SPARC T3-4 Server

Product Notes

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Contents

Using This Documentation

This document contains late-breaking information about the SPARC T3-4 server. It is written for technicians, system administrators, authorized service providers, and users who have advanced experience installing and configuring server hardware.

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Product Notes

For late-breaking information and known issues about this product, refer to the product notes at:

http://URL-to-product-notes

Related Documentation

Documentation	Links
All Oracle products	`http://www.oracle.com/documentation`
SPARC T3-4	`http://URL-to-your-product-library-page`
Oracle Solaris OS and systems software library	`http://www.oracle.com/technetwork/indexes/documentation/index.html#sys_sw`
Oracle Integrated Lights Out Manager 3.0	`http://www.oracle.com/technetwork/indexes/documentation/#sys_sw`
Oracle VTS 7.0	`http://www.oracle.com/pls/topic/lookup?ctx=OracleVTS7.0`

Feedback

Provide feedback about this documentation at:

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

Support and Accessibility

Description	Links
Access electronic support through My Oracle Support	`http://support.oracle.com`
	For hearing impaired:
Learn about Oracle's commitment to accessibility	`http://www.oracle.com/us/corporate/accessibility/index.html`

Late-Breaking Information

This document contains the following information and late-breaking news about Oracle's SPARC T3-4 server:

- "Preinstalled Software" on page 1
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Preinstalled Software

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

TABLE 1-1   Preinstalled Software

Software	Location	Function
Oracle Solaris 11 OS or Oracle Solaris 10 9/10 OS	Root disk Slice 0	Operating system
Oracle VM Server for SPARC • 2.2 with Oracle Solaris 11 • 2.0 with Oracle Solaris 10	/opt/SUNWldm	Manages logical domains
Electronic Prognostics • 1.2 with Oracle Solaris 11 • 1.1 with Oracle Solaris 10	/opt/ep	Provides early warning of the potential for specific FRU faults
System firmware 8.2.0.f or later	Service processor	Oracle ILOM operations
	Host processor	All other firmware operations

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

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

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

Supported Versions of Oracle Solaris OS, Firmware, and Software

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

Software	Supported Versions
Operating System	• Oracle Solaris 11 • Oracle Solaris 10 8/11 OS • Oracle Solaris 10 9/10 OS with required patchsets • Oracle Solaris 10 10/09 OS with Solaris 10 9/10 SPARC Bundle and required patchsets
Oracle VM Server for SPARC (LDoms)	• 2.1 or 2.2 with Oracle Solaris 11 • 2.0 with Oracle Solaris 10
Electronic Prognostics on the server host	• 1.2 with Oracle Solaris 11 • 1.1 with Oracle Solaris 10
System firmware	8.0.4.c or higher

OS Package and Patch Updates

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

Determining Oracle Solaris 11 OS Package Update Version

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

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

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

Then evaluate the following three fields in the FMRI value:

- 175 —The value 175 indicates that the system has Oracle Solaris 11 OS installed. This value is a constant for Oracle Solaris 11.

- 0 —The first field to the right of "175" indicates the update release. In this example, there have been no updates to the initial release.

- 2 —The next field contains the SRU value. In this example, the second patch bundle (called SRU2) has been installed on Oracle Solaris 11, update 0.

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

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

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

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

Determining Oracle Solaris 10 Patch Revision

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

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

Minimum Required Patchset for Oracle Solaris 10 08/11 OS

No additional patches are required before using the server with the Oracle Solaris 10 08/11 OS. However, you should download and install "Recommended OS Patchset Solaris 10 SPARC". This patchset contains Oracle Solaris 10 OS patches that address current Sun Alerts.

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

Minimum Required Patchset for Oracle Solaris 10 09/10 OS

Install the patches listed in TABLE 1-3 before using the server with the Oracle Solaris 10 09/10 OS.

TABLE 1-3 Minimum Required Patchset for Oracle Solaris 10 09/10

143647-08
144567-01
145098-02
145868-01
144486-04
144488-04
145786-02
145961-01

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

Note – The download of the Solaris 10 09/10 SPARC Bundle is identified by the number 13153809 at http://support.oracle.com.

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

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

Note – The download of the Solaris 10 8/11 SPARC Bundle is identified by the number 13153814 at http://support.oracle.com.

ALOM CMT Compatibility Shell Not Supported

The SPARC T3-4 server does not support the Advanced Lights Out Manager (ALOM) CMT command-line compatibility shell (cli_mode=alom) that was available in previous platforms. For more information about the supported Oracle Integrated Lights Out Manager (ILOM) features, refer to the *SPARC T3 Series Servers Administration Guide*.

Power Supply Inrush/Input Surge Current Information

Following are the inrush/input surge current values for the SPARC T3-4 server power supplies:

Inrush = 25Apk, Leakage = 1.6mA

Custom `nvalias` Settings Will Not Change During a System Reconfiguration

If you use the `nvalias` OBP command to make custom system settings, you must update these settings if the system reconfigures itself after a hardware failure.

For example, if the system experiences a hardware failure such as a failed CMP, the system will reconfigure the I/O device paths during the next reboot. If you set a custom device path to a boot disk using the `nvalias` command, the system will not reconfigure the custom device path and the server will not boot the operating system. You must rediscover the device path to the boot disk and update the `nvalias` setting accordingly.

Known Product Issues

This section describes issues that are known to affect Oracle's SPARC T3-4 server. The issue descriptions are organized as follows:

Hardware Issues

This section describes issues related to server components.

Direct I/O Support

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

For the most up-to-date list of PCIe cards that support the Sirect I/O feature, refer to https://support.oracle.com/CSP/main/article?cmd=show&type=NOT&doctype=REFERENCE&id=1325454.1

Note – Not all cards listed on the Direct I/O web page are supported in the SPARC T3-4 server. Check the server hardware compatibility list before installing any PCIe cards.

Sun Type 6 Keyboards Are Not Supported by SPARC T3 Series Servers

Sun Type 6 keyboards cannot be used with SPARC T3 series servers.

Hardware RAID 1E Not Supported

Although hardware RAID 0 and 1 are supported on the SPARC T3-4 server, hardware RAID 1E is not supported. Other RAID formats are available through software RAID.

I/O Performance Might Degrade When Using More Than Two Ports Across Multiple Sun Dual 10 GbE SFP+ PCIe Cards (CR 6943558)

Excessive packet loss has been seen when three or more ports are used across multiple Sun Dual 10GbE SFP+ PCIe cards. This loss is likely to significantly degrade trasmit and receive performance. When only two ports are used, packet loss is minimal and transmit/receive performance is as expected.

Workaround:

If you are experiencing network performance issues, use one of the following procedures to enable flow control for the interfaces. This will greatly reduce packet loss and improve performance.

▼ Enable Flow Control (With a System Reboot)

1. **Add the following lines in the** `/kernel/drv/ixgbe.conf` **file:**

```
fm_capable = 0;
flow_control = 3;
tx_queue_number = 2;
rx_queue_number = 6;
intr_throttling = 1000;
```

2. **Reboot the system.**

▼ Enable Flow Control (Without a System Reboot)

1. Add the following lines in the `/kernel/drv/ixgbe.conf` **file:**

```
fm_capable = 0;
flow_control = 3;
tx_queue_number = 2;
rx_queue_number = 6;
intr_throttling = 1000;
```

2. Unplumb all the `ixgbe` **interfaces.**

3. Type the `update_drv ixgbe` **command:**

```
# update_drv ixgbe
```

4. Plumb all the `ixgbe` **interfaces.**

`PARALLEL_BOOT/HOST_LAST_POWER_STATE=` `enabled` Failed, Unexpected Power State (Off) After AC Cycle (CR 6994047)

When `HOST_LAST_POWER_STATE()` is set to *enabled* and then the system goes through an AC power cycle, the host sometimes is shown as OFF when the power up operation completes. This status information might be false.

Recovery:

Power cycle the system again to clear the false status information.

Server Panics When Booting From a USB Thumbdrive Attached to the Front USB Ports (CR 6983185)

When attempting to boot a USB thumbdrive (portable USB flash drive) inserted in one of the front USB ports (USB2 or USB3), the server will panic and fail to boot.

Workaround:

Use the server's rear USB ports (USB0 or USB1) whenever booting off of an external USB thumbdrive.

Copper QSFP Cables Not Supported (CR 6941888)

The SPARC T3-4 Server 10 Gb Network Module does not support copper QSFP cables. The network module supports only optical QSFP transceiver modules and cables.

Workaround:

Use the cable specified in the list of supported system options.

Performance Limitations Occur When Performing a Hot-Plug Installation of a x8 Card Into a Slot Previously Occupied With a x4 Card (CR 6987359)

If you hot-plug a Dual 10GbE SFP+ PCIe2.0 Niantic EM Network Interface Card (NIC) (part number 1110A-Z) into a PCI Express Module slot that had previously held a 4-Port (Cu) PCIe (x4) Northstar ExpressModule (part number (X)7284A-Z-N), the expected performance benefit of the Dual 10GbE SFP+ PCIe2.0 Niantic NIC might not occur.

This problem does not occur if the slot was previously unoccupied, or if it had been occupied by any other option card. This problem does this occur if the card is present when the system is powered on.

Workaround:

Hot-plug the Dual 10Gbe SFP+ PCIe2.0 Niantic EM card a second time, using one of the following methods.

- Use the cfgadm (1m) command to disconnect, then reconnect, the card:

```
# cfgadm -c disconnect slot-name
# cfgadm -c configure slot-name
```

- Use the hotplug(1M) command to disable and poweroff the device, and then poweron and enable the device:

```
# hotplug disable device-path slot-name
# hotplug poweroff device-path slot-name
# hotplug poweron device-path slot-name
# hotplug enable device-path slot-name
```

- Use the Attention (ATTN) button on the card to deconfigure and then reconfigure the card.

> **Note –** You don't need to physically remove and re-insert the card as part of the second hot plug operation.

Error Messages Not Retained After UE and CE Memory Failures (CR 6990058)

If your server's memory experiences a uncorrectable error (UE) followed by a correctable error (CE), the correct error messages will not be generated and they will not be retained by the service processor. You will not be able to diagnose the memory problem.

Workaround:

Reboot the system. If memory problems persist, contact your service representative for assistance.

Watchdog Timeouts Might Occur Under Very Heavy Load (CR 6994535)

In certain unusual heavy workloads, the host may appear to suddenly reset back to OBP without any sign of a crash or a panic. The ILOM event log contains a "Host watchdog expired" entry.

Display the SP event log:

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

If this issue is affecting the server, the event log contains an entry labelled, "Host watchdog expired."

Workaround:

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

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

```
 set watchdog_timeout = 600000
```

This extends the watchdog timeout period to 10 minutes (600,000 milliseconds).

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

```
set watchdog_enabled = 0
```

Note – You must reboot the server for any /etc/system modification to take effect.

Unrecoverable USB Hardware Errors Occur In Some Circumstances (CR 6995634)

In some rare instances, unrecoverable USB hardware errors occur, such as the following:

```
usba: WARNING: /pci@400/pci@1/pci@0/pci@8/pci@0/usb@0,2 (ehci0): Unrecoverable
USB Hardware Error
usba: WARNING: /pci@400/pci@1/pci@0/pci@8/pci@0/usb@0,1/hub@1/hub@3 (hubd5):
Connecting device on port 2 failed
```

Workaround:

Reboot the system. Contact your service representative if these error messages persist.

Replace Faulty DIMMs With Uncorrectable Errors (UEs) As Soon As Possible (CR 6996144)

If a DIMM has an uncorrectable error (UE), the server will generate a fault.memory.bank error that labels a DIMM as faulty. You can view this error using the Oracle ILOM show faulty command or the fmdump -v command.

If a DIMM in your system contains a persistent uncorrectable error (an error that continually occurs even after multiple reboots), replace this DIMM as soon as possible to avoid any server downtime.

Workaround:

Instead of scheduling downtime to replace the faulty DIMMs, replace the faulty DIMMs as soon as possible. Contact your service representative for assistance.

Service Processor Does Not Always Initialize When AC Power Is Removed for Less Than 120 Seconds (CR 6997182)

The service processor (SP) does not always initialize when AC power is removed for less than 120 seconds.

Workaround:

To initialize the SP, unplug all four server power cords. Wait at least 120 seconds before reconnecting the power cords.

Intermittent Power Supply Faults Occur During Power On (CR 7066165)

In rare instances, the system FRU power-up probing routine might fail to list all installed system power supplies. The power supplies themselves are not faulted, but commands listing system FRUs do not show the presence of the non-probed power supply.

The fault sets the system fault LED, but no power supply fault LED is illuminated. To find the fault, use the fmadm utility from the ILOM fault management shell.

Start the fmadm utility from the ILOM CLI:

```
-> start /SP/faultmgmt/shell
Are you sure you want to start /SP/faultmgmt/shell (y/n)? y
faultmgmtsp>
```

To view the fault, type the following:

```
faultmgmtsp> fmadm faulty
------------------- ----------------------------------- -------------- ------
Time                UUID                                 msgid          Severity
------------------- ----------------------------------- -------------- ------
2011-09-21/13:59:35 f13524d6-9970-4002-c2e6-de5d750f4088 ILOM-8000-2V   Major

Fault class : fault.fruid.corrupt

FRU         : /SYS/PS0
              (Part Number: 300-2159)
              (Serial Number: 476856F+1115CC0001)
```

```
Description : A Field Replaceable Unit (FRU) has a corrupt FRUID SEEPROM

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

Impact     : The system may not be able to use one or more components on
             the affected FRU.  This may prevent the system from powering
             on.

Action     : The administrator should review the ILOM event log for
             additional information pertaining to this diagnosis.  Please
             refer to the Details section of the Knowledge Article for
             additional information.
```

Workaround:

From the fault management shell prompt, clear the fault, exit the fault management shell, and reset the SP. For example:

```
-> start /SP/faultmgmt/shell
Are you sure you want to start /SP/faultmgmt/shell (y/n)? y
faultmgmtsp> fmadm repair /SYS/PS0
faultmgmtsp> exit

-> reset /SP
Are you sure you want to reset /SP (y/n)? y
```

After the SP has reset, verify that all installed power supplies appear in the list of system devices:

```
-> ls /SYS
```

If the problem occurs again after applying this workaround, contact your authorized Oracle Service Provider for further assistance.

Voltage Fault Prevents Host Power-On (CR 7003014)

In a very small percentage of the time when a system is powered on, ILOM may report a problem with a 12V sensor on one of the processor modules (PM0 or PM1), log a system fault, and abort the power-on sequence.

The following is an example of the error message desplayed in the ILOM command line interface if the ILOM start /SYS command fails and the power-on sequence is aborted:

```
-> start /SYSstart: System faults or hardware configuration
prevents power on.
Are you sure you want to start /SYS (y/n)? y
Are you sure you want to start /SYS (y/n)? y
```

If your system does not power on using the ILOM start /SYS command, view the ILOM event log:

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

This issue might be present if you see an error in the ILOM event log that includes PMx/PDx/V_+12V0 (where x is either 0 or 1), such as the following:

```
1115    Sat Jan  1 12:44:15 2000   IPMI      Log        minor
        ID =   b2 : 01/01/2000 : 12:44:15 : Voltage : PM0/PD1/V_+12V0 : Lower Non
        -critical going low  : reading 0 <= threshold 11.43 Volts
```

In addition, the ILOM fault management shell indicates that the processor module is faulty.

To view a list of faulty components, do the following:

1. Start the ILOM fault management shell:

```
-> start /SP/faultmgmt/shell
Are you sure you want to start /SP/faultmgmt/shell (y/n)? y
```

2. Display the list of faulty components:

```
faultmgmtsp> fmadm faulty
```

The following example displays a voltage sensor fault on Processor Module 0 (PM0):

```
------------------- ------------------------------------ ------------- -------
Time                UUID                                 msgid        Severity
------------------- ------------------------------------ ------------- -------
2010-11-12/19:59:33 c55af62d-2da0-48de-f02f-b437146752f7 SPT-8000-DH   Critical

Fault class : fault.chassis.voltage.fail

FRU         : /SYS/PM0
(Part Number: 541-4182-08)
```

```
(Serial Number: 1005LCB-1041HB01A1)

Description : A chassis voltage supply is operating outside of the
allowable range.

Response    : The system will be powered off.  The chassis-wide service
required LED will be illuminated.

Impact      : The system is not usable until repaired.  ILOM will not allow
the system to be powered on until repaired.

Action      : The administrator should review the ILOM event log for
additional information pertaining to this diagnosis.  Please
refer to the Details section of the Knowledge Article for
additional information.
```

Workaround:

Contact your authorized service provider to see if a fix for this issue is available. This issue is fixed in firmware release 8.0.4.b and later. If you have a firmware release earlier than 8.0.4.b, continue with these workaround instructions.

If a fix is not available and you do encounter a power-on failure and an event with one of the PM*x*/PD*x*/V_+12V0 sensors, clear the fault using one of the procedures below, and attempt to power on the system again.

1. Clear the fault using one of the following methods:

   a. To clear the fault using the ILOM CLI:

   ```
   -> set FRU-name clear_fault_action=true
   ```

   For example, to clear a fault on Processor Module 0 (PM0):

   ```
   -> set /SYS/PM0 clear_fault_action=true
   ```

   b. To clear the fault using the ILOM fault management shell:

   ```
   faultmgmtsp> fmadm repair FRU-name
   ```

   For example, to clear a fault on Processor Module 0 (PM0):

   ```
   faultmgmtsp> fmadm repair /SYS/PM0
   ...
   faultmgmtsp> exit->
   ```

2. Attempt to power on the system:

```
-> start /SYS
```

If the system powers on without failure after you clear the fault, you have
encountered CR 7003014, and your system should power on and operate normally.

If the error persists and the system fails to power on, it should be treated as a
genuine failure. Contact your authorized service provider for assistance.

Oracle Solaris OS Issues

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

Static/Dynamic Input/Output Not Currently Supported

The SPARC T3-4 server does not support the SDIO feature of Oracle VM Server for
SPARC without a fix for 6983964. Please do not use the SDIO feature of Oracle VM
Server for SPARC until a fix is available.

See "SDIO Policy Violations Might Cause the Primary Domain To Panic During Boot
(CR 6983964)" on page 29 for more information.

Oracle Solaris OS Has Changed How It Specifies Logical Device Names

The Oracle Solaris OS now uses SAS 2.0 World Wide ID (WWID) in place of the tn
(target ID) field in logical device names. This change will affect how you identify the
target disk when downloading the OS over a network. The following points are key
to understanding the impact of this change:

- When downloading the OS over a network, you should specify the disk in HDD
  slot 0 as the download destination. This is the disk that OBP uses as the default
  boot device.

- Before the change to using WWIDs, this disk would be known to the OS by the
  logical name c0t0d0s0.

- With the change, the device identifier for the default boot device is now referred to as c0tWWIDd0s0, where WWID is a hexadecimal value. This WWID value does not map in a predictable way to the physical ID of the disk in HDD slot 0.

Note – By default, the Oracle Solaris OS is installed on the disk in HDD slot 0. If you want to install the OS on a disk in another slot, specify the disk in the preferred slot number.

To reliably specify HDD slot 0 for the OS download operation, you must determine the correspondence between the WWID value for that disk and its physical location. You can do this by running probe-scsi-all and reading the output.

In the probe-scsi-all output, look for the following disk identifiers:

- SASDeviceName – This is the disk WWID that the Oracle Solaris OS recognizes.
- SASAddress – This is the disk WWID that the OBP references.
- PhyNum – This is the physical HDD slot that the disk occupies. It is also expressed as a hexadecimal value.
- VolumeDeviceName – This number is the RAID volume's WWID that the Oracle Solaris OS recognizes.
- VolumeWWID – This is the RAID volume's WWID that OBP references.

A SPARC T3-4 server has two on-board SAS controllers, each controlling four connected drives. The following example probe-scsi-all output is for a SPARC SPARC T3-4 with eight drives.

```
ok probe-scsi-all
/pci@700/pci@1/pci@0/pci@0/LSI,sas@0
/pci@400/pci@1/pci@0/pci@0/LSI,sas@0
FCode Version 1.00.54, MPT Version 2.00, Firmware Version 5.00.17.00
FCode Version 1.00.54, MPT Version 2.00, Firmware Version 5.00.17.00
Target 9
Target 9
Unit 0   Disk   HITACHI  H103030SCSUN300G A2A8    585937500 Blocks, 300 GB
Unit 0   Disk   HITACHI  H103030SCSUN300G A2A8    585937500 Blocks, 300 GB
SASDeviceName 5000cca00abc5cc8  SASAddress 5000cca00abc5cc9  PhyNum 0
SASDeviceName 5000cca00abcede0  SASAddress 5000cca00abcede1  PhyNum 0
Target a
Target a
Unit 0   Disk   HITACHI  H103030SCSUN300G A2A8    585937500 Blocks, 300 GB
Unit 0   Disk   HITACHI  H103030SCSUN300G A2A8    585937500 Blocks, 300 GB
SASDeviceName 5000cca00abaf620  SASAddress 5000cca00abaf621  PhyNum 1
SASDeviceName 5000cca00abc51a8  SASAddress 5000cca00abc51a9  PhyNum 1
Target b
Target b
```

```
Unit 0    Disk    HITACHI   H103030SCSUN300G A2A8     585937500 Blocks, 300 GB
Unit 0    Disk    HITACHI   H103030SCSUN300G A2A8     585937500 Blocks, 300 GB
SASDeviceName 5000cca00abcec4c   SASAddress 5000cca00abcec4d   PhyNum 2
SASDeviceName 5000cca00abce89c   SASAddress 5000cca00abce89d   PhyNum 2
Target c
Target c
Unit 0    Disk    HITACHI   H103030SCSUN300G A2A8     585937500 Blocks, 300 GB
Unit 0    Disk    HITACHI   H103030SCSUN300G A2A8     585937500 Blocks, 300 GB
SASDeviceName 5000cca00abc5218   SASAddress 5000cca00abc5219   PhyNum 3
SASDeviceName 5000cca00abc5354   SASAddress 5000cca00abc5355   PhyNum 3
/pci@400/pci@1/pci@0/pci@8/pci@0/usb@0,2/hub@2/hub@3/storage@2
{0} ok
Unit 0    Removable Read Only device    AMI     Virtual CDROM   1.00
```

The following probe-scsi-all example output shows a RAID configuration. The RAID volume's VolumeDeviceName is 3c2f959213c8a292.

```
ok probe-scsi-all
/pci@700/pci@1/pci@0/pci@0/LSI,sas@0
FCode Version 1.00.54, MPT Version 2.00, Firmware Version 5.00.17.00

Target 9
Unit 0    Disk    HITACHI   H103030SCSUN300G A2A8     585937500 Blocks, 300 GB
SASDeviceName 5000cca00abc5cc8   SASAddress 5000cca00abc5cc9   PhyNum 0
```

```
Target a
Unit 0   Disk   HITACHI  H103030SCSUN300G A2A8    585937500 Blocks, 300 GB
SASDeviceName 5000cca00abaf620  SASAddress 5000cca00abaf621  PhyNum 1
Target 37e Volume 0
Unit 0   Disk   LSI       Logical Volume  3000    1167966208 Blocks, 597 GB
VolumeDeviceName 3c2f959213c8a292  VolumeWWID 0c2f959213c8a292

/pci@400/pci@1/pci@0/pci@8/pci@0/usb@0,2/hub@2/hub@3/storage@2
Unit 0   Removable Read Only device   AMI      Virtual CDROM   1.00

/pci@400/pci@1/pci@0/pci@0/LSI,sas@0

FCode Version 1.00.54, MPT Version 2.00, Firmware Version 5.00.17.00

Target 9
Unit 0   Disk   HITACHI  H103030SCSUN300G A2A8    585937500 Blocks, 300 GB
SASDeviceName 5000cca00abcede0  SASAddress 5000cca00abcede1  PhyNum 0
Target a
Unit 0   Disk   HITACHI  H103030SCSUN300G A2A8    585937500 Blocks, 300 GB
SASDeviceName 5000cca00abc51a8  SASAddress 5000cca00abc51a9  PhyNum 1
Target b
Unit 0   Disk   HITACHI  H103030SCSUN300G A2A8    585937500 Blocks, 300 GB
SASDeviceName 5000cca00abce89c  SASAddress 5000cca00abce89d  PhyNum 2
Target c
Unit 0   Disk   HITACHI  H103030SCSUN300G A2A8    585937500 Blocks, 300 GB
SASDeviceName 5000cca00abc5354  SASAddress 5000cca00abc5355  PhyNum 3

{0} ok
```

Oracle Solaris Jumpstart Examples

The following Oracle Solaris Jumpstart profile example shows how to use the WWID syntax when installing the OS on a specific disk drive. The SASDeviceName is taken from the previous six-drive configuration listing.

Note – The Oracle Solaris syntax rules require all alpha characters in the WWID be capitalized.

```
#
install_type flash_install
boot_device c0t5000C5001CB4A637d0s0 preserve

archive_location nfs
129.148.94.249:/export/install/media/solaris/builds/s10u9/flar/latest.flar
```

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

The following Oracle Solaris Jumpstart profile example shows how to use the WWID syntax when installing the OS on a RAID volume. The VolumeDeviceName is taken from the previous RAID probe-scsi-all example.

```
#
install_type flash_install
boot_device c0t3CE534E42C02A3C0d0s0 preserve

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

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

Interactive Installation Example

In an interactive install, you will be asked to specify one or more disks as the targets for the OS installation. The purpose of this step is to ensure that enough disk capacity is being provided for the installation. For this step, specify the disk with the WWID value corresponding to the drive on which you want to install the software.

These WWID values are illustrated in the following interactive example, which is based on the same six-disk environment used in the previous examples. The drive selected as the install target is located in HDD slot 0—the default OBP location.

Note – If some other disk is preferred, you can 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
===========================================================================
  [ ]    c0t5000CCA00ABAF620d0                                    286090 MB
 [X] ** c0t5000CCA00ABC51A8d0                                     286090 MB
_____
[ ]     c0t5000CCA00ABC5218d0                                     286090 MB
  Esc-2_Continue    F3_Go Back    F4_Edit    F5_Exit    F6_Help
[ ]     c0t5000CCA00ABC5354d0                                     286090 MB
[ ]     c0t5000CCA00ABC5CC8d0                                     286090 MB
[ ]     c0t5000CCA00ABCE89Cd0                                     286090 MB
[ ]     c0t5000CCA00ABCEC4Cd0                                     286090 MB
[ ]     c0t5000CCA00ABCEDE0d0                                     286090 MB

Total Selected: 286090 MB
Suggested Minimum:   5009 MB
```

The cfgadm -al Command Takes a Long Time to Print Output (CR 6937169)

The cfgadm(1M) command for configuring or unconfiguring hot-plug devices takes a long time to complete. For example, the cfgadm -al command could take more than five minutes before it lists the attachment points for all the hot-plug devices.

Workaround:

Use the hotplug(1M) command to manage PCIe hotplug devices.

Note – The workaround using the hotplug command instead of cfgadm -al only works for PCI devices.

■ Use the hotplug list -l command to list the status of all hot-plug PCIe slots. For example:

```
# hotplug list -l | grep PCI-EM
/pci@400/pci@1/pci@0/pci@4 [PCI-EM2]  (EMPTY)
/pci@400/pci@2/pci@0/pci@1 [PCI-EM0]  (EMPTY)
/pci@400/pci@2/pci@0/pci@2 [PCI-EM1]  (EMPTY)
/pci@400/pci@2/pci@0/pci@3 [PCI-EM3]  (ENABLED)
/pci@500/pci@1/pci@0/pci@1 [PCI-EM8]  (EMPTY)
/pci@500/pci@1/pci@0/pci@2 [PCI-EM10] (ENABLED)
```

```
/pci@500/pci@2/pci@0/pci@2 [PCI-EM9] (ENABLED)
/pci@500/pci@2/pci@0/pci@3 [PCI-EM11] (EMPTY)
/pci@600/pci@1/pci@0/pci@4 [PCI-EM4] (EMPTY)
/pci@600/pci@1/pci@0/pci@5 [PCI-EM6] (ENABLED)
/pci@600/pci@2/pci@0/pci@0 [PCI-EM7] (EMPTY)
/pci@600/pci@2/pci@0/pci@5 [PCI-EM5] (EMPTY)
/pci@700/pci@1/pci@0/pci@4 [PCI-EM14] (EMPTY)
/pci@700/pci@2/pci@0/pci@3 [PCI-EM12] (ENABLED)
/pci@700/pci@2/pci@0/pci@4 [PCI-EM13] (EMPTY)
/pci@700/pci@2/pci@0/pci@5 [PCI-EM15] (EMPTY)
```

■ Use the `hotplug disable` command to disable a PCIe card.

For example, to disable the EM card in PCI-EM3 and confirm that it is no longer enabled:

```
# hotplug disable /pci@400/pci@2/pci@0/pci@3 PCI-EM3
# hotplug list -l | grep PCI-EM3/pci@400/pci@2/pci@0/pci@3 [PCI-
EM3] (POWERED)
```

■ Use the `hotplug poweroff` command to power off a PCIe card.

For example, to power off the EM card in PCI-EM3:

```
# hotplug poweroff /pci@400/pci@2/pci@0/pci@3 PCI-EM3
# hotplug list -l | grep PCI-EM3/pci@400/pci@2/pci@0/pci@3 [PCI-
EM3] (PRESENT)
```

You may now physically remove the EM card.

■ Use the `hotplug list` command to verify that a card is removed.

For example:

```
# hotplug list -l | grep PCI-EM
...
/pci@400/pci@2/pci@0/pci@3 [PCI-EM3] (EMPTY)
...
```

■ Use the `hotplug poweron` command to power on a PCIe card.

For example, to power on the EM card in PCI-EM3 and confirm that it has moved to the POWERED state:

```
# hotplug poweron /pci@400/pci@2/pci@0/pci@3 PCI-EM3
# hotplug list -l | grep PCI-EM3/pci@400/pci@2/pci@0/pci@3 [PCI-
EM3] (POWERED)
```

■ Use the hotplug enable command to enable a PCIe card.

For example, to enable the EM card in PCI-EM3 and confirm that it has moved to the ENABLED state:

```
# hotplug enable /pci@400/pci@2/pci@0/pci@3 PCI-EM3
# hotplug list -l | grep PCI-EM3/pci@400/pci@2/pci@0/pci@3 [PCI-
EM3] (ENABLED)
```

Note – For more information about the hotplug command, see the hotplug(1M) man page.

False nxge Warning Messages (CR 6938085)

During the normal operation of your server, you might see warning messages like the following in the system console:

```
date time machinename nxge: [ID 752849 kern.warning] WARNING: nxge0 :
nxge_hio_init: hypervisor services version 2.0
```

These messages are not true warning messages. These Gigabit Ethernet driver (nxge) messages display the version number of the hypervisor since the driver can operate on multiple hypervisor versions. These messages should labeled as a INFO or NOTICE messages instead of WARNING messages.

Workaround:

You can safely ignore these messages.

Spurious Interrupt Message in System Console (CR 6963563)

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

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

Workaround:

You can safely ignore this message.

The `prtpicl` Command Does Not Display Drive Information (CR 6963594)

On previous systems, the `prtpicl -v` command displayed the state, location, and device paths for system drives under a `disk_discovery` heading. On SPARC T3 systems, the `prtpicl` command no longer displays this drive information.

Workaround:

Use the OpenBoot `probe-scsi-all` command. For example output, see "Oracle Solaris OS Has Changed How It Specifies Logical Device Names" on page 19.

Missing Interrupt Causes USB Hub Hotplug Thread to Hang, Resulting In Process Hangs (CR 6968801)

When running the Oracle VTS software on SPARC T3 series servers, it is possible (although rare) for a Oracle VTS test to hang. If this test process hangs, the hung process might cause other processes and commands to hang, including the fault management configuration tool (`fmadm`) and the print system configuration command (`prtconf`). These hung processes cannot be killed.

Workaround:

Reboot the system. If the problem repeats, contact your service representative for assistance. Avoid running the Oracle VTS software in production environments.

Long Local Console Delays During Login or Logout of Oracle Solaris (CR 6971884)

You might experience long latency times (up to three minutes) when logging in or logging out of the Solaris OS using a local console or local keyboard, mouse and monitor.

Workaround:

Use a network connection to access the system, and comment out the lines containing USB console device names (/dev/usb/*) in the /etc/logindevperm configuration file:

```
# /dev/console   0600 /dev/usb/hid[0-9]+     # hid devices should
have the same permission with conskbd and consms
# /dev/console    0600 /dev/usb/[0-9a-f]+[.][0-9a-f]+/[0-9]+/*
driver=scsa2usb,usb_mid,usbprn,ugen     #libusb/ugen devices
...
```

Spurious Error Message During Initial Oracle Solaris OS Installation (CR 6971896)

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

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

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

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

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

Workaround:

You can safely ignore this message.

SDIO Policy Violations Might Cause the Primary Domain To Panic During Boot (CR 6983964)

If you have a system using Oracle VM Server for SPARC and you have one or more guests configured to use the Static/Direct Input/Output (SDIO) feature, it is possible for the primary domain to panic when the system has just been powered on and the primary domain is booting.

The panic message appears similar to the following:

```
panic[cpu6]/thread=2a101283ca0: Fatal error has occured in: PCIe
fabric.(0x1)(0x43)

000002a101283700 px:px_err_panic+1ac (702cec00, 7bf57000, 43,
2a1012837b0, 1, 0)
%l0-3: 0000009980001602 00000000702cf000 0000000000000000
0000000000000001
%l4-7: 0000000000000000 00000000018af000 0000000000000001
0000000000000000
000002a101283810 px:px_err_fabric_intr+1c0 (6002c594480, 1,
702cf000, 1, 43, 200)
%l0-3: 0000000000000200 0000000000000001 00000000702cf2c0
00000000702cf000
%l4-7: 00000000702cf2b8 00000000702cf000 0000000000000001
000006002c4d4790
000002a101283980 px:px_msiq_intr+1e8 (6002c447bf0, 30002df1908,
7bf495d0, 0, 1, 6002c6f01f0)
%l0-3: 000006002c639220 000006002b561e40 0000030002df1908
0000000000000000
%l4-7: 0000000000000000 0000000003a60000 000002a101283a80
0000000000000030
```

This problem can occur while the primary domain is booting; it does not happen to already running systems.

Workaround:

There is no workaround currently available for this issue. Please contact your authorized service provider for a fix.

On-Board Ethernet Devices Fail to Connect After a Faulty CPU Reconfigures Back to the Host (CR 6984323)

When rebooting the server after a failed or disabled CPU reconfigures back to the host, the onboard Gigabit Ethernet connections will not connect to network. The following example messages will display on the system console:

```
igb0: DL_ATTACH_REQ failed: DL_SYSERR (errno 22)
igb0: DL_BIND_REQ failed: DL_OUTSTATE
igb0: DL_PHYS_ADDR_REQ failed: DL_OUTSTATE
igb0: DL_UNBIND_REQ failed: DL_OUTSTATE
Failed to plumb IPv4 interface(s): igb0
```

Workaround:

Reboot the server two additional times. If the problem persists, contact your service representative for assistance.

`hostconfig` Command Does Not Update CPU Serial Number in the Physical Resource Inventory Machine Descriptor (PRI MD) (CR 6989166)

When a CPU thread faults, the record of that fault is retained when the system reboots, even if the cause of the fault has been corrected. The presence of this record will cause the CPU thread to be off-lined when the system reboots.

Recovery:

Enable the faulted thread(s) explicitly.

Oracle Enterprise Manager Process Hangs and Becomes Unkillable (CR 6994300)

The Oracle Enterprise Manager Java process can hang and become unkillable on the server. When the Enterprise Manager process hangs, it continues to listen on its Web UI port, which makes the process unkillable. This problem has been seen on servers running both the Java SE 5.0 version that is bundled with Oracle Database software and with the most recent downloadable Java SE 6 Update 22 version.

Workaround:

Reboot the system. If the problem repeats, contact your service representative for assistance.

Gigabit Ethernet (`nxge`) Driver Not Loading on Systems With Oracle Solaris 10 10/09 OS and Solaris 10 9/10 Patch Bundle (CR 6995458)

If you installed the Oracle Solaris 10 10/09 OS and the Solaris 10 9/10 Patch Bundle on the server, the 10/1 Gigabit Ethernet (`nxge`) driver will not attach to 10 GbE devices.

Workaround:

Add the following line to the `/etc/driver_aliases` file:

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

Then reboot the server and configure the Gigabit Ethernet devices normally.

Diagnosis Engine (`eft`) is Disabled on Memory Unrecoverable Errors Reportedly Due To Exceeding Module Memory Limit (CR 7000649)

Under certain circumstances, a memory error can cause an internal error in the FMA diagnosis engine that prevents proper diagnosis of the memory error.

This failure might be present if `fmadm faulty` command output includes the fault `FMD-8000-2K` in the list of faulty components.

For example:

```
# fmadm faulty
...
-------------- ------------------------------------ ------------------------
TIME           EVENT-ID                             MSG-ID        SEVERITY
-------------- ------------------------------------ ------------------------
Nov 16 12:02:01 865e378b-27a5-ebf7-c550-e34179d57241 FMD-8000-2K   Minor

Host        : xxxxxxx
Platform    : ORCL,SPARC-T3-4   Chassis_id  :
```

```
Product_sn   :

Fault class : defect.sunos.fmd.module
Affects     : fmd:///module/eft faulted and taken out of service
FRU         : None
faulty

Description : A Solaris Fault Manager component has experienced an error that
required the module to be disabled.  Refer to
http://sun.com/msg/FMD-8000-2K for more information.

Response    : The module has been disabled.  Events destined for the module
will be saved for manual diagnosis.

Impact      : Automated diagnosis and response for subsequent events associated
with this module will not occur.

Action      : Use fmdump -v -u <EVENT-ID> to locate the module.  Use fmadm
reset <module> to reset the module.
```

To confirm that you have encountered CR 70000649, use the `fmdump -eV` command and look for an `ereport.fm.fmd.module` ereport that contains the words "eft's allocation of *XX* bytes exceeds module memory limit" where *XX* is any number.

For example:

```
# fmdump -eV...
Nov 16 2010 12:02:01.052061745 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-T3-4
server-id = xxxxxxxx
(end authority)

mod-name = eft
mod-version = 1.16
(end detector)
```

```
ena = 0x3ddfe7a2c3f07401
msg = eft's allocation of 20 bytes exceeds module memory limit (10485756)
__ttl = 0x1
__tod = 0x4ce2e339 0x31a6631
```

Workaround:

If the `fmdump -eV` output indicates that you have encountered CR 7000649, contact your authorized service provider to see if a fix is available.

Schedule a reboot of the server with diagnostics enabled to allow POST to attempt to find the suspect DIMM.

After halting all of the Solaris sessions on your system, complete the following:

1. Power off the system:

```
-> stop /SYS
```

2. Set keyswitch_state to *Diag:*

```
-> show /SYS keyswitch_state
/SYS
Properties:
keyswitch_state = Normal

-> set /SYS keyswitch_state=diag
Set 'keyswitch_state' to 'diag'
-> show /SYS keyswitch_state
Properties:
/SYS
keyswitch_state = Diag
```

Note – This option overrides previously set values of diagnostic properties.

---

3. Power on the server:

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

4. After the power-on sequence is complete, enter the ILOM Fault Management shell and use the ILOM `show faulty` command to look for any faulty DIMMs.

    a. Start the fault management shell:

    ```
    -> start /SP/faultmgmt/shell
    Are you sure you want to start /SP/faultmgmt/shell (y/n)? y
    ```

    b. Display the list of faulty components:

    ```
    faultmgmtsp> fmadm faulty
    ```

5. Replace any faulty DIMMs that are reported. If no faulty DIMMs are reported, contact your authorized service provider for further assistance.

Firmware Issues

This section describes issues related to the system firmware.

Intermittent `WARNING: ios#, peu# Link Width x8 Link Speed GEN1` Messages (CR 6958263)

When your server powers on to the OpenBoot PROM (OBP), you might see warning messages like the following in the system console:

```
WARNING: ios0, peu0 Link Width x8 Link Speed GEN1.
```

Workaround:

You can safely ignore these messages.

`sas2flash` Utility Fails When Six or More Sun Storage 6 Gb SAS RAID PCIe HBAs, External, Are Installed (CR 6983246)

The LSI Corporation `sas2flash` utility fails when there are six or more Sun Storage 6 Gb SAS RAID PCIe HBAs, External, installed in the system. For example, when attempting to list the HBAs using the `sas2flash -listall` command, you might see the following error message:

```
6   SAS2008(??)         ERROR: Failed to Upload Image!
-----------  ---------- ERROR: Failed to Upload Image!
```

Workaround:

Install five or less Sun Storage 6 Gb SAS RAID PCIe HBAs, External, in the system.

Adding a PCIe End-Point Device to a Guest Domain Might Result in a Hypervisor Abort and Shutdown (CR 6999227)

Your Oracle VM Server for SPARC 2.0 system might encounter one of the following problems if you reboot the root domain after adding a PCIe end-point device to a guest domain:

- Experience a hypervisor abort and shut down
- Fail to return to the OpenBoot PROM
- Fail to return to the Oracle Solaris OS

These problems only occur if you did not start the guest domain after adding the PCIe device. By not starting the guest domain, previously configured virtual interfaces might not have been properly cleaned up.

Workaround:

If these problems occur, restart the system. To avoid these problems, start a guest domain after adding an I/O resource to it. If you do not want the domain to be active at this time, stop the guest domain after it has been started.

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

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

After a cold reset, the server might add one day to the Oracle Solaris OS date and time. This possible date change will only occur on the first cold reset after 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:

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.

Performing `stop /SYS` with `HOST_COOLDOWN` Policy Enabled Generates a Critical Voltage Fault

By default, the `HOST_COOLDOWN` policy is disabled in the SP policy list, as shown by the following ILOM command:

```
-> ls /SP/policy
/SP/policy
Targets:
Properties:
HOST_AUTO_POWER_ON = disabled
HOST_COOLDOWN = disabled
HOST_LAST_POWER_STATE = disabled
HOST_POWER_ON_DELAY = disabled
PARALLEL_BOOT = enabled

Commands:
cd
set
show

```

If you change this value to *enabled*, you will encounter a `fault.chassis.voltage.fail` fault when you power off your system. This fault prevents you from powering your system on again until it is cleared.

This fault is in the event list in the ILOM command-line interface. For example:

```
-> show /SP/logs/event/list
24756  Wed Nov 24 11:23:36 2010  Fault     Fault     critical
Fault detected at time = Wed Nov 24 11:23:36 2010. The suspect component:
/SYS/MB has fault.chassis.voltage.fail with probability=100. Refer to ht
tp://www.sun.com/msg/SPT-8000-DH for details.
24755  Wed Nov 24 11:23:36 2010  System    Log       minor
Host: Solaris powering down
24754  Wed Nov 24 11:23:24 2010  System    Log       minor
Host: Host stopped

```

Workaround:

1. Disable the `HOST_COOLDOWN` policy:

```
-> set /SP/policy HOST_COOLDOWN=disabled
Set 'HOST_COOLDOWN' to 'disabled'
```

2. Clear the fault:

```
-> set /SYS/MB clear_fault_action=true
Are you sure you want to clear /SYS/MB (y/n)? ySet
'clear_fault_action' to 'true'
```

3. Restart the system:

```
-> start /SYS
```