

SPARC T8 Series Servers Product Notes

ORACLE®

Part No: E80502-03
April 2019

Part No: E80502-03

Copyright © 2017, 2019, Oracle and/or its affiliates. All rights reserved.

This software and related documentation are provided under a license agreement containing restrictions on use and disclosure and are protected by intellectual property laws. Except as expressly permitted in your license agreement or allowed by law, you may not use, copy, reproduce, translate, broadcast, modify, license, transmit, distribute, exhibit, perform, publish, or display any part, in any form, or by any means. Reverse engineering, disassembly, or decompilation of this software, unless required by law for interoperability, is prohibited.

The information contained herein is subject to change without notice and is not warranted to be error-free. If you find any errors, please report them to us in writing.

If this is software or related documentation that is delivered to the U.S. Government or anyone licensing it on behalf of the U.S. Government, then the following notice is applicable:

U.S. GOVERNMENT END USERS: Oracle programs, including any operating system, integrated software, any programs installed on the hardware, and/or documentation, delivered to U.S. Government end users are "commercial computer software" pursuant to the applicable Federal Acquisition Regulation and agency-specific supplemental regulations. As such, use, duplication, disclosure, modification, and adaptation of the programs, including any operating system, integrated software, any programs installed on the hardware, and/or documentation, shall be subject to license terms and license restrictions applicable to the programs. No other rights are granted to the U.S. Government.

This software or hardware is developed for general use in a variety of information management applications. It is not developed or intended for use in any inherently dangerous applications, including applications that may create a risk of personal injury. If you use this software or hardware in dangerous applications, then you shall be responsible to take all appropriate fail-safe, backup, redundancy, and other measures to ensure its safe use. Oracle Corporation and its affiliates disclaim any liability for any damages caused by use of this software or hardware in dangerous applications.

Oracle and Java are registered trademarks of Oracle and/or its affiliates. Other names may be trademarks of their respective owners.

Intel and Intel Xeon are trademarks or registered trademarks of Intel Corporation. All SPARC trademarks are used under license and are trademarks or registered trademarks of SPARC International, Inc. AMD, Opteron, the AMD logo, and the AMD Opteron logo are trademarks or registered trademarks of Advanced Micro Devices. UNIX is a registered trademark of The Open Group.

This software or hardware and documentation may provide access to or information about content, products, and services from third parties. Oracle Corporation and its affiliates are not responsible for and expressly disclaim all warranties of any kind with respect to third-party content, products, and services unless otherwise set forth in an applicable agreement between you and Oracle. Oracle Corporation and its affiliates will not be responsible for any loss, costs, or damages incurred due to your access to or use of third-party content, products, or services, except as set forth in an applicable agreement between you and Oracle.

Access to Oracle Support

Oracle customers that have purchased support 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.

Référence: E80502-03

Copyright © 2017, 2019, Oracle et/ou ses affiliés. Tous droits réservés.

Ce logiciel et la documentation qui l'accompagne sont protégés par les lois sur la propriété intellectuelle. Ils sont concédés sous licence et soumis à des restrictions d'utilisation et de divulgation. Sauf stipulation expresse de votre contrat de licence ou de la loi, vous ne pouvez pas copier, reproduire, traduire, diffuser, modifier, accorder de licence, transmettre, distribuer, exposer, exécuter, publier ou afficher le logiciel, même partiellement, sous quelque forme et par quelque procédé que ce soit. Par ailleurs, il est interdit de procéder à toute ingénierie inverse du logiciel, de le désassembler ou de le décompiler, excepté à des fins d'interopérabilité avec des logiciels tiers ou tel que prescrit par la loi.

Les informations fournies dans ce document sont susceptibles de modification sans préavis. Par ailleurs, Oracle Corporation ne garantit pas qu'elles soient exemptes d'erreurs et vous invite, le cas échéant, à lui en faire part par écrit.

Si ce logiciel, ou la documentation qui l'accompagne, est livré sous licence au Gouvernement des Etats-Unis, ou à quiconque qui aurait souscrit la licence de ce logiciel pour le compte du Gouvernement des Etats-Unis, la notice suivante s'applique :

U.S. GOVERNMENT END USERS: Oracle programs, including any operating system, integrated software, any programs installed on the hardware, and/or documentation, delivered to U.S. Government end users are "commercial computer software" pursuant to the applicable Federal Acquisition Regulation and agency-specific supplemental regulations. As such, use, duplication, disclosure, modification, and adaptation of the programs, including any operating system, integrated software, any programs installed on the hardware, and/or documentation, shall be subject to license terms and license restrictions applicable to the programs. No other rights are granted to the U.S. Government.

Ce logiciel ou matériel a été développé pour un usage général dans le cadre d'applications de gestion des informations. Ce logiciel ou matériel n'est pas conçu ni n'est destiné à être utilisé dans des applications à risque, notamment dans des applications pouvant causer un risque de dommages corporels. Si vous utilisez ce logiciel ou ce matériel dans le cadre d'applications dangereuses, il est de votre responsabilité de prendre toutes les mesures de secours, de sauvegarde, de redondance et autres mesures nécessaires à son utilisation dans des conditions optimales de sécurité. Oracle Corporation et ses affiliés déclinent toute responsabilité quant aux dommages causés par l'utilisation de ce logiciel ou matériel pour des applications dangereuses.

Oracle et Java sont des marques déposées d'Oracle Corporation et/ou de ses affiliés. Tout autre nom mentionné peut correspondre à des marques appartenant à d'autres propriétaires qu'Oracle.

Intel et Intel Xeon sont des marques ou des marques déposées d'Intel Corporation. Toutes les marques SPARC sont utilisées sous licence et sont des marques ou des marques déposées de SPARC International, Inc. AMD, Opteron, le logo AMD et le logo AMD Opteron sont des marques ou des marques déposées d'Advanced Micro Devices. UNIX est une marque déposée de The Open Group.

Ce logiciel ou matériel et la documentation qui l'accompagne peuvent fournir des informations ou des liens donnant accès à des contenus, des produits et des services émanant de tiers. Oracle Corporation et ses affiliés déclinent toute responsabilité ou garantie expresse quant aux contenus, produits ou services émanant de tiers, sauf mention contraire stipulée dans un contrat entre vous et Oracle. En aucun cas, Oracle Corporation et ses affiliés ne sauraient être tenus pour responsables des pertes subies, des coûts occasionnés ou des dommages causés par l'accès à des contenus, produits ou services tiers, ou à leur utilisation, sauf mention contraire stipulée dans un contrat entre vous et Oracle.

Accès aux services de support Oracle

Les clients Oracle qui ont souscrit un contrat de support ont accès au support électronique via My Oracle Support. Pour plus d'informations, visitez le site <http://www.oracle.com/pls/topic/lookup?ctx=acc&id=info> ou le site <http://www.oracle.com/pls/topic/lookup?ctx=acc&id=trs> si vous êtes malentendant.

Contents

Using This Documentation	7
Product Documentation Library	7
Feedback	7
Late-Breaking Information	9
Preinstalled Software	9
IMPORTANT - Install Latest OS Updates, Patches, and Firmware	10
Minimum Supported Versions of the Firmware, OS, and Software	11
Java Support for the Oracle Solaris OS	12
Mandatory Oracle Solaris 11 OS Package Updates	13
Mandatory Oracle Solaris 10 OS Patches	13
Oracle Solaris 10 1/13 Mandatory Patches	13
Oracle Solaris 10 8/11 Mandatory Patches	14
Oracle Solaris 10 9/10 Mandatory Patches	15
▼ Obtain Oracle Solaris 10 Patches	16
Updating the System Firmware	16
Required Firmware Updates for X-Options	17
Installing and Booting Oracle Solaris 11 From Devices Connected to a USB Port	17
Oracle VM Server for SPARC Guidelines	18
Oracle Solaris Fallback Miniroot Image Must Be Installed on a New SPM	18
Connecting a Terminal Device to the SER MGT Port	19
When You Create Logical Domains, Some Memory Is Reserved By the Server	19
Known Issues	20
Supported DIMMs	20
prtdiag -v is missing Environmental Status, FRU Status for some PDs (23619958)	20
L3DAC Storm Simulating Broken Way Results in Panic Hang (24973531)	21
Timeout waiting for Tx completion Message When Booting Over a Sun Dual 10GbE SFP+ PCIe Low Profile Adapter (25675633)	22

ILOM reset to factory default after AC cycle (25734596)	22
Hotplugged Intel PCIe Cards Not Seen By the fwupdate Command (25830688)	23
Oracle ILOM Java Remote Console Plus Storage Redirection Does Not Suspend Miniroot Redirection While Active (25911614)	24
Panic [cpu9]/thread=c040064486cc0: bad unexpected error from hypervisor call at T (26138639)	25
iSCSI Boot Panic vfs_mountroot: cannot mount root Due to Slow iSCSI Target (26178433)	25
XGBE not training at MAX advertised speed/width (26526760)	31
SP/config restore fails to restore some /HOST0/SP/powermgmt/budget properties (26573130)	33
Power cycle after fwupdate does not work on T8 (26613165)	34
IO domain ldgX is locked against modification at host restart (26191129)	34
CMP devices become immediately disabled after their parent CMU is disabled (26586749)	34
Get link information failure when pressing ATTN button, PCIE in UNK state later (26620735)	35
Panic: WAIT_MBOX_DONE() timeout running CPU/memory stress tests in a kernel zone (26628809)	35
3-node-ldom guest domain Cluster - Unable to acquire quorum device - Node panic (26732562)	36
Failed to write to Admin Rx Queue Regs on versaboot IO domain reboot stress (26768250)	36

Using This Documentation

- **Overview** – Contains late-breaking information for the SPARC T8 Series servers
- **Audience** – Technicians, system administrators, and authorized service providers
- **Required knowledge** – Advanced experience troubleshooting and replacing hardware

Product Documentation Library

Documentation and resources for this product and related products are available at <http://www.oracle.com/goto/t8/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:

- [“Preinstalled Software” on page 9](#)
- [“IMPORTANT - Install Latest OS Updates, Patches, and Firmware” on page 10](#)
- [“Minimum Supported Versions of the Firmware, OS, and Software” on page 11](#)
- [“Java Support for the Oracle Solaris OS” on page 12](#)
- [“Mandatory Oracle Solaris 11 OS Package Updates” on page 13](#)
- [“Mandatory Oracle Solaris 10 OS Patches” on page 13](#)
- [“Updating the System Firmware” on page 16](#)
- [“Required Firmware Updates for X-Options” on page 17](#)
- [“Installing and Booting Oracle Solaris 11 From Devices Connected to a USB Port” on page 17](#)
- [“Oracle VM Server for SPARC Guidelines” on page 18](#)
- [“Oracle Solaris Fallback Miniroot Image Must Be Installed on a New SPM” on page 18](#)
- [“Connecting a Terminal Device to the SER MGT Port” on page 19](#)
- [“When You Create Logical Domains, Some Memory Is Reserved By the Server” on page 19](#)
- [“Known Issues” on page 20](#)

Preinstalled Software

Software	Location	Description
Oracle Solaris 11.3 SRU 18 OS	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 13](#).

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 11](#).

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 SPARC T8 server firmware version is at a minimum 9.8 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.

See a list of firmware versions here: [Firmware Downloads and Release History for Oracle Systems](#).

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.

Minimum Supported Versions of the Firmware, OS, and Software

You are required to install the latest available and supported versions of the system firmware, OS, and patches, for optimal performance, security, and stability. See [“IMPORTANT - Install Latest OS Updates, Patches, and Firmware” on page 10.](#)

Oracle Solaris 11 is the recommended OS for the SPARC T8 series servers. Oracle Solaris 11 provides simplified installation and maintenance, enhanced virtualization capabilities, and performance improvements. A more detailed list of Oracle Solaris 11 advantages is available at <http://www.oracle.com/technetwork/server-storage/solaris11/overview/index.html>.

Note - 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, use Oracle Solaris 11.3 for the control domain, and Oracle Solaris 10 9/10 in a guest domain.

Software	Minimum Supported Versions
Sun System Firmware	9.8.1 or later.
Oracle Solaris 11	<p>Oracle Solaris 11.3 SRU 24 for the control domain and non-virtualized configurations.</p> <p>Oracle Solaris 11.3 SRU 24 is the minimum supported version when using Oracle Solaris 11 in a guest domain.</p> <p>Includes these software components:</p> <ul style="list-style-type: none"> ■ Oracle VM Server for SPARC ■ Oracle VTS <p>Also see “Mandatory Oracle Solaris 11 OS Package Updates” on page 13.</p>
Oracle Solaris 10 OS	Oracle Solaris 10U11, plus recommended patches
(In Guest Domains Only)	<p>For virtual guest domains only</p> <p>Includes Oracle VTS 7 PS15.</p> <p>Also see “Mandatory Oracle Solaris 10 OS Patches” on page 13.</p>
Java SE Development Kit	<p>JDK 7u85 b33 (included in Oracle Solaris 11.3 SRU1).</p> <p>JDK 8u131 b11 (included in Oracle Solaris 11.3 SRU1)</p> <p>Note - Previous versions of the Java software have been tested in virtual environments. For more information, see “Java Support for the Oracle Solaris OS” on page 12.</p>
Oracle Database Enterprise Edition	<p>12.2</p> <p>Required on Oracle Solaris 11.3 for in-memory features.</p>

Note - Some PCIe cards and devices have other minimum requirements. For details, including what is required for a device to be bootable, refer to the product notes and other documentation for that device.

Java Support for the Oracle Solaris OS

The following table lists the minimum required Java versions for servers running the Oracle Solaris OS.

Note - You must install the minimum supported version of the Oracle Solaris OS required for the platform as well as the specified Java software build. In order to use earlier versions of the Oracle Solaris OS, you must run them in virtual environments.

OS	Java 8	Java 7	Java 6	Java 5.0	Java 1.4
Oracle Solaris 11	JDK 8 Update 131 b11	JDK 7 Update 85 b33	JDK 6 Update 141 (1.6.0_141)	JDK 5.0 Update 85 (1.5.0_85)	JDK 1.4.2 Update 42 (1.4.2_42)
Oracle Solaris 10	JDK 8 Update 131 b11	JDK 7 Update 85 b33	JDK 6 Update 141 (1.6.0_141)	JDK 5.0 Update 85 (1.5.0_85)	JDK 1.4.2 Update 42 (1.4.2_42)
Oracle Solaris 9	Not supported	Not supported	JDK 6 Update 141 (1.6.0_141)	JDK 5.0 Update 85 (1.5.0_85)	JDK 1.4.2 Update 42 (1.4.2_42)
Oracle Solaris 8	Not supported	Not supported	JDK 6 Update 141 (1.6.0_141)	JDK 5.0 Update 85 (1.5.0_85)	JDK 1.4.2 Update 42 (1.4.2_42)

Note - Java versions 5.0 and 1.4 and Oracle Solaris OS versions 8 and 9 are past their end of service life (EOSL) dates. These versions are listed here for completeness and in no way constitute a change to Oracle's support policy or an extension to the EOSL dates.

Note - When running Java 8 and Java 7 in the Oracle Solaris 10 OS, you must use Oracle Solaris 10 Update 9 or a newer supported version.



Caution - These older versions of the JDK are provided to help developers debug issues in older systems. They are not updated with the latest security patches and are not recommended for use in production. For production use, Oracle recommends downloading the latest JDK and JRE versions and allow them to auto-update.

Mandatory Oracle Solaris 11 OS Package Updates

No package update is required at this time to use the preinstalled Oracle Solaris 11.3 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 11.3 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.

See one of these topics, depending on your platform:

- [“Installing the OS” in SPARC T8-1 Server Installation Guide](#)
- [“Installing the OS” in SPARC T8-2 Server Installation Guide](#)
- [“Installing the OS” in SPARC T8-4 Server Installation Guide](#)

Mandatory Oracle Solaris 10 OS Patches

If you choose to install the Oracle Solaris 10 OS in a guest domain, you must also install additional patches and in some cases, a patch bundle.

Oracle Solaris 10 1/13 Mandatory Patches

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

Installation Order	OS and Patches
1	Oracle Solaris 10 1/13.
2	These mandatory patches: <ul style="list-style-type: none"> ■ All patches up to October 2015.

Installation Order	OS and Patches
	<p data-bbox="930 369 1089 394">■ KU150400-29.</p> <p data-bbox="930 417 1414 596">To install Oracle Solaris 10, you must patch the miniroot of the installation media with KU150400-29, or higher. You can use the Oracle Solaris 10 JumpStart technology and finish scripts to patch the installed image. Refer to MOS article 1501320.1 for instructions on how to patch a packed miniroot at My Oracle Support (https://myoraclesupport.com).</p> <p data-bbox="930 619 1406 741">If you are unfamiliar with the Oracle Solaris 10 JumpStart technology, contact your support representative or Oracle Support for documentation that describes how to configure an Oracle Solaris 11 zone as an Oracle Solaris 10 1/13 JumpStart server.</p>

Oracle Solaris 10 8/11 Mandatory Patches

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

Installation Order	OS and Patches
1	<p data-bbox="930 1024 1125 1050">Oracle Solaris 10 8/11.</p> <p data-bbox="930 1052 1414 1199">Note - Until the Oracle Solaris 10 1/13 SPARC Bundle has been installed, Oracle Solaris 10 8/11 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 has been installed, or install a later version of Oracle Solaris.</p>
2	<p data-bbox="930 1213 1263 1239">Oracle Solaris 10 1/13 SPARC Bundle.</p> <p data-bbox="930 1262 1406 1335">This bundle causes the OS to operate as the Oracle Solaris 10 1/13 OS, but the version number in the /etc/release file remains as Oracle Solaris 10 8/11.</p>
3	<p data-bbox="930 1352 1149 1377">These mandatory patches:</p> <ul data-bbox="930 1400 1230 1451" style="list-style-type: none"> ■ All patches up to October 2015. ■ KU150400-29. <p data-bbox="930 1474 1414 1652">To install Oracle Solaris 10, you must patch the miniroot of the installation media with KU150400-29, or higher. You can use the Oracle Solaris 10 JumpStart technology and finish scripts to patch the installed image. Refer to MOS article 1501320.1 for instructions on how to patch a packed miniroot at My Oracle Support (https://myoraclesupport.com).</p> <p data-bbox="930 1675 1325 1724">If you are unfamiliar with the Oracle Solaris 10 JumpStart technology, contact your support</p>

Installation Order	OS and Patches
	representative or Oracle Support for documentation that describes how to configure an Oracle Solaris 11 zone as an Oracle Solaris 10 1/13 JumpStart server.

Note - Until the Oracle Solaris 10 1/13 SPARC Bundle is installed, you might encounter these bugs—15712380, 15704520, 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 version of the OS is supported only in guest domains.

Installation Order	OS, Patches, and Packages
1	Oracle Solaris 10 9/10 Note - Until the Oracle Solaris 10 1/13 SPARC Bundle has been installed, Oracle Solaris 10 9/10 only supports 512 CPUs and 1023 GBytes of memory. For servers exceeding those resources, reduce the resources until the Oracle Solaris 10 1/13 SPARC Bundle has been installed, or install a later version of Oracle Solaris.
2	Oracle Solaris 10 1/13 SPARC Bundle. This bundle causes the OS to operate as the Oracle Solaris 10 1/13 OS, but the version number in the <code>/etc/release</code> file remains as Oracle Solaris 10 9/10.
3	These mandatory patches: <ul style="list-style-type: none"> ■ All patches up to October 2015. ■ KU150400-29. <p>To install Oracle Solaris 10, you must patch the miniroot of the installation media with KU150400-29, or higher. You can use the Oracle Solaris 10 JumpStart technology and finish scripts to patch the installed image. Refer to MOS article 1501320.1 for instructions on how to patch a packed miniroot at My Oracle Support (https://myoraclesupport.com).</p> <p>If you are unfamiliar with the Oracle Solaris 10 JumpStart technology, contact your support representative or Oracle Support for documentation that describes how to configure an Oracle Solaris 11 zone as an Oracle Solaris 10 1/13 JumpStart server.</p>
4	Use the <code>pkgadd</code> command to install the <code>SUNWust1</code> and <code>SUNWust2</code> packages.

Note - Until the Oracle Solaris 10 1/13 SPARC Bundle is installed, you might encounter these bugs—15712380, 15704520, 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 Oracle Solaris 10 Patches

1. Sign in to My Oracle Support:

<https://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. After you locate the patch, access the README and download the patch from the site.

The patch README provides the patch installation instructions.

Updating the System Firmware

To update SP firmware from the HOST, Oracle is standardizing on the fwupdate utility. This utility is included in Oracle Solaris as part of the Oracle Hardware Management Pack (OHMP).

Note - The sysfwdownload utility does not ship with SP firmware releases, and that utility is not supported on SPARC T8 servers.

For more information on using the fwupdate utility that is included in Oracle Solaris 11.3, refer to *Using fwupdate to Update Firmware* (http://docs.oracle.com/cd/E64576_01/html/E64582/gyuui.html#scrolltoc) in the *Oracle Server CLI Tools for Oracle Solaris 11.3 User Guide*.

When you follow the steps in that procedure, and have obtained a desired firmware package, use this command to update the SP from the HOST:

```
fwupdate update all -x powercycle_metadata.xml
```


firmware-package-file.pkg is the path to the firmware package for your server's SP.

Note - On SPARC T8 servers running Oracle Solaris 11.3 SRU 23 and SRU 24, the host cannot automatically power cycle as required by some firmware updates. This issue occurs even if there is a power cycle command in the firmware metadata file. If a power cycle is required for a firmware update, you must manually power cycle the host to complete the update. For more information, refer to 26613165 in "fwupdate Known Issues" in the Oracle Hardware Management Pack for Oracle Solaris 11.3 Release Notes at: http://docs.oracle.com/cd/E64576_01/index.html

Required Firmware Updates for X-Options

If you install the Oracle Flash Accelerator F160 PCIe Card or the Oracle 1.6TB NVMe SSD as an x-option, you must update the firmware to RA13, or a subsequent release if available. Servers ordered with this option installed already have the updated firmware.

For firmware upgrade instructions, refer to the NVMe card and SSD documentation at: <http://www.oracle.com/goto/oracleflashf160/docs>.

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

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

You can install Oracle Solaris 11.3 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>.

You also can create a persistent device alias for a device connected to a USB port. The simpler alias name remains available for future installation or boot operations.

For more information about installing Oracle Solaris and creating persistent device aliases, refer to *Installing Oracle Solaris 11.3 Systems* at:

http://docs.oracle.com/cd/E53394_01.

You can boot Oracle Solaris 11.3 from drives installed in the server (hard drive or SSD) or from devices connected to a USB port.

For the path to identify a USB port in a boot command, refer to the list of devices output by the `show-dev OpenBoot` command.

Oracle VM Server for SPARC Guidelines

If you plan to configure Oracle VM Server for SPARC on this server, follow these guidelines:

- Do not configure the Oracle Solaris 10 OS in the control domain, root domains, I/O domains, or service domains.
- If you configure Oracle Solaris 10 OS in guest domains, you must disable Verified Boot for each Oracle Solaris 10 guest domain by running the following commands in the control domain, then reboot the guest domain:

```
# ldm ls -l <domain> | grep boot-policy
boot-policy=warning
# ldm set-domain boot-policy=none <domain>
The domain must be rebooted to make the boot-policy change effective.
# ldm ls -l <domain> | grep boot-policy
boot-policy=none
```

- Be aware that instances of Oracle Solaris 10 with required patches and packages in a single guest domain are limited to 1024 virtual CPUs and 4 Tbytes of memory.

The majority of a physical domain's memory can be assigned to logical domains. However, a small portion of the PDomain's memory is preassigned to software components, the hypervisor, and certain I/O devices. To determine which portions of the memory are unavailable for logical domains, log in to the PDomain and type this command:

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

In the command output, look for the rows that include `_sys_` in the BOUND column. These portions of memory are not available for logical domains.

For more information about Oracle VM Server for SPARC, refer to the [Oracle VM Server for SPARC documentation](#).

Oracle Solaris Fallback Miniroot Image Must Be Installed on a New SPM

When you replace the SPM in your server, you must install a fallback miniroot image that corresponds to the version of Oracle Solaris that you are using. The miniroot image is not part

of the OS or firmware image that you install. Also, you must update the miniroot image when you install a new version of Oracle Solaris on the server, so the fallback image matches that version and SRU of Oracle Solaris.

You must download the fallback miniroot image for your hardware and your Oracle Solaris version from My Oracle Support at <https://support.oracle.com>. Then follow the procedure "Uploading a New Solaris Miniroot Package From SP to Host" in the *Oracle ILOM Administrator's Guide for Configuration and Maintenance*.

You will see the `defect.ilom.fs.miniroot-missing` error if you fail to install a fallback miniroot image. For example:

```
-> show faulty
```

Target	Property	Value
/SP/faultmgmt/0	fru	/SYS
/SP/faultmgmt/0/faults/0	class	defect.ilom.fs.miniroot-missing

Connecting a Terminal Device to the SER MGT Port

Crossover adapters are no longer provided in the shipping kit for this server. To connect the server's SER MGT port to a terminal device, use an RJ-45 cable that is set up for a null modem configuration, in which the transmit and receive signals cross over.

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 T8 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. Also, if DIMM sparing is active, a portion of memory is reserved to enable the server to operate normally after a DIMM has failed.

To determine which portions of memory are unavailable for logical domains, type:

```
# 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.

Known Issues

These issues are known to exist for the SPARC T8 servers:

- “Supported DIMMs” on page 20
- “prtdiag -v is missing Environmental Status, FRU Status for some PDs (23619958)” on page 20
- “L3DAC Storm Simulating Broken Way Results in Panic Hang (24973531)” on page 21
- “Timeout waiting for Tx completion Message When Booting Over a Sun Dual 10GbE SFP+ PCIe Low Profile Adapter (25675633)” on page 22
- “ILOM reset to factory default after AC cycle (25734596)” on page 22
- “Hotplugged Intel PCIe Cards Not Seen By the fwupdate Command (25830688)” on page 23
- “Oracle ILOM Java Remote Console Plus Storage Redirection Does Not Suspend Miniroot Redirection While Active (25911614)” on page 24
- “Panic [cpu9]/thread=c040064486cc0: bad unexpected error from hypervisor call at T (26138639)” on page 25
- “iSCSI Boot Panic vfs_mountroot: cannot mount root Due to Slow iSCSI Target (26178433)” on page 25
- “XGBE not training at MAX advertised speed/width (26526760)” on page 31
- “SP/config restore fails to restore some /HOST0/SP/powermgmt/budget properties (26573130)” on page 33
- “Power cycle after fwupdate does not work on T8 (26613165)” on page 34

Supported DIMMs

The *SPARC T8 Series Server Service Manuals* provide incorrect references to the DIMMs supported for use in the T-8 series servers. At this time, T-8 series servers support only dual-rank 32 GB DIMMs.

prtdiag -v is missing Environmental Status, FRU Status for some PDs (23619958)

On boot occasionally picl fails to establish communications with the SP and it does not recover automatically. In that case, prtdiag -v fails to show the status of the various current, voltage, and temperature environmental sensors. These sensors are still being monitored,

and any failures are appropriately handled by the system firmware and reported by the Fault Management Architecture (FMA).

Workaround

Avoid using `prtpicl` and `prtdiag`. Instead get sensor info from FMA `fmtopo` or use `smbios` and Oracle ILOM commands to obtain sensor data. The following example shows the Oracle ILOM command to obtain the environmental sensor data from `/SYS/MB`:

```
-> show -t /SYS/MB value
Target                | Property | Value
-----+-----+-----
/SYS/MB/0V9_SAS0_OBPS/T_INT | value   | 30.781 degree C
/SYS/MB/0V9_SAS0_OBPS/V_OUT | value   | 0.977 Volts
/SYS/MB/0V9_SAS1_OBPS/T_INT | value   | 29.594 degree C
/SYS/MB/0V9_SAS1_OBPS/V_OUT | value   | 0.976 Volts
/SYS/MB/0V83_CV_OBPS/T_INT  | value   | 25.719 degree C
/SYS/MB/0V83_CV_OBPS/V_OUT  | value   | 0.832 Volts
/SYS/MB/0V85_FV_OBPS/T_INT  | value   | 25.594 degree C
/SYS/MB/0V85_FV_OBPS/V_OUT  | value   | 0.851 Volts
/SYS/MB/1V05_IOH0_OBPS/T_INT | value   | 41.188 degree C
/SYS/MB/1V05_IOH0_OBPS/V_OUT | value   | 1.050 Volts
/SYS/MB/1V05_IOH1_OBPS/T_INT | value   | 36.750 degree C
/SYS/MB/1V05_IOH1_OBPS/V_OUT | value   | 1.051 Volts
/SYS/MB/3V3_MAIN_OBPS/T_INT  | value   | 38.625 degree C
/SYS/MB/3V3_MAIN_OBPS/V_OUT  | value   | 3.417 Volts
/SYS/MB/3V3_PCIE_OBPS/T_INT  | value   | 43.750 degree C
/SYS/MB/3V3_PCIE_OBPS/V_OUT  | value   | 3.316 Volts
...
```

Recovery

Restart the `picl` service. Type:

```
svcadm restart picl
```

L3DAC Storm Simulating Broken Way Results in Panic Hang (24973531)

On very rare occasions a fault may develop within the cache within the processor, which may result in a system panic and a failure of the system to automatically recover.

If you see this problem, reset the system from the Oracle ILOM console.

```
-> reset /System
```

Timeout waiting for Tx completion Message When Booting Over a Sun Dual 10GbE SFP+ PCIe Low Profile Adapter (25675633)

During some system reboots, the OS is loaded from the storage device to the host memory. If the device on which the OS image resides is remote and needs to be accessed through network connections using a Niantic NIC HBA, you might see the following error message:

```
Timeout waiting for Tx completion
10G full duplex link up.
Link down, restarting network initialization
10G full duplex link up.
Timeout waiting for Tx completion
10G full duplex link up
```

In this case, the OS will not be available.

Recovery

If you see the preceding messages, issue a "send break" as describe in ILOM documentation at: [Oracle ILOM User's Guide for System Monitoring and Diagnostics Firmware Release 3.2.x](#).

The host console should drop to the OBP prompt, and at the OBP prompt, you can issue the "reset-all" command.

Workaround

This issue occurs intermittently, and the root cause is still under investigation. If you encounter this it, contact your authorized Oracle Service provider to see if a fix is available.

ILOM reset to factory default after AC cycle (25734596)

When AC cycling a SPARC T8 system, it is possible that the Service Processor configuration will be reset to factory defaults. If this occurs, the Service Processor date and time will be set to Jan 1 00:00:00 1970, and you will see the following output from the Service Processor serial port while the Service Processor is booting after the AC power cycle:

```
NAND ECC Stats   :
corrected       : 0^M
failed          : 0^M
badblocks       : 0^M
bbtblocks       : 0^M
```

```

/usr/local/bin/pre_conf_check: line 38: & 0x40: syntax error: operand expected (error
token is "& 0x40")^M
/etc/init.d/ubifs: crw-r--r-- 10, 60 /var/ddev/ubi_ctrl          ^M
/etc/init.d/ubifs: crw-r--r-- 253,  0 /var/ddev/ubi0           ^M
  params:          (20.2 MB) exists mounted^M
  persist:         (106.3 MB) exists mounted^M
  coredump:        (70.4 MB) exists mounted^M
  large:           (64.5 MB) exists mounted^M
  extra:           (36.4 MB) exists mounted^M
  package:         (230.3 MB) exists mounted^M
  miniroot:        (468.1 MB) exists mounted^M
Available freespace: 0 MB^M
^M
Checking configuration files state ... ^M
/etc/rcS.d/S07z_S10restore_defaults: line 271:  803 Segmentation fault    /usr/local/
bin/passwd_check^M
***Sanity check of user configuration files has failed***^M
/etc/rcS.d/S07z_S10restore_defaults: line 275:  805 Segmentation fault    /usr/local/
bin/config_process cleanup^M
... not preserving config^M

...

Setting the system clock.^M
/etc/rcS.d/S08hwclock.sh: line 77:  964 Segmentation fault    /sbin/hwclock --rtc=/
dev/$HCTOSYS_DEVICE --hctosys $GMT $HWCLOCKPARS $BADYEAR $NOADJ^M
Unable to set System Clock to: Thu Jan 1 00:00:51 UTC 1970 ... (warning).^M

...

ORACLESP-<SP hostname> login:

```

Workaround

There is no workaround for this issue. However, follow best practices and perform accurate backups of the Oracle ILOM configuration and your LDOMs configuration before AC power cycling the system. This will ease recovery if this situation occurs.

Recovery

Restore the Oracle ILOM configuration and LDOMs configuration from backups. To restore your Oracle ILOM Configuration, see: [Backing Up, Restoring, or Resetting the Oracle ILOM Configuration](#). To restore your LDOMs configuration, see: [Restoring Domain Configurations](#).

Hotplugged Intel PCIe Cards Not Seen By the fwupdate Command (25830688)

After hotplugging an Intel-manufactured PCIe card into the server using the hotswap command, the fwupdate command cannot show detailed information about the card. After using the hotswap command, the fwupdate command can no longer access the PCI mappings on the device. An Intel-supplied utility fails to gather information about the hotplugged card, so it cannot pass this information to the fwupdate command.

The supported Intel-manufactured PCIe cards are as follows:

- Sun Quad Port GbE PCIe 2.0 Low Profile Adapter, UTP
- Oracle Quad Port 10GBase-T Adapter
- Oracle Quad 10Gb or Dual 40Gb Ethernet Adapter
- Oracle Flash Accelerator F640 PCIe Card: 6.4 TB, NVMe PCIe 3.0

Recovery

Reboot the server containing the Intel-manufactured PCIe card.

Oracle ILOM Java Remote Console Plus Storage Redirection Does Not Suspend Miniroot Redirection While Active (25911614)

This issue affects all three servers.

When the Oracle Solaris miniroot is enabled, starting the Oracle ILOM Remote System Console Plus storage redirection will fail with the following console error message:

```
Command failed to complete...Device is gone.
```

After the storage redirection fails, the Oracle Solaris OS miniroot will eventually reconnect to the server.

Recovery

Disable the miniroot redirection prior to starting the Oracle ILOM Remote System Console Plus storage redirection. When remote storage redirection is no longer required and the remote storage redirection has been disconnected, reactivate the miniroot redirection.

1. Disable miniroot redirection.

```
-> set /SP/services/kvms/host_storage_device mode=disabled
```


2. Start the Oracle ILOM Remote System Console Plus storage redirection.

For instructions on starting the Oracle ILOM Remote System Console Plus storage redirection, refer to the [Oracle ILOM Administrator's Guide for Configuration and Maintenance Firmware Release 4.0.x](#).

3. Reactivate the miniroot redirection.

```
-> set /SP/services/kvms/host_storage_device mode=miniroot
```

Panic [cpu9]/thread=c040064486cc0: bad unexpected error from hypervisor call at T (26138639)

If you have an Oracle Quad 10Gb or Dual 40Gb Ethernet Adapter or an Oracle Quad Port 10GBase-T Adapter PCIe card installed in SPARC M8 or T8 system, with a VF assigned to the root domain, shutting down the root domain using the `-f` option, and then shutting down the IO domain with the `-f` option causes a panic of the IO domain.

Workaround

Avoid using the `-f` option with the `ldm stop` command in these circumstances.

Recovery

Reboot the IO domain.

iSCSI Boot Panic vfs_mountroot: cannot mount root Due to Slow iSCSI Target (26178433)

This issue affects all three servers.

The operating system might panic in function `vfs_mountroot` if the server is configured to boot from an iSCSI logical unit (LUN) over an Ethernet or InfiniBand network.

Note - SPARC M8-8 servers running Oracle Solaris 11.3 SRU 24, and SPARC M7 servers running Oracle Solaris 11.3 SRU19 through SRU 24, might experience this `vfs_mountroot` panic.

If the `vfs_mountroot` panic occurs, the system console will display output similar to the following:

```
{0} ok boot net
Boot device: /pci@300/pci@1/network@0 File and args:
1000 Mbps full duplex Link up
1000 Mbps full duplex Link up
1000 Mbps full duplex Link up
SunOS Release 5.11 Version 11.3 64-bit
Copyright (c) 1983, 2016, Oracle and/or its affiliates. All rights reserved.
NOTICE: Configuring iSCSI boot session...
NOTICE: iscsi connection(5) unable to connect to target
        iqn.1986-03.com.sun:02:118cb23b-920f-49ef-b7a1-b00767a60dfa, target address 192.168.1.1
NOTICE: iscsi connection(5) unable to connect to target
        iqn.1986-03.com.sun:02:118cb23b-920f-49ef-b7a1-b00767a60dfa, target address 192.168.1.1
WARNING: Failed to configure iSCSI boot session
WARNING: Failed to get iscsi boot path

panic[cpu0]/thread=20012000: vfs_mountroot: cannot mount root
```

This `vfs_mountroot` panic will most often be seen during the boot process. However, a similar issue might occur if the system has already booted from an iSCSI logical unit and the iSCSI logical unit becomes temporary unavailable. For example, the iSCSI logical unit could become unavailable as a result of a temporary network congestion or a network failover.

Workarounds

This `vfs_mountroot` panic issue is usually caused by a slow iSCSI target device or a slow network connection. However, Solaris 11.3 SRU 24 is more vulnerable to this issue due to timing differences in its iSCSI initiator kernel module. If the iSCSI target device or the network is slow, attempt one of the following workarounds to boot the server.

Determine the correct workaround for your server configuration:

- If your server contains only one boot environment, go to [“Apply Workaround to an Installed Boot Environment” on page 26](#).
- If you freshly installed the Solaris OS on the server, go to [“Apply Workaround to a Fresh Oracle Solaris OS Installation” on page 28](#).
- If your SPARC M7 server contains boot environments for Solaris 11.3 prior to SRU 19.5, go to "Select a Boot Environment Earlier than Oracle Solaris 11.3 SRU19.5."

Apply Workaround to an Installed Boot Environment

The minimum supported Oracle Solaris OS 11.3 supported on SPARC T8 and SPARC M8 servers is Oracle Solaris 11.3 SRU 24. These servers will not contain boot environments for


```

NAME    SIZE  ALLOC  FREE  CAP  DEDUP  HEALTH  ALROOT
rpool  59.5G  48.9G  10.6G  82%  1.00x  ONLINE  /a

```

7. Display the boot environments on the imported rpool.

```

# beadm list
be_find_current_be: failed to find current BE name
be_find_current_be: failed to find current BE name
BE          Flags Mountpoint Space  Policy Created
--          -
S11.3-SRU18.6 -    -          32.82M static 2027-07-03 13:57
S11.3-SRU22.3 R    -          6.42G  static 2027-07-03 14:03
solaris     -    -          99.75M static 2027-07-03 13:40

```

8. Create temporary mount point and mount the selected boot environment.

```

# mkdir /a/mnt
# zfs mount -o mountpoint=/a/mnt/ rpool/ROOT/S11.3-SRU22.3

```

9. Apply the workaround.

```

# echo "set iscsi:iscsi_conn_first_login_max=20" >> /a/mnt/etc/system
# echo "set iscsi:iscsi_conn_first_interval_max=10" >> /a/mnt/etc/system

```

10. Update boot archive in the mounted boot environment to activate the workaround during next reboot.

```

# bootadm update-archive -v -R /a/mnt

```

11. Reboot the system and boot from iSCSI boot device.

```

# shutdown -y -i0 -g0
{0} ok boot net

```

Apply Workaround to a Fresh Oracle Solaris OS Installation

Follow these steps to apply the workaround to a freshly installed boot environment.

1. Repeat the installation, but exit the installation program shortly before the system reboots.

```

Installation Complete

```

The installation of Oracle Solaris has completed successfully.

Reboot to start the newly installed software or Quit if you wish to perform additional tasks before rebooting.

The installation log is available at /system/volatile/install_log. After reboot it can be found at /var/log/install/install_log.

```
Esc-4_View Log Esc-7_Halt Esc-8_Reboot Esc-9_Quit
```

2. Press the Esc-9 key sequence to exit the installation program and then press 3 to enter the shell.

```
Welcome to the Oracle Solaris installation menu
```

- ```
 1 Install Oracle Solaris
 2 Install Additional Drivers
 3 Shell
 4 Terminal type (currently xterm)
 5 Reboot
```

```
Please enter a number [1]:3
```

3. Display the boot environments.

```
beadm list
be_find_current_be: failed to find current BE name
be_find_current_be: failed to find current BE name
BE Flags Mountpoint Space Policy Created
-- -
solaris R - 2.29G static 2027-07-04 14:46
```

4. Mount the newly installed boot environment.

```
beadm mount solaris /a
```

5. Apply the workaround.

```
echo "set iscsi:iscsi_conn_first_login_max=20" >> /a/etc/system
echo "set iscsi:iscsi_conn_first_interval_max=10" >> /a/etc/system
```

6. Update boot archive in the mounted boot environment to activate the workaround during next reboot.

```
bootadm update-archive -v -R /a
```

7. Apply the workaround.

```
echo "set iscsi:iscsi_conn_first_login_max=20" >> /etc/system
echo "set iscsi:iscsi_conn_first_interval_max=10" >> /etc/system
```

8. Unmount the boot environment and reboot the system.

```
beadm umount solaris
reboot
```

## Select a Boot Environment Earlier than Oracle Solaris 11.3 SRU 19.5

SPARC T8 and SPARC M8-8 servers will never contain boot environments for Oracle Solaris 11.3 versions earlier than SRU 24. If you have a SPARC M7 server that contains earlier boot environments, follow these steps to boot a boot environment earlier than Oracle Solaris 11.3 SRU 19.5 in order to apply the workaround to the Oracle Solaris OS boot environment affected by this `vfs_mountroot` panic issue.

1. Select boot environment older than S11.3 SRU 19.5.

```
{0} ok boot net -L
Boot device: /pci@300/pci@1/network@0 File and args: -L
1000 Mbps full duplex Link up
1000 Mbps full duplex Link up
1000 Mbps full duplex Link up
1 Oracle Solaris 11.3 SPARC
2 S11.3-SRU18.6
3 S11.3-SRU22.3
Select environment to boot: [1 - 3]: 2
```

```
To boot the selected entry, invoke:
boot [<root-device>] -Z rpool/ROOT/S11.3-SRU18.6
```

```
Program terminated
```

2. Select and boot to a boot environment earlier than Oracle Solaris 11.3 SRU 19.5.

```
{0} ok boot net -Z rpool/ROOT/S11.3-SRU18.6
```

3. List the existing boot environments.

```
beadm list
BE Flags Mountpoint Space Policy Created
-- -
S11.3-SRU18.6 N / 33.32M static 2027-07-03 15:57
S11.3-SRU22.3 R - 6.40G static 2027-07-03 16:03
solaris - - 99.75M static 2027-07-03 15:40
```

4. Mount the boot environment which exhibits the panic.

```
beadm mount S11.3-SRU22.3 /mnt
```

5. Apply the workaround.

```
echo "set iscsi:iscsi_conn_first_login_max=20" >> /mnt/etc/system
echo "set iscsi:iscsi_conn_first_interval_max=10" >> /mnt/etc/system
```

- Update boot archive in the mounted boot environment to activate the workaround during next reboot.

```
bootadm update-archive -v -R /mnt
```

- Unmount the boot environment.

```
beadm umount S11.3-SRU22.3
```

- Reboot the server to the new boot environment.

## XGBE not training at MAX advertised speed/width (26526760)

In rare circumstances, when power is first applied to the system the PCI-Express (PCIE) link leading to the onboard ethernet device may train at less than its optimal speed. This will not result in any loss of connectivity or service, but may result in a loss of network bandwidth or throughput. This problem only occurs when AC power is applied to the chassis. If the links show the correct speed, they will remain at the correct speed as long as AC power is applied.

### Identifying the Error Condition

To troubleshoot this problem, you must determine whether your onboard network has trained to less than its full capability, and must then retrain any links that are trained to less than their full potential. Use either of the following methods to identify whether this error condition exists on your system; both methods can be run from within Solaris in the control domain.

#### Option 1: FMA Fault Log

If, and only if, you have run the Power On Self Test (POST) during boot, there will be faults registered in the FMA log for degraded links.

- Display a list of diagnosed faults.

```
fmadm faulty
```

```

TIME EVENT-ID MSG-ID
SEVERITY

Sep 14 06:21:49 33055e24-2f39-679e-9482-ec1c5f83b69b SPSUN4V-8001-0J Major Problem
Status:open
Diag Engine : fdd / 1.0
System Manufacturer : Oracle Corporation
Name : SPARC T8-1
Part_Number : 32884356+1+1
```

```

Serial_Number : AK00271486
Host_ID : 86bbdd30

Suspect 1 of 1 : Problem class : fault.io.pciex.bus-linkerr-deg
Certainty : 100%
Affects : location:///SYS/MB/NET2
Status : faulted but still in service
FRU Status : faulty
Location : "/SYS/MB"
...
Resource Location : "/SYS/MB/NET2"

```

2. Look for any faults with the "Problem class" set to "fault.io.pciex.bus-linkerr-deg" in any of these locations. The previous example shows this fault in /SYS/MB/NET2.
  - /SYS/MB/NET0
  - /SYS/MB/NET1
  - /SYS/MB/NET2
  - /SYS/MB/NET3
  - /SYS/MB/IOH/IOS2/RP0/PCIE\_LINK

If you see fault.io.pciex.bus-linkerr-deg in any of these locations, the onboard network's PCI-E link did not train to its full potential.

3. Record the value listed under the EVENT-ID for each fault.io.pciex.bus-linkerr-deg fault. You will use these EVENT-IDs later to clear the faults.

In the previous example, this value is 33055e24-2f39-679e-9482-ec1c5f83b69b.

### Option 2: prtdiag(1M) command

You can use the prtdiag(1M) command from Solaris when logged into the primary domain whether or not POST had been enabled.

1. In the Solaris control domain, display the PCI-E width and speed for the onboard ethernet device. In this case, the network ports for the onboard ethernet device are named /SYS/MB/XGBE, /SYS/MB/NET1, /SYS/MB/NET2, and /SYS/MB/NET3.
2. # **prtdiag**

```

System Configuration: Oracle Corporation sun4v SPARC T8-1 Memory size: 243200 Slot
...
Cur Speed/Width...
/SYS/MB/XGBE PCIE network-pciex8086,1589 8.0GT/x8 8.0GT/x8 /pci@300/pci@1/network@0
/SYS/MB/NET1 PCIE network-pciex8086,1589 8.0GT/x8 8.0GT/x8 /pci@300/pci@1/network@0,1
/SYS/MB/NET2 PCIE network-pciex8086,1589 8.0GT/x8 8.0GT/x8 /pci@300/pci@1/network@0,2
/SYS/MB/NET3 PCIE network-pciex8086,1589 8.0GT/x8 8.0GT/x8

```

### Retrain Under-Optimized Links



If either of the previous methods indicate that the is trained to a less-than-optimal setting, retrain them as follows.

1. Halt all guests on the chassis.
2. Power off the host.
3. Remove the AC power from the chassis for a few seconds.
4. Repair the faults, using the `fmadm repair uuid-of-fault` command and the EVENT-ID you recorded for the uuid.

As shown in the previous example where the EVENT-ID for `/SYS/MB/NET2` was `33055e24-2f39-679e-9482-ec1c5f83b69b`. In this case, you would clear the fault as follows:

```
fmadm repair 33055e24-2f39-679e-9482-ec1c5f83b69b
```

## SP/config restore fails to restore some /HOST0/ SP/powermgmt/budget properties (26573130)

When a configuration backup is restored, the properties for `/HOST0/SP/powermgmt/budget` are not correctly restored, and instead, retain their previous values, which do not match the restored-backup.

### Recovery

Update the `/HOST0/SP/powermgmt/budget` settings manually using either the CLI or the web interface, as follows:

```
→ cd /HOST0/SP/powermgmt/budget
 /HOST0/SP/powermgmt/budget
→ show
 /HOST0/SP/powermgmt/budget

Targets:
Properties:
 activation_state = disabled
 status = ok
 powerlimit = 2224 (watts)
 timelimit = default (30 seconds)
 violation_actions = none
 ...
```

Check and update the values for `activation_state`, `powerlimit`, `timelimit`, and `violation_actions`, then back up the configuration to save your changes.

## Power cycle after fwupdate does not work on T8 (26613165)

On systems running Oracle Solaris 11.3 SRU 23 and SRU 24, the host cannot automatically power cycle as required by some firmware updates.

### Workaround

If a power cycle is required for a firmware update, you must manually power cycle the host to complete the update. For more information, refer to 26613165 in "fwupdate Known Issues" in the Oracle Hardware Management Pack for Oracle Solaris 11.3 Release Notes at: [http://docs.oracle.com/cd/E64576\\_01/index.html](http://docs.oracle.com/cd/E64576_01/index.html).

## IO domain IdgX is locked against modification at host restart (26191129)

The `pci-probe-policy` variable should only be used on Oracle SuperCluster engineered systems to specify how probing for PCIe devices is conducted. For all non-SuperCluster systems, the value of this property should not be changed. If you've changed the value of this variable, you might witness unknown system behavior.

### Workaround

No workaround is available for this error. Do not change the `pci-probe-policy` variable on non-SuperCluster systems.

## CMP devices become immediately disabled after their parent CMU is disabled (26586749)

As shown in the following example, if you set the `requested_config_state` property to `disabled` for a powered on component (for example, a CMIOU), the `current_config_state` setting for that component's children (for example, a CMIOU's CMPs) will immediately appear to be disabled even though the parent and children are not effectively disabled until next host power cycle.

```
-> set /SYS/CMU5 requested_config_state=Disabled
show /SYS/CMU5
```

```
requested_config_state = Disabled
current_config_state = Enabled
show /SYS/CMU5/CMP0
requested_config_state = Disabled
current_config_state = Disabled
disable_reason = Parent resource disabled
```

### Recovery

This message is harmless and can be ignored.

## Get link information failure when pressing ATTN button, PCIE in UNK state later (26620735)

After inserting a NIC adapter and pressing the ATTN button to configure the adapter, if you press the ATTN button too soon after the LED stops blinking, you might see the following errors in system logs:

```
rcm_daemon[]: NET: usage (device-path) get link information failure.
```

In this case, the removal operation will fail, and the LED will remain on to indicate that the adapter is still powered and cannot be removed.

### Recovery

Wait one minute, then press the ATTN button again to enable the adapter to be removed.

### Workaround

If the PCIE cards get into the UNK (unknown) state, you could do a reboot as a work around to get the system to recognize the cards.

## Panic: WAIT\_MBOX\_DONE() timeout running CPU/memory stress tests in a kernel zone (26628809)

In some configurations, for example, when creating a kernel zone with more than 128 dedicated vCPUs, memory-intensive operations inside the kernel zone might trigger a panic.

### Recovery

When running CPU/memory intensive workloads, if you receive a kernel zone panic message with `WAIT_MBOX_DONE() timeout` in the panic string, reduce the number of dedicated vCPUs to less than 128. For example, run the following command to set the dedicated vCPU number in the zone configuration:

```
zonecfg -z <your_zone> "select dedicated-cpu; set ncpus=<less_than_128>; end"
```

Alternatively, if you want to use a number of virtual CPUs greater than 128, you can use virtual CPUs instead of dedicated vCPUs by running the following commands:

```
zonecfg -z <your_zone> "remove dedicated-cpu"
zonecfg -z <your_zone> "add virtual-cpu; set ncpus=<alternate_value>; end"
```

## 3-node-Idom guest domain Cluster - Unable to acquire quorum device - Node panic (26732562)

In the following configurations, it is possible for a node in an Oracle Solaris Cluster to encounter a panic when a cluster member reboots.

- The cluster is comprised of three or more Oracle VM Server 3.5 guests.
- The cluster quorum device (as described in the *Oracle Solaris Cluster 4.3 Concepts Guide*, Chapter 2, "Key Concepts") is a virtual disk whose physical storage is provided by SAN Fiber-Channel storage devices.
- A restart of one member of the cluster triggers another node to panic with the following message:

```
panic[cpu28]/thread=c0400b4cb2640: CMM: Unable to acquire the quorum device.
2017-07-10/00:44:16 ereport.cpu.generic-sparc.l3data-return@SYS
```

### Workaround

Adjust the "qd\_acquisition\_timer" to 90, as described in the *Oracle Solaris Cluster 4.3 Software Installation Guide*, Chapter 3, "How to Configure Quorum Devices". Refer to the subsection "Unreachable quorum device" for information about adjusting the "qd\_acquisition\_timer."

## Failed to write to Admin Rx Queue Regs on versaboot IO domain reboot stress (26768250)

If a guest domain on a SPARC M8 or T8 server stores its OS in a remote storage device, rebooting the guest domain loads the OS from the storage device to system's memory over

network using FCode and iSCSI protocol. Subsequent and repeated reboots of the guest domain might produce the following error on the console, after which the reboot fails and the guest domain (I/O domain) hangs up:

```
Failed to write to Admin Rx Queue Regs
ERROR: Last Trap: Fast Data Access MMU Miss
ERROR: Last Trap: Fast Data Access MMU Miss
...
```

### **Resolution**

Update to System Firmware version 9.8 or later. See [“IMPORTANT - Install Latest OS Updates, Patches, and Firmware”](#) on page 10.

