c) 2009-2012 LSI Corporation. All rights reserved.

```
SAS2IRCU: Number of drives specified is higher than number of drives
available to create a RAID volume!
SAS2IRCU: Error executing command CREATE.
#
```

After the initial failure of the `sas2ircu` command, other disk utility commands, such as `format`, might show disk members of the volume marked as `drive not available`. The `format` command might appear to hang and will require that you type `Ctrl-C` to abort the command. For example:

```
# format
Searching for disks...done

AVAILABLE DISK SELECTIONS:
   0. c0t500151795955C40Ed0 <drive not available>
@    /scsi_vhci/disk@g500151795955c40e
    /dev/chassis/unknown.1222BDC067//SYS/SASBP/HDD0/disk
   1. c0t500151795955C19Ed0 <drive not available>
@    /scsi_vhci/disk@g500151795955c19e
    /dev/chassis/unknown.1222BDC067//SYS/SASBP/HDD1/disk
   2. c0t5001517959567D4Dd0 <drive not available>
@    /scsi_vhci/disk@g5001517959567d4d
    /dev/chassis/unknown.1222BDC067//SYS/SASBP/HDD2/disk
Ctrl-C
#
```

Workaround: Reboot the system to restore the volume to a working state.

```
# reboot
```

Alternatively, you can use one of the other available methods to create the volume, instead of the `sas2ircu` command.

- Create a volume under Oracle Solaris with the `raidconfig` command. The Oracle Hardware Management Pack includes the `raidconfig` command.

You can download the Oracle Hardware Management Pack software at:

<http://support.oracle.com>

You can read and download documentation for the version of Oracle Hardware Management Pack you are using at:

<http://www.oracle.com/goto/OHMP/docs>

- Create a volume at the OpenBoot prompt with the Fcode-based RAID utility commands.

For instructions on using the FCode-based RAID utility commands, refer to the *SPARC T5 Series Servers Administration Guide*.

rKVMS Does Not Support Redirecting Storage From a SPARC Client (BugID 15795058)

Starting the Storage feature of Java Remote Console Plus on an Oracle Solaris system is not supported.

Workaround: Start the Storage feature of Java Remote Console Plus on a Linux or Windows system. For a complete list of supported browsers, operating systems, and platforms, refer to the *Oracle ILOM Administrator's Guide for Configuration and Maintenance*.

Mouse Pointer Is Not Aligned With the Cursor in a Remote Window (BugID 15798251)

Note - This issue was fixed in SRU11.1.9.5.1

The mouse pointer in the Oracle ILOM video remote console might not track well. The cursor position might be out of sync with the Xorg server on the Oracle Solaris host, a condition that makes mouse navigation and selection difficult.

Workarounds:

This procedure does not make a permanent change, but it does make it easier for you to navigate with the mouse and enables you to perform steps that result in a more permanent change.

1. Log in to the system on the Gnome desktop.

If you have problems obtaining a terminal window, try one of the following methods:

- Click the right mouse button. When the desktop pop up is displayed, type: **e**
- Use the keyboard to obtain a terminal window by typing Alt-F2. Then type: **gnome-terminal**
- Select the desired terminal window as active by typing Alt-Tab.

2. In a terminal window, type:

```
xset m 1 1
```

3. In the upper left corner of the Oracle ILOM Remote System Console Plus window, select Mouse Sync.

To make a more permanent fix, change the acceleration, sensitivity and threshold mouse preference values to their minimums.

1. From the Gnome desktop, access the mouse preferences window. Depending on the version of the Gnome desktop installed, select one of the following:
 - System > Preferences > Mouse.
 - Launch > System > Preferences > Mouse.

Tip - You also can reach this point by typing Alt-F2 and then typing: **gnome-mouse-properties**

2. Change the mouse preferences values:
 - Pointer Speed Acceleration = Slow
 - Pointer Speed Sensitivity = Low
 - Drag and Drop Threshold = Small

If you are using the keyboard, navigate by pressing Tab until the desired item is highlighted. For each value, press the left arrow key to move the slides all the way to the left.

These changes are permanent and will persist after screenlock and logout.

In Oracle Solaris 11, you can use another method to initially disable problematic mouse acceleration. However, subsequent changes to the mouse acceleration during the Xorg session will override the changes made by this method.

1. Open this file for editing:
`/etc/hal/fdi/preprobe/10osvendor/10-x11-input.fdi`
Ensure that you do not leave any other copies of the file in this directory.
2. Locate the following lines:

```
<merge key="input.x11_options.StreamsModule" type="string">usbms</merge>  
<merge key="input.x11_options.Protocol" type="string">VUID</merge>
```

3. Following those lines, add these lines and save the file:

```
<merge key="input.x11_options.AccelerationScheme" type="string">none</merge>  
<merge key="input.x11_options.AccelerationNumerator" type="string">1</merge>  
<merge key="input.x11_options.AccelerationDenominator"  
type="string">1</merge>
```

```
<merge key="input.x11_options.AccelerationThreshold" type="string">1</merge>
```

4. Type these Oracle Solaris commands:

```
# svcadm restart hal
# svcadm restart gdm
```

xhci Device Failed During Boot on USB Ports (BugID 15809582)

Note - Booting the server from a USB port is supported as of Oracle Solaris 11.2.

When you boot the Oracle Solaris OS with a USB 3.0 device installed in one of the front or rear USB ports, the following message might be displayed.

```
WARNING /pci@300/pci@1/pci@0/pci@4/pci@0/pci@6/usb@0
(xhci0): Connecting device on port 7 failed
```

Workaround: You can safely ignore this message.

/System/Cooling Target Lists Power Supply Fans as Not Supported (BugID 15809846)

Note - This issue was fixed in Oracle ILOM 3.2.1.

When you type this Oracle ILOM command:

```
-> show /System/Cooling
```

the output under Properties includes the following lines:

```
installed_power_supply_fans = Not Supported
max_power_supply_fans = Not Supported
```

Workaround: Type the following command to display accurate information about installed power supply fans:

```
-> show /SYS -l all type==?Fan? value
```

File Descriptor Leakage in libldom/ ldom_xmpp_client.c (BugID 15811297)

Note - This issue was fixed in SRU 11.1.5.5.

The Oracle Solaris Predictive Self-Healing (PSH) fault manager daemon (fmd) can become non-operational when the Logical Domains Manager (ldmd) is down for a period of time. On SPARC T5 series servers, I/O faults, including disk faults, are diagnosed by the Oracle Solaris fmd. Other faults are diagnosed by Oracle ILOM on the SP, and are not affected by this bug.

As soon as a patch with the fix becomes available, you should install the patch. See [“Obtain Patches” on page 16](#).

Workaround: If you suspect that I/O faults are not being reported, execute these steps:

1. Determine whether or not the ldmd is online.

If ldmd is online, then this bug is not the issue. Refer to the fault management procedures in the service manual.

If ldmd is offline, go to Step 2.

2. Restart ldmd.
3. Restart fmd.

An I/O fault might have occurred, but the fault was not diagnosed by PSH. View the system logs, as described in the service manual, to isolate the problem.

ilomconfig Might Report Internal Error (BugID 15823485)

Note - This issue was fixed in Oracle Solaris 11.2.

The Oracle Solaris `ilomconfig` command that enables the communication channel between the OS and the SP might occasionally fail with an `Internal Error` message.

This communication channel is enabled by default and is not usually disabled in the normal course of operation. However, the channel can be disabled by superuser with this Oracle Solaris command.

```
# ilomconfig disable interconnect
Host-to-ILOM interconnect disabled.
```

Occasionally, the command to enable the interconnect might fail again with this error message:

```
# ilomconfig enable interconnect
ERROR: Internal error
```

If this situation happens, follow the workaround to reenabling the link, because the link is used for transferring diagnostic data between the Oracle Solaris instance and the SP and must be reenabled promptly.

Workaround: Retype the command to enable the interconnect.

```
# ilomconfig enable interconnect
Host-to-ILOM interconnect successfully configured.
```

If the failure persists, contact your authorized Oracle Service Provider for assistance.

High-speed PCIe I/O Cards Sometimes Downtrain to Gen1 I/O Speed (BugID 15825866)

On very rare occasions, some PCIe option cards that are capable of data transfer rates of 5.0 GT/s and above might fail to train at the maximum supported target speed. Instead, they train at the minimum speed of 2.5 GT/s, which might lead to poor I/O performance.

Workaround:

1. If you suspect poor I/O performance, use the `prtdiag` command to view PCIe card I/O performance.

The current link data rate for each slot is displayed under the Speed heading.

```
# prtdiag
System Configuration: Oracle Corporation sun4v
Memory size: 523008 Megabytes
...
===== IO Devices =====
Slot +          Bus  Name +                               Model      Speed
-----
```

Known Issues

Status	Type	Path		
/SYS/MB/USB_CTLR	PCIE	usb-pciexclass,0c0330		5.0GTx1
/SYS/RCSA/PCIE4	PCIE	SUNW,qlc-pciex1077,2532	QLE2562	5.0GTx4
/SYS/RIO/NET1	PCIE	network-pciex8086,1528		5.0GTx8
/pci@300/pci@1/pci@0/pci@4/pci@0/pci@6/usb@0				
/pci@440/pci@1/pci@0/pci@c/SUNW,qlc@0				
/SYS/RCSA/PCIE10	PCIE	SUNW,qlc-pciex1077,2532	QLE2562	5.0GTx4
		/pci@480/pci@1/pci@0/pci@4/SUNW,qlc@0		
/SYS/RCSA/PCIE10	PCIE	SUNW,qlc-pciex1077,2532	QLE2562	5.0GTx4
		/pci@480/pci@1/pci@0/pci@4/SUNW,qlc@0,1		
/pci@300/pci@1/pci@0/pci@4/pci@0/pci@8/network@0,1				
/SYS/RIO/NET0	PCIE	network-pciex8086,1528		5.0GTx8
/SYS/RCSA/PCIE4	PCIE	SUNW,qlc-pciex1077,2532	QLE2562	5.0GTx4
/SYS/RCSA/PCIE6	PCIE	SUNW,qlc-pciex1077,2532	QLE2562	5.0GTx4
		/pci@600/pci@1/pci@0/pci@8/SUNW,qlc@0		
/SYS/RCSA/PCIE6	PCIE	SUNW,qlc-pciex1077,2532	QLE2562	5.0GTx4
		/pci@600/pci@1/pci@0/pci@8/SUNW,qlc@0,1		
/SYS/RCSA/PCIE2	PCIE	SUNW,qlc-pciex1077,2532	QLE2562	5.0GTx4
/pci@300/pci@1/pci@0/pci@4/pci@0/pci@8/network@0				
/pci@440/pci@1/pci@0/pci@c/SUNW,qlc@0,1				
/SYS/RCSA/PCIE8	PCIE	SUNW,qlc-pciex1077,2532	QLE2562	5.0GTx4
		/pci@640/pci@1/pci@0/pci@8/SUNW,qlc@0		
/SYS/RCSA/PCIE8	PCIE	SUNW,qlc-pciex1077,2532	QLE2562	5.0GTx4
		/pci@640/pci@1/pci@0/pci@8/SUNW,qlc@0,1		
/pci@400/pci@1/pci@0/pci@c/SUNW,qlc@0				
/SYS/RIO/NET2	PCIE	network-pciex8086,1528		5.0GTx8
/SYS/RCSA/PCIE2	PCIE	SUNW,qlc-pciex1077,2532	QLE2562	5.0GTx4
/pci@6c0/pci@1/pci@0/pci@c/pci@0/pci@4/network@0				
/pci@400/pci@1/pci@0/pci@c/SUNW,qlc@0,1				
/SYS/RIO/USB_CTLR	PCIE	usb-pciexclass,0c0330		5.0GTx1
/SYS/RIO/NET3	PCIE	network-pciex8086,1528		5.0GTx8
/pci@6c0/pci@1/pci@0/pci@c/pci@0/pci@6/usb@0				
/pci@6c0/pci@1/pci@0/pci@c/pci@0/pci@4/network@0,1				
/SYS/RIO/VIDEO	PCIE	display-pciex102b,522		2.5GTx1
/pci@6c0/pci@1/pci@0/pci@c/pci@0/pci@7/display@0				
/SYS/MB/SASHBA1	PCIE	scsi-pciex1000,87	LSI,2308_2	5.0GTx8
/pci@6c0/pci@1/pci@0/pci@c/pci@0/pci@c/scsi@0				

Refer to the documentation for your specific option cards to determine their target transfer rate.

2. If a PCIe card does not match the maximum target speed supported by the system, then remove and reinstall the PCIe card using the hot-serviceable method, as described in the *SPARC T5-4 Service Manual*.

Note - You do not need to physically remove and install the PCIe card.

PCIe Fabric Error Panic or eReport Occurs on Slots Populated With the StorageTek 8 Gb FC PCI-Express HBA (Bug ID 15894188)

The SPARC T5-4 server does not support older versions of the StorageTek 8 Gb FC PCI-Express HBA that run at 5 Gbytes with a x4 channel. The SPARC T5-4 server supports cards that run at 2.5 Gbytes with a x8 channel. Note that the bandwidth and performance are the same for both types of HBAs.

If you have already installed the StorageTek 8 Gb FC PCI-Express HBA, you can check the version by using the `fcinfo(1M)` command. Or, if the `fcinfo(1M)` command does not return data about the HBA, you can use the `prtconf(1M)` command to check the speed and channel width of the HBA.

Note - Only factory-installed Pallene-E HBAs are supported. These can be identified by a sticker printed with the code, "NCAT-4891."

You can check the HBA using one of the following methods:

- [“Check the HBA \(fcinfo Command\)” on page 29](#)
- [“Check the HBA \(prtdiag Command\)” on page 30](#)

Check the HBA (fcinfo Command)

If the older version of the HBA is installed, the output looks like this:

```
# fcinfo hba-port
HBA Port WWN: 21000024ff56bce8
    Port Mode: Initiator
    Port ID: 0
    OS Device Name: /dev/cfg/c28
    Manufacturer: QLogic Corp.
    Model: 371-4325-02
...
```

If the new version of the HBA is installed, the output looks like this:

```
# fcinfo hba-port
HBA Port WWN: 21000024ff56bce8
  Port Mode: Initiator
  Port ID: 0
  OS Device Name: /dev/cfg/c28
  Manufacturer: QLogic Corp.
  Model: 7076907
...
```

Check the HBA (prtdiag Command)

If the older version is installed, and if the `fcinfo(1M)` command did not return data about the HBA, use the `prtdiag(1M)` command to obtain the data. If the old version is installed, the output looks like this:

```
# prtdiag
...
/SYS/RCSA/PCIE7  PCIE  SUNW,qlc-pciex1077,2532      QLE2562      5.0GTx4
                  /pci@540/pci@1/pci@0/pci@e/SUNW,qlc@0
/SYS/RCSA/PCIE7  PCIE  SUNW,qlc-pciex1077,2532      QLE2562      5.0GTx4
                  /pci@540/pci@1/pci@0/pci@e/SUNW,qlc@0,1
...
```

If the new version is installed, the output looks like this:

```
# prtdiag
...
/SYS/RCSA/PCIE3  PCIE  SUNW,qlc-pciex1077,2532      QLE2562      2.5GTx8
                  /pci@340/pci@1/pci@0/pci@6/SUNW,qlc@0
/SYS/RCSA/PCIE3  PCIE  SUNW,qlc-pciex1077,2532      QLE2562      2.5GTx8
                  /pci@340/pci@1/pci@0/pci@6/SUNW,qlc@0,1
...
```

Workaround: There is no workaround for this issue. You must replace the older version with the newer version of the HBA.

Active mempm Should Balance Cage Assignment Across All Nodes (Bug ID15944881)

Note - This issue was fixed in SRU11.1.6.4.0.

On large SPARC T5 series server domains, certain workloads might exhibit unexpected poor performance or negative performance scaling. In addition, on large SPARC T5 servers with a high number of network adapters, aggregate network throughput might be limited to no more than ~12 GB/second.

The Oracle Solaris kernel manages its data structures inside of a *cage*, which defines the limits of kernel memory. The cage is allowed to grow over time if needed. Ideally, the cage is distributed across all memory in the domain, so that the kernel does not exhaust the memory within any one locality group (*lgrp*). Distributing the cage across *lgrps* is desirable because user-level code running on processors within the *lgrp* performs better if local memory is available, rather than using remote memory in another *lgrp*.

Workaround: The tunable `mempm` parameter defines how the kernel manages cage growth and distribution. For most workloads, the `mempm` parameter can be left at its default value (0), which allows the power management code to affect cage allocation. However, for some workloads a more even distribution of kernel memory might be obtained using a non-power-aware, traditional cage allocation algorithm.

Set the `mempm` parameter if you observe unexpected poor performance or negative scaling at the application level on large domains with a high number of CPUs. Setting the `mempm` parameter to 1 disables the power management cage allocation algorithm, and the kernel reverts to its traditional cage allocation algorithm.

To set the `mempm` parameter:

1. Add the following to the `/etc/system` file:

```
set plat_disable_mempm=1
```

2. Reboot the server and observe memory usage (for example, using the `lgrpinfo` tool) to see whether memory is more balanced across *lgrps*.

Note - If this issue persists, contact your Oracle service provider for further assistance.

Link error on port 3 Warning (BugID 16038894)

When powering up the server with a USB device installed in the internal USB port socket, this warning message might be displayed:

WARNING: /pci@340/pci@1/pci@0/pci@2/usb@0: Link error on port 3, resetting.

Workaround: The warning message can be safely ignored. The device should be fully functional. If the device is not functional, contact Oracle Support for further assistance.

Drive OK to Remove LED Might Not Illuminate When a Drive is Unconfigured (BugID 16051551)

Note - This issue only applies to servers running the Oracle Solaris 10 1/13 OS.

If you use the `cfgadm(1M)` command to unconfigure a drive, the drive's blue Ok to Remove LED might not illuminate. This issue makes it difficult to confirm that the drive is ready to be removed and to identify the drive's physical location.

Workaround: Perform these steps to confirm that the drive is ready to be removed and to identify the drive's physical slot.

1. Use the `cfgadm` command to identify the drive's WWID that you plan to unconfigure. In this example, the fifth drive will be unconfigured. The fifth drive has a WWID of `w5000c50033278c09,0`.

```
# cfgadm -al |
grep disk
c7::w5000cca016065039,0      disk-path  connected  configured  unknown
c8::w5000cca0257b4999,0      disk-path  connected  configured  unknown
c9::w5000cca0257ca335,0      disk-path  connected  configured  unknown
c10::w5000cca03c252999,0     disk-path  connected  configured  unknown
c13::w5000c50033278c09,0     disk-path  connected  configured  unknown
```

2. Unconfigure the drive.

```
# cfgadm -c unconfigure c13::w5000c50033278c09,0
```

3. Verify that the drive is unconfigured.

```
# cfgadm -al | grep disk
c7::w5000cca016065039,0      disk-path  connected  configured  unknown
c8::w5000cca0257b4999,0      disk-path  connected  configured  unknown
c9::w5000cca0257ca335,0      disk-path  connected  configured  unknown
```

```

c10::w5000cca03c252999,0      disk-path  connected  configured  unknown
c13::w5000c50033278c09,0    disk-path  connected  unconfigured unknown <==

```

If the drive Ok to Remove LED does not illuminate perform the remaining steps.

- Send the output of the `prtconf -v` command to a file.

```
# prtconf -v > /tmp/prtconf.out
```

- Open the file with an editor and search for the WWID of the unconfigured drive (5000c50033278c09 in this procedure's example).
- In the output, confirm the drive location and that the drive is offline.

Look two lines above the WWID to identify the drive's location (HDD4 in this example)

Look at the line after the line with the WWID. The word `offline` indicates the drive is unconfigured.

```

disk, instance #13 (driver not attached)
  System software properties:
    name='ddi-devid-registrant' type=int items=1
    value=00000001
  Hardware properties:
    name='class' type=string items=1
    value='scsi'
    name='inquiry-revision-id' type=string items=1
    value='0B70'
    name='inquiry-product-id' type=string items=1
    value='ST930003SSUN300G'
    name='inquiry-vendor-id' type=string items=1
    value='SEAGATE'
    name='inquiry-device-type' type=int items=1
    value=00000000
    name='compatible' type=string items=4
    value='scsiclass,00.vSEAGATE.pST930003SSUN300G.r0B70' +
'scsiclass,00.vSEAGATE.pST930003SSUN300G' + 'scsiclass,00' + 'scsiclass'
    name='client-guid' type=string items=1
    value='5000c50033278c0b'
location: /dev/chassis/SPARC_T5-2.1144BD5ZZZ//SYS/SASBP/HDD4/disk <== Location
  Paths from multipath bus adapters:
    Path 5:
    /pci@3c0/pci@1/pci@0/pci@2/scsi@0/iport@1/disk@w5000c50033278c09,0
    mpt_sas#7 (offline) <==Driver offline means drive is unconfigured.
    name='wwn' type=string items=1
    value='5000c50033278c0b'

```

```
name='lun' type=int items=1
  value=00000000
name='lun64' type=int64 items=1
  value=0000000000000000
name='target-port' type=string items=1
  value='w5000c50033278c09'
name='attached-port' type=string items=1
  value='w508002000147f5b1'
name='attached-port-pm' type=string items=1
  value='1'
name='target-port-pm' type=string items=1
  value='1'
name='phy-num' type=int items=1
  value=00000000
name='obp-path' type=string items=1
  value=
'/pci@3c0/pci@1/pci@0/pci@2/scsi@0/disk@w5000c50033278c09,0'
```

FPGA iPOST power-on-reset, error-reset, and hw-change Triggers Do Not Work (BugID 16192025)

Note - This bug has been fixed in Oracle ILOM 3.2.1.

From within the Oracle ILOM software on the SP, the control of when FPGA iPOST (Oracle ILOM POST) is executed during the boot sequence of the SP is managed by the following properties:

- /SP/diag mode
- /SP/diag trigger

By default, these properties are defined so that the execution of FPGA iPOST is disabled. For example:

```
...
/SP/diag mode=off
/SP/diag trigger=all-resets
...
```

If you change /SP/diag mode to normal to enable iPOST, and if you change /SP/diag trigger from all-resets to any other value (power-on-reset, error-reset, or hw-change), then

iPOST will not be executed. In addition, the following message displays on the SER MGT port during the boot sequence to indicate that iPOST has not been executed.

```
...
Starting IPMI Stack: . Done
Starting BBR daemon...
bbrd started after 0 seconds.
Starting SP fishwrap cache daemon: fishwrapd . Done
FPGA iPOST skipped
Starting Host daemon: hostd . Done
Starting Network Controller Sideband Interface Daemon: ncsid . Done
Starting Physical Domain Manager: pdm . Done
Starting Platform Obfuscation Daemon: pod . Done
Starting vbsc daemon: vbsc . Done
...
```

Workaround A: To have iPOST execute when the SP boots, ensure that the trigger property is set to all-resets when it is enabled.

1. With the host not running, log in to the SP.
2. Set the /SP/diag trigger to all-resets.
 - a. At the Oracle ILOM CLI, type:


```
-> set /SP/diag trigger=all-resets
```
 - b. In the Oracle ILOM BUI, left click System Management, and then the Diagnostics entry in the lefthand pane. Then, select all three boxes under the labeled trigger in the righthand pane.
3. Reboot the SP.

The following output should display on the system console:

```
...
Starting IPMI Stack: . Done
Starting BBR daemon...
bbrd started after 0 seconds.
Starting SP fishwrap cache daemon: fishwrapd . Done
Running FPGA iPOST
Starting Host daemon: hostd . Done
Starting Network Controller Sideband Interface Daemon: ncsid . Done
Starting Physical Domain Manager: pdm . Done
Starting Platform Obfuscation Daemon: pod . Done
Starting vbsc daemon: vbsc . Done
```

...

Oracle ILOM Errors Might Occur When Multiple LDOM Configuration Files Exist Using the Same Name (BugID 16239544)

Note - This issue has been fixed in Oracle ILOM 3.2.1.

You can have multiple `ldmd` configuration files with various names. The names are case-sensitive (for example, `Alpha` and `alpha` are different names), so configuration files that use the same word are allowed. The Oracle ILOM UI names are case-insensitive, but they are case-preserving. Thus, multiple configuration file names such as `Alpha` and `alpha` might cause errors in the Oracle ILOM UI.

For example, if you type the following command, the UI hangs if there are multiple configuration files present that use the same filename:

```
-> show /HOSTx/domain/configs
```

Workaround: Remove one of the case-matching `ldmd` configuration files. Then, wait for the Oracle ILOM infrastructure to auto-restart the UI process.

CPU Power Management Can Lower Disk IOPS Performance (BugID 16355418, 17179054)

Note - This issue is fixed in Patch ID 16801195.

I/O intensive workloads that attempt to perform very large numbers of I/O operations in a short period of time might encounter poor I/O performance, even on an unloaded system. However, performing a smaller number of large I/O operations is not affected by this issue.

Workaround: Type the following command within the affected domain or domains:

```
# poweradm set administrative-authority=none
```

If this issue persists, contact your Oracle service provider for further assistance.

While SR-IOV Devices Are in Use, Attempts to Unbind or Remove Resource Hangs And Cannot Be Stopped by Using `ctrl-c` (BugID 16426940)

Note - This issue was fixed in SRU11.1.9.5.1.

On a SPARC T5 system that has an SR-IOV configuration, you might experience a hang that cannot be stopped with the `Ctrl-C` command. The hang rarely occurs when you use the `ldm unbind` or `ldm rm-io` command.

Workaround: Reboot the instance of the Oracle Solaris OS that runs on the primary domain. Also, reboot any guest domains that share I/O resources with the primary domain.

Oracle ILOM Sends V1 Authority, but Oracle Solaris Can Not Handle V1 Authority (BugID 16456603)

Note - This issue was fixed in Oracle Solaris 10 Update 11.

The SPARC T5 Series servers introduce the ability to display SP (Oracle ILOM) faults within the Oracle Solaris OS. However, several fields of information, such as the affected FRU, FRU location, and platform serial number, are not properly interpreted by the Oracle Solaris 10 OS. This issue does not affect the Oracle Solaris 11 OS.

As in previous platform releases, significant failures detected by the SP illuminate the chassis fault LED, indicating that the SP status should be investigated.

Workaround: If you encounter proxy faults that contain missing or incomplete information, gather the required information from the SP.

Management of SP Does Not Display a Table as Expected (BugID 16607793)

When you use the Oracle ILOM web interface to manage the SP, clicking System Log displays the system log in a table. Buttons at the bottom of the table allow you to page through the system log or display all the pages of the system log as a single page:



However, when you click any one of these buttons, the web interface displays the following error message:



Click on System Log to display the system log again.

Workaround 1: Set the number of displayed rows to a maximum of 999. This allows you to display up to 999 of the most recent system log entries in the web interface.

Note - It is not possible to display any entries older than this limit in the web interface. To view log entries older than 999, see Workaround 2, below.

1. Click this icon on the System Log page.



The Table Preferences pane opens.

2. Set the Rows Per Page value to 999.
3. Click OK.

The system log table is redisplayed to a maximum of 999 rows long.

Workaround 2: Display the system log with page breaks. This workaround allows you to view log entries older than the most recent 999.

1. At the Oracle ILOM CLI interface, display the system log.

```
-> show /System/Log/list/
Log
ID      Date/Time                Event Type                Subsystem
-----
211     Tue Apr 9 07:12:13 2013  Disk Removed             Storage
      Component:HDD2 (Disk 2)
      Disk Removed at location HDD2 (Disk 2)
210     Tue Apr 9 07:11:42 2013  Disk Removed             Storage
      Component:HDD1 (Disk 1)
      Disk Removed at location HDD1 (Disk 1)
.
.
.
Paused: press any key to continue, or 'q' to quit
```

Note - The width of the output and number of log entries displayed per page is dependent upon the geometry of the terminal window when the command is typed.

2. Press the space bar to display the next page of the system log, or press the Q key to stop the output.

In Some Instances During First-Time Boot, an Oracle Solaris OS Driver Attempts to Attach a Drive Controller Prematurely, Causing a Drive Attach Error (Bug ID 16608475)

In some instances, a drive controller might not be ready when the Oracle Solaris OS driver attempts to attach. If this issue affects the drive controller that services the boot drive, the following OBP messages display on the HOST console :

```
failed in wait-for-doorbell
send-message / issue-ioc-facts failed
issue-ioc-facts failed
```

```
Can't open adapter
ok>
```

If this issue affects the drive controller that does not service the boot drive, the following messages display on the HOST console and in the `/var/adm/messages` log:

```
Probing for device nodes ...
@ WARNING: /pci@3c0/pci@1/pci@0/pci@2/scsi@0 (mpt_sas1):
           mptsas_ioc_get_facts failed
@ WARNING: /pci@3c0/pci@1/pci@0/pci@2/scsi@0 (mpt_sas1):
           mptsas chip initialization failed
@ WARNING: /pci@3c0/pci@1/pci@0/pci@2/scsi@0 (mpt_sas1):
           attach failed
```

Workaround 1:

If the controller servicing the boot drive fails to attach, do the following:

1. Login to the SP and disable the auto-boot parameter:

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

2. Probe the drives in the system.

From the `ok>` prompt, type:

```
ok> probe-scsi-all
```

3. Verify that all of the drives are attached.
4. Boot the server.

Workaround 2:

If the system boots but the driver does not attach to the second disk controller, type:

```
# devfsadm -C
```

Verify that all of the drives are attached.

OPS Failing `fault.ops.chassis.voltage.fail` on FRU `/SYS/MB` at Component `/SYS/MB` (Bug ID 18070361)

If you have upgraded the system firmware to version 9.1.1, you might see error messages like the following in the SP log, especially after you power cycle the server.

```
2014-01-08/23:20:03 ereport.chassis.voltage-unc-ghi@SYS/MB
                    detector = /SYS/MB/V_+12V_3V3_STBY_0BPS
                    hidden = true
                    reading = 11.9141
                    threshold = 11.844
```

Additionally, if you use `fmdump -eV`, you might see an ereport titled `ereport.chassis.voltage-unc-ghi@SYS/MB` for detector `/SYS/MB/V_+12V_3V3_STBY_0BPS`.



Caution - Do not power cycle the server if you have removed the power supply in PS0 or if you have removed the power cord from PS0. The server will not boot under these conditions.

Workaround: You can safely ignore these messages and ereports. However, the messages are retained in the SP log.

Fix: Upgrade to system firmware version 9.1.2 or later. You can also reinstall system firmware version 9.1.0.f.

POST Abort When Retiring Multiple Memory Pages (Bug ID 18091447)

Note - This issue was fixed in firmware version 9.2.0.

After an AC power cycle, the server might crash during the normal POST process due to POST not being able to retire one or more DIMMs. This issue exists in POST since the release of system firmware version 9.0.0.i.

Workaround: Press and release the Power button on the front of the server to retry the power cycle. If the server continues to crash, contact your authorized Oracle Service Provider for assistance.

Fix: There is no fix for this issue.

RAID 10 Volumes Created Instead of RAID 1E on an Even Number of Target Disks (Bug ID 18335578)

RAID 10 is supported on SPARC T5-series servers with four or more disks. For an even number of target disks (four or more) RAID 10 is the functional equivalent of RAID 1E on an odd number of target disks (three or more).

With the FCode-based RAID utility, a RAID 10 volume is created when when you enter this `create-raid1e-volume` command that includes four target disks:

```
ok 9 a b c create-raid1e-volume
```

This is expected behavior.

Refer to the *SPARC and Netra SPARC T5 Series Servers Administration Guide* for more about creating RAID volumes.

Europa-Based 10 GbE PCIe Cards Generate Device Training Errors (Bug ID 18647589)

Europa-based 10 GbE PCIe cards exhibit inconsistent training behavior on startup, resulting in PCIe fabric errors and other stability issues. As a result, the following network adapters are no longer supported:

- Sun Storage 10 GbE PCIe FCoE Converged Network Adapter: Qlogic low profile, dual port and SR optics (ATO SG-PCIEFCOE2-Q-SR 7015322; X-option 7105381, 7053940)
- Sun Storage 10 GbE PCIe FCoE Converged Network Adapter: Qlogic low profile, dual port and Twin-AX (ATO SG-PCIEFCOE2-Q-TA 7054018; X-option 7105382)

Processor Module Fault Results in Single Point of Failure (Bug ID 19439215)

Note - This issue is fixed in system firmware 9.3.0.d.

In servers with system firmware earlier than 9.3.0.d installed, a processor module fault could result in a server shutdown or boot failure. As of system firmware 9.3.0.d, a server with a faulty processor module boots in a degraded mode, with the faulted processor module disabled.

Note the following:

- If a power fault occurs while the server is running, the server shuts down.
- If the fault is temporary and recoverable, the server can reboot normally.
- If the fault is persistent and unrecoverable, Oracle ILOM disables the faulty processor module. Upon reboot, the faulty processor is disabled and Service Required LED is illuminated on the faulty processor module.
- The Service Required LED remains illuminated until you clear the fault.



Caution - Do not power on the server with any vacant PM slots. All PM slots must be occupied to ensure proper system cooling. Do not remove a faulty PM from the server unless and until a replacement PM or filler is available.

Support for the InfiniBand Dual Port 4x QDR PCIe Low Profile Host Channel Adapter (Bug ID 19871511, 20077539)

Note the following configuration restrictions for the Dual Port 4x QDR PCIe low Profile Host Channel Adapter (part numbers 7104073, and 7104074).



Caution - If you install this card in an unsupported configuration, I/O behavior might be inconsistent and long-term system stability will be at risk.

In some cases, an unsupported configuration might lead to a system crash and/or a hang in OpenBoot with the following console message(s):

```
NOTICE: Entering OpenBoot.  
NOTICE: Fetching Guest MD from HV.  
NOTICE: Starting additional cpus.  
NOTICE: Initializing LDC services.  
NOTICE: Probing PCI devices.  
Unable to assign resources for VF unnamed
```

If you are using Oracle VM Server for SPARC, see the configuration rules for SR-IOV devices published in the [Oracle VM Server for SPARC Administration Guide](#).

Note - For more information about PCIe slot restrictions, see [“I/O Slot Restrictions” on page 18](#).

Single-PM configurations: Servers equipped with a single processor module can support up to two InfiniBand dual port 4x QDR low profile HCAs in a fixed configuration. Note the following restrictions:

- A maximum of two InfiniBand dual port 4x QDR low profile HCAs is supported.
- The InfiniBand dual port 4x QDR low profile HCAs adapters must be installed in PCIe slots 4 and 8 only.
- PCIe slots 5 and 9 must remain unpopulated.

Dual-PM configurations: Servers equipped with two processor modules can support up to four InfiniBand dual port 4x QDR low profile HCAs. Note the following configurations:

- A maximum of four InfiniBand dual port 4x QDR low profile HCAs is supported.
- Install in slots 3-14 only. Do not install in slots 1, 2, 15, or 16.

Server Cannot Be Shipped in a Rack

There are two rail kits for the SPARC T5-4 server. If you have installed the old rail kit (P.N. 350-1662-02) without the shipping braces, you cannot ship the server in a rack. If you have installed the new rail kit (P.N. 7069640) with the shipping braces, there is no restriction on shipping the server in a rack.

Processor Module Bezel Labels Are Incorrect

On some servers, the labels for the processor module are incorrect. The processor modules are cold-service components. You must shut down the processor module before you remove it from the server.

Documentation Issues

These topics describe the known issues with the product documentation.

- [“Processor Module Service Label Shows Incorrect DIMM Configurations” on page 45](#)
- [“Processor Module Service Label Shows Support for DIMM Filler Panels” on page 45](#)

Processor Module Service Label Shows Incorrect DIMM Configurations

The processor module service labels indicate that half-populations of DIMMs are supported. However, only fully populated processor modules are supported.

Processor Module Service Label Shows Support for DIMM Filler Panels

The processor module service labels indicate that filler panels for DIMMs are supported. As of this release, DIMM filler panels are not supported.

