SPARC T4-1B Server Module

Product Notes

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Contents

Late-Breaking Information

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

Supported Chassis

Several versions of the Sun Blade 6000 modular system have been available. The latest two versions support SAS-1 and SAS-2 modular components.

Gen2-capable PCIe EMs and NEMs connected to this server module through the chassis run at Gen2 speeds. Gen1-capable devices run at Gen1 speeds.

This server module is supported in the following chassis models:

- Latest model (A90-D and 7105379) Sun Blade 6000 modular system – Requires CMM software release 4.0 or later.
- Previous model (A90-B) Sun Blade 6000 modular system – Requires CMM software release 3.3 or later. This server module is only supported in this modular system with these modular components:

- SPARC T3-1B server module
- Sun Blade T6320 server module
- Sun Blade T6340 server module
- Sun Blade X6270 M2 server module
- Sun Blade X6270 server module
- Sun Blade X6275 M2 server module
- Sun Blade Storage Module M2

To determine your chassis version, see "Identify Your Chassis Version" on page 2.

▼ Identify Your Chassis Version

● **View the CMM on the rear of the modular system (chassis).**
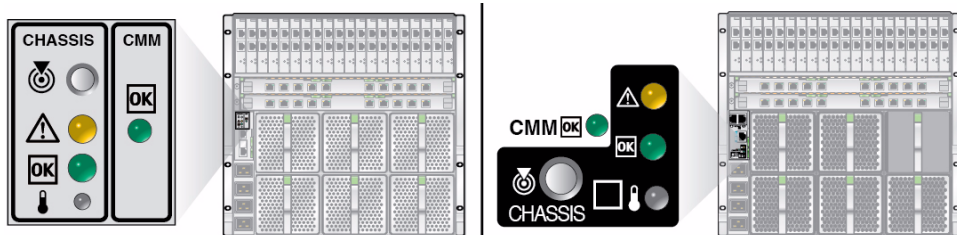
- Left – CMM on the previous model (A90-B) chassis
- Right – CMM on the latest model (A90-D and 7105379) chassis

For more details about the chassis, refer to the Sun Blade 6000 modular system documentation.

Supported Hardware Components

Hardware Component	Description
DIMMs	
• 4 Gbyte (Dual-rank x4) • 8 Gbyte (Dual-rank x4) • 16 Gbyte (Quad-rank x4) • 16 Gbyte (Dual-rank x4) • 32 Gbyte (Quad-rank x4)	All DIMMs installed in the server module must be the same type of DIMM (same capacity and same rank classification). The 16-Gbyte dual-rank and the 32-Gbyte quad-rank DIMMs require system firmware version 8.1.2.b or later. See "Minimum Supported Versions of the OS, Firmware, and Software" on page 5. For additional DIMM configuration information, refer to the *SPARC T4-1B Server Module Service Manual*.
NEMs	
NEM 7100091 – Sun Blade 6000 Virtualized 40 GbE NEM	Requires: • For 1GbE connectivity – no FEM required. • For 10GbE connectivity – FEM 7100283 or 7100633. • For SAS2 storage connectivity – REM SG- or SGX- SAS6-REM-Z This NEM's documentation is at: http://www.oracle.com/pls/topic/lookup?ctx=E21077-01
NEM 2073A – Sun Blade 6000 Ethernet Switched Network Express Module 24p 10GbE NEM	Requires: • For 10GbE network connectivity – FEM 4871A-Z. • For storage connectivity – REM SG-SAS6-REM-Z. This NEM's documentation is at: http://www.oracle.com/pls/topic/lookup?ctx=E19285-01
NEM 4338A – Sun Blade 6000 Virtualized Multi-Fabric 10GbE M2 NEM	Requires: • For 1GbE connectivity – no FEM required. • For 10GbE connectivity – FEM 7100283 or 7100633. • For SAS2 storage connectivity – REM SG- or SGX- SAS6-REM-Z. This NEM's documentation is at: http://www.oracle.com/pls/topic/lookup?ctx=E19530-01
NEM 4250A – Sun Blade 6000 Network Express Module 10-port 1 GbE Pass-Through NEM	Provides GbE connectivity – no FEM required.
REMs	
REM SG(X)-SAS6-REM-Z – Sun StorageTek 6 Gb SAS REM HBA	Prior to installation, update firmware on SAS-1 components. See "Important Firmware Upgrade Required Prior to Mixing SAS-1 and SAS-2 Components" on page 8. This REM's documentation is at: http://www.oracle.com/pls/topic/lookup?ctx=E19946-01

Hardware Component	Description
FEMs	
FEM 7100283 or **7100633** – PCI-E Pass-Through FEM	Supported.
FEM X4871A-Z – Sun Dual 10GbE PCIe 2.0 FEM	Supported. This FEM's documentation is at: http://www.oracle.com/pls/topic/lookup?ctx=E19539-01

Preinstalled Software

Software	Location	Description
One of the following: • Oracle Solaris 11 OS • Oracle Solaris 10 8/11 OS	The OS is installed on drive 0, slice 0 using one of these types of file systems: • Oracle Solaris 11 OS – ZFS • Oracle Solaris 10 OS – UFS	OS. **Note -** Mandatory package updates and patches are not preinstalled. You must obtain and install them before you put the server module into production. See "Required OS Patches and Package Updates" on page 5.
Oracle VM Server for SPARC	/opt/SUNWldm	Manages logical domains.
Electronic Prognostics (EP)	/opt/ep	Provides early warning of the potential for specific FRU faults.
Oracle VTS	/usr/sunvts	Provides hardware validation tests.

The preinstalled OS is ready to be configured at the appropriate point when you first apply power to the server. Review "Required OS Patches and Package Updates" on page 5 to find out if the preinstalled OS requires package updates.

You can reinstall the OS and install patches instead of using the preinstalled OS. See "Minimum Supported Versions of the OS, Firmware, and Software" on page 5.

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

Minimum Supported Versions of the OS, Firmware, and Software

Software	Minimu,m Supported Versions
Host OS	• Oracle Solaris 11 OS (or later) • Oracle Solaris 10 10/09 OS (or later) plus patches and two packages For OS patch and package update information, see "Required OS Patches and Package Updates" on page 5. For information about the preinstalled OS, see "Preinstalled Software" on page 4.
System firmware	8.1.2.b or later (includes Oracle ILOM 3.0).
Oracle VM Server for SPARC (LDoms)	2.1 plus patches (or later) The patches are included and preinstalled on the preinstalled OS.
Oracle Electronic Prognostics (EP)	1.2 This software provides early warning of the potential for specific FRU faults.
Oracle VTS	• 7.0 PS11 **Note -** For the most reliable test coverage of the various modular components in the chassis, use Oracle VTS 7.0 PS12 or higher.

Required OS Patches and Package Updates

If you use the preinstalled OS, or if you reinstall the OS on the server module, you might need to install certain patches or package updates before you put the server module into production.

Note – Oracle Solaris 11 OS uses package updates rather than patches.

Oracle Solaris 11 OS Package Updates

No package updates are required at this time to use Oracle Solaris 11 OS with this server.

You should install an Oracle Solaris 11 Support Repository Update (SRU), if one is available. Use the pkg command or the package manager GUI to download any available SRUs from: https://pkg.oracle.com/solaris/support

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Note – To access the Oracle Solaris 11 package update repository, you must have an Oracle support agreement which 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 and Oracle's certificate request web site at: https://pkg-register.oracle.com.

Oracle Solaris 10 OS Patches

TABLE 1-1 Oracle Solaris 10 8/11 OS Required Patches

Installation Order	OS or Patch
1	Oracle Solaris 10 8/11 OS
2	These mandatory patches: • 147440-04 (or higher) • 147149-01 (or higher) • 147153-01 (or higher) • 147707-01 (or higher) • 147159-03 (or higher)
3	Recommended OS Patchset Solaris 10 SPARC

TABLE 1-2   Oracle Solaris 10 9/10 OS

Installation Order	OS or Patch
1	Oracle Solaris 10 9/10 OS
2	Solaris 10 8/11 Patch Bundle (13058415)
3	These mandatory patches: • 147440-04 (or higher) • 147149-01 (or higher) • 147153-01 (or higher) • 147707-01 (or higher) • 147159-03 (or higher)
4	Recommended OS Patchset Solaris 10 SPARC
5	Use the `pkgadd` command to install `SUNWust1` and `SUNWust2`

TABLE 1-3   Oracle Solaris 10 10/09 OS Required Patches and Packages

Installation Order	OS or Patch
1	Oracle Solaris 10 10/09 OS
2	Solaris 10 8/11 Patch Bundle (13058415)
3	These mandatory patches: • 147440-04 (or higher) • 147149-01 (or higher) • 147153-01 (or higher) • 147707-01 (or higher) • 147159-03 (or higher)
4	Recommended OS Patchset Solaris 10 SPARC
5	Use the `pkgadd` command to install `SUNWust1` and `SUNWust2`

Note – For current information about required patches and updates for optional hardware and software, refer to the documentation for each product.

▼ Obtain Patches

1. Sign into 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 8/11 Patch Bundle

   - 13058415

   - 147159-03

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

   14159-%

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

   The patch README provides the patch installation instructions.

Important Firmware Upgrade Required Prior to Mixing SAS-1 and SAS-2 Components

Before you insert a SAS-2 component into the chassis, you must upgrade the firmware of your SAS-1 components (SAS-1 NEMs and storage modules) to a firmware version that supports SAS-1/SAS-2 coexistence.

At a minimum, all SAS expanders for SAS-1 NEMs and Sun Blade 6000 storage modules must be upgraded to firmware revision 5.04.03 (or later). This firmware revision enables SAS-1/SAS-2 devices to coexist in the Sun Blade 6000 modular system chassis. Using older firmware revisions might result in SAS-2 devices hanging.

Refer to the *SAS-1/SAS-2 Compatibility Upgrade Guide* for details. This guide is available at:

http://www.oracle.com/pls/topic/lookup?ctx=E22513_01

Identifying Drive Logical Device Names and Physical Locations

The Oracle Solaris OS now uses the worldwide number (WWN) in place of the target ID field (t*n)* in drive logical device names for SAS-2 storage controllers.

This change affects how you correlate a drive's logical name with the drive's physical location.

These points are key to understanding the impact of this change:

- Before the change to using WWNs, drives were known to the OS by a logical name such as c0t0d0. This logical name mapped to the drive's physical location.

  With the change, the device identifier for drives now has this form: c*nt*WWN*dn*, where *WWN* is a unique hexadecimal value.

  An example of a logical device name is:

  c0t5000C50033438DBBd0

  This WWN value does not map in a predictable way to the physical location of the drive.

- The OBP and the OS use different WWN numbers to identify a drive. This is explained further in "Correlate WWN Device Names With Physical Locations (diskinfo Command)" on page 10.

- Here are some examples of situations when you must correlate a logical device name with a drive's physical location:

  - When downloading the OS over a network, you must specify the logical device name of the drive in slot 0 (the default boot device). In addition, if you use Oracle Solaris Jumpstart, you must use a specific WWN syntax. See "Oracle Solaris Jumpstart WWN Syntax" on page 12.

  - If you run the format command, you must select one of the logical device names presented. To ensure you select the correct drive, you must correlate a logical device name with the physical drive.

  - If you view a system message that lists a drive's logical device name, you might need to identify the slot in which the drive is installed.

To correlate drive logical device names with physical locations or the other way around:

- From the Oracle Solaris 10 8/10 OS, use the diskinfo command. See "Correlate WWN Device Names With Physical Locations (diskinfo Command)" on page 10.

■ At the OBP ok prompt, use the `probe-scsi-all` command. See "Correlate WWN Device Names With Physical Locations (probe-scsi-all Command)" on page 11.

▼ Correlate WWN Device Names With Physical Locations (`diskinfo` Command)

The `diskinfo` command, a new disk and slot identification utility, was introduced in Oracle Solaris 10 8/11 OS and in the kernel patch 144500-19 (or later).

If you do not have access to the OS, for example, if the server module is not booted, see "Correlate WWN Device Names With Physical Locations (probe-scsi-all Command)" on page 11.

If your OS does not provide the `diskinfo` command, refer to the *SPARC and Netra SPARC T4 Series Servers Administration Guide* for alternative methods.

1. Log into the OS.

2. Type:

```
# diskinfo -a

Enclosure path:         1114BD0ACC-physical-hba-0
Chassis Serial Number:  1114BD0ACC-physical-hba-0
Chassis Model:          ORCL,SPARC-T4-1B

Label      Disk name                Vendor   Product          Vers
---------- ------------------------ -------- ---------------- ----
/SYS/HDD0  c0t5000C50033438DBBd0    SEAGATE  ST930003SSUN300G 0B70
/SYS/HDD1  c0t5000C50005C15803d0    SEAGATE  ST930003SSUN300G 0468
```

3. Use the output under the Label and Disk Name columns to correlate a drive's physical location with its corresponding logical device name.

For this server module:

■ `/SYS/HDD0` represents a drive in slot 0.

■ `/SYS/HDD1` represents a drive in slot 1.

In this example, the drive installed in slot 0 has a logical device name of `c0t5000C50033438DBBd0`.

> **Note –** The `diskinfo` command provides a variety of disk information depending on the command options you specify. For more information, type `diskinfo -h` and refer to the `diskinfo`(1M) man page.

▼ Correlate WWN Device Names With Physical Locations (`probe-scsi-all` Command)

If you have access to the OS, you might be able to use the `diskinfo` command instead. See "Correlate WWN Device Names With Physical Locations (diskinfo Command)" on page 10.

1. **At the ok prompt, type:**

```
{0} ok probe-scsi-all
/pci@400/pci@1/pci@0/pci@c/LSI,sas@0 <===== SAS Controller

FCode Version 1.00.54, MPT Version 2.00, Firmware Version
5.00.17.00

Target 9
 Unit 0   Disk   SEAGATE  ST930003SSUN300G 0B70    585937500 Blocks,
300 GB
 SASDeviceName 5000c50033438dbb  SASAddress 5000c50033438db9
PhyNum 0 <=HD,slot 0
Target b
 Unit 0   Disk   SEAGATE  ST930003SSUN300G 0468    585937500 Blocks,
300 GB
 SASDeviceName 5000c50005c15803  SASAddress 5000c50005c15801
PhyNum 1 <=HD,slot 1
Target c
 Unit 0   Encl Serv device   SUN      NEM Hydra II SOL 0308
 SASAddress 5080020000bb193d  PhyNum 24

/pci@400/pci@1/pci@0/pci@0/pci@0/usb@0,2/hub@3/storage@2
 Unit 0   Removable Read Only device    AMI    Virtual CDROM   1.00
```

2. **In output, look for the following disk identifiers:**

   - `LSI,sas@0` – Controller (REM) on the server module.
   - `SASDeviceName` – WWN that the Oracle Solaris OS recognizes.
   - `SASAddress` – WWN that the OBP references.
   - `PhyNum` – Physical slot that the drive occupies.

3. **Use the values in the output to construct the resulting Oracle Solaris logical device name as expressed by cntndn.**

   This example is based on the previous output:

   - c*n* = c0

     n is the SAS controller number, 0 in this example.

   - t*n* = t5000c50033438dbb

     n is the SASDeviceName value.

   - d*n* = d0

     n is 0 for all embedded SCSI devices.

   The resulting logical device name is c0t5000c50033438dbbd0.

Oracle Solaris Jumpstart WWN Syntax

The Oracle Solaris syntax requires all WWN alpha characters to be capitalized.

Note – Only the WWN portion of the logical device name requires capitalized alpha characters. The c0 and d0 portion are not capitalized.

This Jumpstart profile example shows how to use the WWN syntax when installing the OS on a specific drive.

```
#
install_type flash_install
boot_device c0t5000C50033438DBBd0 preserve

archive_location nfs
129.148.94.249:/export/install/media/solaris/builds/s10u9/flar/la
test.flar

# Disk layouts
#
partitioning explicit
filesys rootdisk.s0          free /
filesys rootdisk.s1          8192 swap
```

Interactive Installation Example

In an interactive installation, you are asked to specify one or more drives as the targets for the OS installation. This step ensures that sufficient storage capacity is provided for the installation. Specify the drive with the WWN value that corresponds to the drive on which you want to install the software.

These WWN values are illustrated in the following interactive example. The drive selected as the installation target is located in drive slot 0, the default boot location.

Note – If you prefer to use some other disk, specify it instead of the one in HDD slot 0.

```
_ Select Disks_____

On this screen you must select the disks for installing Solaris software. Start
by looking at the Suggested Minimum field; this value is the approximate space
needed to install the software you've selected. Keep selecting disks until the
Total Selected value exceeds the Suggested Minimum value.
NOTE: ** denotes current boot disk

Disk Device                                     Available Space
===========================================================================
[ ] c0t5000C50005C15803d0                       286090 MB
[X] c0t5000C50033438DBBd0                       286090 MB (F4 to edit)

                Total Selected: 286090 MB
                Suggested Minimum: 5032 MB


Esc-2_Continue F3_Go Back    F4_Edit    F5_Exit    F6_Help
```

Note – You might need to label new and replacement drives using the format utility before you can install the OS on the drives.

Known Product Issues

These sections describe known issues for the server module:

- "Hardware Issues" on page 15
- "Firmware, OS, and Other Software Issues" on page 17

Hardware Issues

These are the known hardware issues and workarounds.

Sun Type 6 Keyboards are Not Supported by SPARC T4 Series Servers

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

PSH Might Not Clear a Retired Cache Line on a Replaced Motherboard (CR 7031216)

This issue is fixed in the Oracle Solaris 11.1 OS.

When the enclosure is replaced to repair faulty cache on the motherboard, PSH might not clear the cache on the replacement. The cache line remains disabled.

Workaround: Manually clear the disabled cache line by typing these commands:

```
# fmadm repaired fmri | label
# fmadm replaced fmri | label
```

2-Meter USB Cable Length Limit (7048419)

The server module has three USB ports:

- Port 1 and 2, accessible through a dongle that is attached to the front UCP connector.
- Port 5, located on the rear of the motherboard (intended for a USB flash drive).

Workaround: If you connect USB devices to ports 1 or 2, ensure that the cable does not exceed 2 meters (approximately 6.5 feet).

Uncorrectable L2 Cache Errors are Sometimes Reported as Core Faults Without Any Cache Line Retirement (CR 7071237 and CR 7071974)

When a processor cache line encounters an uncorrectable error, the fault manager should retire the cache line that is involved in the error. However, the fault manager might not succeed in retiring the faulty cache line and instead report the entire core or processor as faulted.

Workaround: Schedule a replacement of the enclosure (motherboard). For additional information about this issue, search for message ID SUN4V-8002-WY at the Oracle support site: http://support.oracle.com.

During a Reboot After an Unrecoverable Hardware Error, CPUs Might Not Start (CR 7075336)

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

Here is an example of the type of error displayed:

```
rebooting...
Resetting...

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

Workaround: Log into Oracle ILOM on the SP and power cycle the host:

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

Blue LED on Drive Does Not Light When the Drive is Ready to Remove (CR 7082700)

When you attempt to unconfigure a drive for removal, the drive's blue LED, which indicates the drive is ready for removal, might not light. This situation occurs after you replace a drive in a slot with a drive that has a different WWID.

Workaround: If you inserted a drive after booting the server, reboot the server for the blue LED to work properly.

Firmware, OS, and Other Software Issues

The following notes describe know issues for the firmware, OS, and other software.

`fault.memory.memlink-uc` Fault Did Not Cause Panic as Stated by System Message (CR 6940599)

When a `fault.memory.memlink-uc` interconnect fault is detected, the server should shut down to protect memory integrity. On intermittent occasions, this fault has been reported during boot operations without the server shutting down.

Although this irregular behavior might indicate that the system was able to recover from the memory link error and restore a healthy boot-up state, the safest course is to power down then power up the server.

Recovery Action: Log into Oracle ILOM on the SP power cycle the host:

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

Timestamp for an Oracle ILOM Fault/Critical Event Might Be off by One Hour (CR 6943957)

This issue is fixed in system firmware 8.2.1.b.

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

Workaround: Perform one of these actions:

- Upgrade the system firmware to version 8.2.1 or higher.
- Check the timestamp recorded in the event log. If that timestamp does not match the timestamp reported in the email, use the event log time.

e1000g Driver Generates Spurious ereports When Installing Oracle Solaris OS Over a Sun PCIe Dual Gigabit Ethernet Adapter (CR 6958011)

When installing the Oracle Solaris OS on domains controlled through Sun PCIe Dual Gigabit Ethernet (UTP or MMF) adapters, the e1000g driver might generate false error reports on the static direct I/O (SDIO) and primary domains. For example:

```
date time ereport.io.pciex.tl.ca nvlist version: 0
          ena = 0x298a9f62243802
ena = 0x298a9f62243802
detector = (embedded nvlist)
nvlist version: 0
scheme = dev
device-path = /pci@400/pci@1
(end detector)

class = ereport.io.pciex.tl.ca
dev-status = 0x2
ue-status = 0x8000
```

```
ue-severity = 0x62030
adv-ctl = 0xf
source-id = 0x600
source-valid = 1
__ttl = 0x1
__tod = 0x4c058b2e 0x1e8813a0
```

Workaround: You can safely ignore these ereports.

When `diag-switch?` Is Set to `true`, Oracle Solaris OS Fails to Update the EEPROM for Automatic Rebooting (CR 6982060)

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

Under these conditions, the server displays these error message and you are unable to reboot from the device:

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

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

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

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

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

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

Unable to Configure RAID Volume Sizes Other Than the Max Size When Using the `sas2ircu` Command
(CR 6983210)

If you attempt to create a RAID volume smaller than MAX, the following series of messages is returned:

```
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: Volume created with size other than 'MAX' is not supported.
         Do you want to continue with volume creation (YES/NO)? n
SAS2IRCU: you must answer "YES" or "yes" to proceed; operation aborted!
SAS2IRCU: Error executing command CREATE.
```

RAID volumes smaller than MAX are not supported. However, if you want to create a volume below MAX size for nonproduction use, the software allows you to do so. This situation is not clear from the message.

Workaround: Ignore the messages and answer **yes** for the question "`Do you want to continue with volume creation (YES/NO)?`".

Fault Management Sometimes Sends Resolved Cases to the SP (CR 6983432)

This issue does not apply to server modules that are running the Oracle Solaris 11 OS.

For the Oracle Solaris 10 OS, install patch 147790-01 or higher.

Previously diagnosed and repaired PSH faults from the host reappear in Oracle ILOM when the host reboots. An incorrect report of a PSH-diagnosed fault appears in the Oracle ILOM CLI and web interface, and the fault LED illuminates.

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

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

1. Display the fault information.

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

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

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

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

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

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

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

2. Check for faults on the host.

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

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

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

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

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

5. Repair the fault in Oracle ILOM.

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

Units Used to Define the MIB Power Management Time Limit are Reported in Seconds (CR 6993008)

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

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

Spurious Interrupt Message in System Console When Using Oracle VTS (CR 7038266)

This issue is fixed in system firmware 8.2.1.b or higher.

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

```
date time hostname px: [ID 781074 kern.warning] WARNING: px0: spurious
interrupt from ino 0x3,0x02,or 0x04
```

Workaround: Update the system firmware or you can safely ignore this message.

Intermittent Link Training Timeout Displayed During Power Cycles (CR 7043201)

On occasion during a power cycle, the server module might display the following warning message:

```
[CPU 0:0:0] NOTICE: MCU0: Link init failed: TS0 Timeout
```

The server module automatically retries the training sequence operation without error.

Workaround: You can safely ignore this message.

The `cfgadm` Command Might Fail on SG-SAS6-REM-Z or SGX-SAS6-REM-Z HBAs (CR 7044759)

The `cfgadm` command might fail on SG-SAS6-REM-Z or SGX-SAS6-REM-Z HBA devices.

```
# cfgadm -c unconfigure Slot1
cfgadm: Component system is busy, try again: unconfigure failed
WARNING: (pcieb2): failed to detach driver for the device
(mpt_sas9) in the Connection Slot1
WARNING: (pcieb2): failed to detach driver for the device
(mpt_sas9) in the Connection Slot1
```

Workaround: Disable the fault management daemon before running the `cfgadm` unconfigure command.

```
# svcadm disable fmd
# ps -ef |grep fmd
...
# cfgadm -c unconfigure PCI-EM0
```

After completing the `cfadm` task, re-enable the fault management daemon:

```
# svcadm enable fmd
```

Message From `cpustat` Refers to Processor Documentation Incorrectly (CR 7046898)

This issue is fixed in the Oracle Solaris 11.1 OS.

A message displayed by the `cpustat` command says:

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

The document and website listed in this message are not available.

Using `trapstat` Might Cause a Panic (CR 7052070)

This is only an issue on server modules running the Oracle Solaris 10 10/09 OS or Oracle Solaris 10 09/10 OS.

If you run the `trapstat -t` command, the server module might panic with a watchdog reset.

Workaround: Add the `SUNWust1` and `SUNWust2` packages from the Oracle Solaris OS media or from the Oracle Solaris 10 ISO image.

`reboot disk` Command Occasionally Fails When `disk` Argument Picks Up Extra Characters (CR 7050975)

This issue is fixed in the Oracle Solaris 11.1 OS.

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

Recovery Action: Repeat the boot request.

PCIe Correctable Errors Might Be Reported (CR 7051331)

This issue is fixed in the Oracle Solaris 11.1 OS.

In rare cases, PCIe devices in the server module might report I/O errors that are identified and reported by predictive self-healing (PSH). For example:

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

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

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

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

Response    : One or more device instances may be disabled

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

Action      : If a plug-in card is involved check for badly-seated cards or
```

```
                bent pins. Otherwise schedule a repair procedure to replace the
                affected device.  Use fmadm faulty to identify the device or
                contact Sun for support.
```

These errors might be an indication of a faulty or incorrectly seated PCI EM. Or these errors might be erroneous.

Workaround: Ensure that the PCI EM is properly seated and functioning. If the errors continue, apply the Oracle Solaris 10 8/11 OS patch 147705-01 (or higher).

Watchdog Timeouts Seen With Heavy Workloads and Maximum Memory Configurations (CR 7083001)

This issue is fixed in the Oracle Solaris 10 8/11 with patch 147440-05 (or higher) and in the Oracle Solaris 11.1 OS.

With certain unusual heavy workloads, especially where a highly processor-intensive workload is bound to cpu 0, the host might appear to suddenly reset back to OBP without any sign of there having been a crash or a panic. The Oracle ILOM event log contains a host watchdog expired entry. The problem is more likely to occur on systems with full memory configurations.

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

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

If you see an entry labeled `Host watchdog expired`, you are experiencing this issue.

Workaround: Contact your authorized service provider to see if a fix is available.

There are two ways you can work around this issue:

- You can extend the watchdog period by adding this entry to the Oracle Solaris `/etc/system` file:

```
set watchdog_timeout = 60000
```

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

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

```
set watchdog_enabled = 0
```

Whenever you modify the `/etc/system` file you must reboot the system for the changes to take effect.

If you do not want to reboot the system immediately after editing `/etc/system`, you can apply an additional temporary workaround that takes effect immediately. To apply this temporary workaround, as `root` type:

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

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

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

This temporary processor set is removed on the next operating system reboot, at which point the /etc/system file workaround takes effect.

ereport.fm.fmd.module Generated During a Reboot of an SDIO Domain (CR 7085231)

This issue is fixed in the Oracle Solaris 11.1 OS.

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

For example:

```
# fmdump -eV -c ereport.fm.fmd.module
TIME                              CLASS
Sep 27 2011 06:27:19.954801492 ereport.fm.fmd.module
nvlist version: 0
        version = 0x0
        class = ereport.fm.fmd.module
        detector = (embedded nvlist)
        nvlist version: 0
                version = 0x0
                scheme = fmd
                authority = (embedded nvlist)
                nvlist version: 0
                        version = 0x0
                        product-id = ORCL,SPARC-T4-1B
                        server-id = c193-133
                (end authority)

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

        ena = 0x425fc9b065404001
```

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

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

Oracle VTS `dtlbtest` Hangs When CPU Threading Mode is Set to `max-ipc` (CR 7094158)

This issue is fixed in Oracle VTS 7.0 PS13.

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

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

Workaround: Do one of the following:

- Update to Oracle VTS 7.0 PS13
- Do not run the Oracle VTS `dtlbtest` with the Oracle VM for SPARC threading mode set to `max-ipc` mode.

Cold Reset Adds One Day to System Time (CR 7127740)

This issue is fixed in system firmware 8.1.4.e and higher.

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

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

```
# shutdown -g0 -i0 -y
```

```
# uadmin 1 6
```

```
# init 5
```

```
# poweroff
```

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

```
-> stop /SYS
. . .
-> start /SYS
```

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

Workaround: Install the latest system firmware. This issue is fixed in the system firmware version 8.1.4.e and higher.

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

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

```
# date 022609002012
```

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