Oracle® Integrated Lights Out Manager (ILOM) 3.0

Supplement for Sun Fire X4170 M2 and X4270 M2 Servers

Part No. 821-0489-13
January 2011, Revision A

Copyright © 2010, 2011, 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 software documentation that is delivered to the U.S. Government or anyone licensing it on behalf of the U.S. Government, the following notice is applicable:

U.S. GOVERNMENT RIGHTS. Programs, software, databases, and related documentation and technical data delivered to U.S. Government customers are "commercial computer software" or "commercial technical data" pursuant to the applicable Federal Acquisition Regulation and agency-specific supplemental regulations. As such, the use, duplication, disclosure, modification, and adaptation shall be subject to the restrictions and license terms set forth in the applicable Government contract, and, to the extent applicable by the terms of the Government contract, the additional rights set forth in FAR 52.227-19, Commercial Computer Software License (December 2007). Oracle America, Inc., 500 Oracle Parkway, Redwood City, CA 94065.

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 which 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.

AMD, Opteron, the AMD logo, and the AMD Opteron logo are trademarks or registered trademarks of Advanced Micro Devices. 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. UNIX is a registered trademark licensed through X/Open Company, Ltd.

This software or hardware and documentation may provide access to or information on 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. 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.

Copyright © 2010, 2011, 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 disposition de votre contrat de licence ou de la loi, vous ne pouvez pas copier, reproduire, traduire, diffuser, modifier, breveter, 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 concédé sous licence au Gouvernement des Etats-Unis, ou à toute entité qui délivre la licence de ce logiciel ou l'utilise pour le compte du Gouvernement des Etats-Unis, la notice suivante s'applique :

U.S. GOVERNMENT RIGHTS. Programs, software, databases, and related documentation and technical data delivered to U.S. Government customers are "commercial computer software" or "commercial technical data" pursuant to the applicable Federal Acquisition Regulation and agency-specific supplemental regulations. As such, the use, duplication, disclosure, modification, and adaptation shall be subject to the restrictions and license terms set forth in the applicable Government contract, and, to the extent applicable by the terms of the Government contract, the additional rights set forth in FAR 52.227-19, Commercial Computer Software License (December 2007). Oracle America, Inc., 500 Oracle Parkway, Redwood City, CA 94065.

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 des dommages corporels. Si vous utilisez ce logiciel ou 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 ce type d'applications.

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.

AMD, Opteron, le logo AMD et le logo AMD Opteron sont des marques ou des marques déposées d'Advanced Micro Devices. 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. UNIX est une marque déposée concédée sous licence par X/Open Company, Ltd.

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. 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.

Please
Recycle

Contents

Using This Documentation v

1. Oracle ILOM 3.0 Feature Sets 1

Oracle ILOM Overview 1

Oracle ILOM 3.0 Common Feature Set and Server Specific Features 1

Oracle ILOM 3.0 Common Feature Set Documentation Collection 2

2. Oracle ILOM Platform Features for the Sun Fire X4170 M2 and X4270 M2 Servers 5

Supported Server Firmware 6

Hardware Management Pack for Single Server Management 7

View Support Matrix and Download Hardware Management Pack Software 8

Hardware Management Pack Documentation 9

Oracle ILOM Sideband Management 9

Special Considerations for Sideband Management 10

- Configure Sideband Management Using the Web Interface 11
- Configure Sideband Management Using the CLI 12
- Configure Sideband Management Using the Host BIOS Setup Utility 13

Switch Serial Port Output Between SP and Host Console 16

- Switch Serial Port Output Using the Web Interface 17

- Switch Serial Port Output Using the CLI 18

FRU Top-Level Indicator Auto-Update 18

Monitoring Flash-Based PCIe Card Power-On Hours 19

Clearing Server Faults 19

- Clear DIMM Fault Using the Oracle ILOM CLI 20
- Clear PCIe Riser Fault Using the Oracle ILOM CLI 21
- Clear PCIe Card Fault Using the Oracle ILOM CLI 21
- Clear CPU Fault Using the Oracle ILOM CLI 22
- Clear Solaris-Based CPU Fault Using the Solaris Operating System 23
- Clear Motherboard Fault 23

Server Chassis Intrusion Sensors 24

How the `/SYS/INTSW` Sensor Works 24

How the `/SYS/SP/SP_NEEDS_REBOOT` Sensor Works 25

Sensors and Indicators Reference Information 26

Chassis Sensors and Indicators 27

Cooling Unit Sensors and Indicators 29

Disk Sensors and Indicators 30

Memory Device Sensors and Indicators 31

Power Supply Sensors and Indicators 31

Processor Sensors and Indicators 32

System Board Sensors and Indicators 32

Temperature Sensors and Indicators 33

SNMP and PET Message Reference Information 34

SNMP Traps 34

PET Event Messages 45

Index 53

Using This Documentation

This supplement contains information about the Integrated Lights Out Manager (ILOM) 3.0 that is specific to the Sun Fire X4170 M2 and X4270 M2 Servers from Oracle®.

For a complete discussion of Oracle ILOM 3.0 firmware and its capabilities, along with user procedures, see the Oracle ILOM 3.0 Documentation Collection listed in "Related Documentation" on page vi. You can also access the Oracle ILOM 3.0 Documentation Collection at:

`http://www.oracle.com/documentation`

Note – The Oracle Integrated Lights Out Manager formerly was called Sun Integrated Lights Out Manager.

This preface contains the following topics:

- "Product Information" on page vi
- "Related Documentation" on page vi
- "Documentation, Support, and Training" on page viii
- "Typographic Conventions" on page viii

Product Information

For information about the Sun Fire X4170 M2 and X4270 M2 Servers, go to the following web sites:

- http://www.oracle.com/goto/x4170m2
- http://www.oracle.com/goto/x4270m2

At that site, you can find links and navigate to the following information and downloads:

- Product information and specifications
- Supported operating systems
- Software and firmware downloads

Related Documentation

The related documents listed in the following table are available online at:

- http://www.oracle.com/documentation

Title	Content	Format
Sun Fire X4170 M2 and X4270 M2 Servers Product Notes	Late-breaking information about the server	PDF HTML
Sun Fire X4170 M2 and X4270 M2 Servers Getting Started Guide	Basic installation information for setting up the server	PDF Print
Sun Fire X4170 M2 and X4270 M2 Servers Installation Guide	Detailed installation information for setting up the server	PDF HTML
Sun Fire X4170 M2 and X4270 M2 Servers Installation Guide for Linux, Virtual Machine Software, and Oracle Solaris Operating Systems	Installation instructions for the Oracle Linux, Red Hat Linux, SUSE Linux, Oracle VM, VMware, and Oracle Solaris operating systems	PDF HTML
Sun Fire X4170 M2 and X4270 M2 Servers Installation Guide for Windows Operating Systems	Installation instructions for the Windows Server operating systems	PDF HTML

Title	Content	Format
Sun Fire X4170 M2 Server Service Manual	Information and procedures for maintaining and upgrading the Sun Fire X4170 M2 Server	PDF HTML
Sun Fire X4270 M2 Server Service Manual	Information and procedures for maintaining and upgrading the Sun Fire X4270 M2 Server	PDF HTML
Oracle Hardware Installation Assistant 2.5 User's Guide for x86 Servers (The Sun Installation Assistant is now called the Oracle Hardware Installation Assistant.)	Instructions for using Oracle's Sun Installation Assistant to install the Windows and Linux operating systems	PDF HTML
Sun x64 Servers Diagnostics Guide	Information for diagnosing and troubleshooting the server	PDF HTML
Sun Server CLI and IPMItool 2.0 User's Guide	Instructions for using the Sun Server Hardware Management Pack applications and utilities	PDF HTML
Sun Server Hardware Management Pack 2.0 User's Guide	Instructions for installing the Sun Server Hardware Management Pack software	PDF HTML
Sun Server Management Agent 2.0 User's Guide	Instructions for using the Sun Server Management Agent software	PDF HTML
Oracle Integrated Lights Out Manager (ILOM) 3.0 Documentation Collection (formerly called Sun Integrated Lights Out Manager Documentation Collection)	Oracle ILOM features and tasks that are common to servers and server modules that support Oracle ILOM 3.0	PDF HTML
Oracle Integrated Lights Out Manager (ILOM) 3.0 Supplement for Sun Fire X4170 M2 and X4270 M2 Servers	Oracle ILOM 3.0 information that is specific to the Sun Fire X4170 M2 and X4270 M2 Servers	PDF HTML
Sun Fire X4170 M2 and X4270 M2 Servers Safety and Compliance Guide	Hardware safety and compliance information for the server	PDF
Sun Fire X4170 M2 and X4270 M2 Servers Safety and Compliance Guide	Hardware safety and compliance information for the server	PDF
Sun Flash Accelerator F20 PCIe Card User's Guide	Installation, configuration, and maintenance information for this server PCIe card	PDF HTML
Important Safety Information for Sun Hardware Systems	Multilingual hardware safety and compliance information for all Sun hardware system	Print

Translated versions of some of these documents are available at the web site URLs listed above this table. English documentation is revised more frequently and might be more up-to-date than the translated documentation.

Documentation, Support, and Training

These web sites provide additional resources:

- Documentation `http://www.oracle.com/documentation`
- Support `https://support.oracle.com`
- Training `https://education.oracle.com`

Typographic Conventions

Typeface*	Meaning	Examples
`AaBbCc123`	The names of commands, files, and directories; on-screen computer output	Edit your `.login` file. Use `ls -a` to list all files. `% You have mail.`
`AaBbCc123`	What you type, when contrasted with on-screen computer output	`% su` `Password:`
AaBbCc123	Book titles, new words or terms, words to be emphasized. Replace command-line variables with real names or values.	Read Chapter 6 in the *User's Guide*. These are called *class* options. You *must* be superuser to do this. To delete a file, enter `rm` *filename*.

* The settings on your browser might differ from these settings.

CHAPTER 1

Oracle ILOM 3.0 Feature Sets

This chapter provides a brief overview about Oracle ILOM, as well as defines the purpose of Oracle ILOM's common and platform features offered in Oracle ILOM 3.0. The following topics are discussed in this chapter:

- "Oracle ILOM Overview" on page 1
  - "Oracle ILOM 3.0 Common Feature Set and Server Specific Features" on page 1
  - "Oracle ILOM 3.0 Common Feature Set Documentation Collection" on page 2

Oracle ILOM Overview

Oracle Integrated Lights Out Manager (ILOM) is system management firmware that is preinstalled on all of Oracle's x86-based servers and some SPARC servers. Oracle ILOM enables you to actively manage and monitor components installed in your server. Oracle ILOM provides a browser-based interface and a command-line interface, as well as SNMP and IPMI interfaces.

Oracle ILOM 3.0 Common Feature Set and Server Specific Features

Oracle's Sun Fire X4170 M2 and X4270 M2 Servers support the entire Oracle ILOM feature set provided in Oracle ILOM 3.0. In addition, the servers support Oracle ILOM features that are specific to the Sun Fire X4170 M2 and X4270 M2 Servers.

For details on how to use the features that are common to all server platforms, refer to the Oracle Integrated Lights Out Manager (ILOM) 3.0 Documentation Collection (formerly called Sun Integrated Lights Out Manager 3.0 Documentation Collection).

For a detailed description of the guides comprising the Oracle ILOM 3.0 Documentation Collection, see "Oracle ILOM 3.0 Common Feature Set Documentation Collection" on page 2.

For details on the Oracle ILOM features that are specific to the Sun Fire X4170 M2 and X4270 M2 Servers, see Chapter 2.

Oracle ILOM 3.0 Common Feature Set Documentation Collection

TABLE 1-1 identifies the guides in the Oracle ILOM 3.0 Documentation Collection. Refer to these guides for information about using Oracle ILOM features that are common to all server platforms.

TABLE 1-1 Oracle ILOM 3.0 Common Feature Set Documentation Collection

Title	Content
Oracle Integrated Lights Out Manager (ILOM) 3.0 Feature Updates and Release Notes	For each point release after Oracle ILOM 3.0, this guide provides information about: • New Oracle ILOM 3.0.x features • Known issues and workarounds • Fixed issues
Oracle Integrated Lights Out Manager (ILOM) 3.0 Getting Started Guide	This guide provides easy-to-use setup and configuration procedures that enable you to start using Oracle ILOM.
Oracle Integrated Lights Out Manager (ILOM) 3.0 Concepts Guide	This guide provides conceptual information for all common features available in Oracle ILOM 3.0.
Oracle Integrated Lights Out Manager (ILOM) 3.0 Web Interface Procedures Guide	This guide provides procedural information for all common web-based features available in Oracle ILOM 3.0.

TABLE 1-1 Oracle ILOM 3.0 Common Feature Set Documentation Collection *(Continued)*

Title	Content
Oracle Integrated Lights Out Manager (ILOM) 3.0 CLI Procedures Guide	This guide provides procedural information for all common command-line features available in Oracle ILOM 3.0.
Oracle Integrated Lights Out Manager (ILOM) 3.0 Management Protocols Reference Guide	This guide provides information about accessing Oracle ILOM functions when using management protocols such as: • Simple Network Management Protocol (SNMP) • Intelligent Platform Management Interface (IPMI) • Web Service Management (WS-Man) and Common Information Model (CIM)
Oracle Integrated Lights Out Manager (ILOM) CMM Administration Guide for Sun Blade 6000 and Sun Blade 6048 Modular Systems	This guide provides instructions for managing the Sun Blade Modular System Chassis using a modified version of the Oracle Integrated Lights Out Manager (ILOM) called the chassis monitoring module (CMM).

You can view and download the guides in the Oracle ILOM 3.0 Documentation Collection at:

http://www.oracle.com/documentation

CHAPTER 2

Oracle ILOM Platform Features for the Sun Fire X4170 M2 and X4270 M2 Servers

Oracle ILOM 3.0 operates on many platforms, supporting features that are common to all platforms. Some Oracle ILOM 3.0 features belong to a subset of platforms and not to all. This chapter describes the features that are specific to the Sun Fire X4170 M2 and X4270 M2 Servers.

For detailed information about Oracle ILOM features that are common to all server platforms, see the Oracle Integrated Lights Out Manager (ILOM) 3.0 Documentation Collection (formerly called Sun Integrated Lights Out Manager 3.0 Documentation Collection), as described in "Oracle ILOM 3.0 Common Feature Set Documentation Collection" on page 2.

Oracle ILOM features discussed in this chapter, which are specific to the Sun Fire X4170 M2 and X4270 M2 Servers, are as follows:

- "Supported Server Firmware" on page 6
- "Hardware Management Pack for Single Server Management" on page 7
- "Oracle ILOM Sideband Management" on page 9
- "Switch Serial Port Output Between SP and Host Console" on page 16
- "FRU Top-Level Indicator Auto-Update" on page 18
- "Monitoring Flash-Based PCIe Card Power-On Hours" on page 19
- "Clearing Server Faults" on page 19
- "Server Chassis Intrusion Sensors" on page 24
- "Sensors and Indicators Reference Information" on page 26
- "SNMP and PET Message Reference Information" on page 34

Supported Server Firmware

TABLE 2-1 identifies the Oracle ILOM firmware version that is supported on the servers.

TABLE 2-1 Supported Oracle ILOM Firmware

Oracle ILOM SP Version	Applicable Hardware
3.0.14.11*	Sun Fire X4170 M2 and X4270 M2 Servers

* For up-to-date Oracle ILOM version information, see the *Sun Fire X4170 M2 and X4270 M2 Servers Product Notes*

For information about how to update the firmware on your server, refer to the Oracle ILOM 3.0 Common Feature Set Documentation Collection at:

http://www.oracle.com/documentation

Hardware Management Pack for Single Server Management

The Sun Server Hardware Management Pack (Hardware Management Pack) from Oracle provides tools to help you manage and configure your Oracle servers from the host operating system. To use these tools, you must install the Hardware Management Pack software on your server. After installing the Hardware Management Pack software, you will be able to perform the following server management tasks described in TABLE 2-2.

TABLE 2-2 Hardware Management Pack – Server Management Tasks

Server Management Task From Host OS*	Hardware Management Pack Implementation	Tool
Monitor Oracle hardware with host IP address	Use the Hardware Management Agent and the associated Simple Network Management Protocol (SNMP) Plugins at the operating-system level to enable in-band monitoring of your Oracle hardware. This in-band monitoring functionality enables you to use your host operating system IP address to monitor your Oracle servers without the need of connecting the Oracle ILOM management port to your network.	Host OS-level management tool
Monitor storage devices, including RAID arrays	Use the Server Storage Management Agent at the operating-system level to enable in-band monitoring of the storage devices configured on your Oracle servers. The Server Storage Management Agent provides an operating-system daemon that gathers information about your server's storage devices such as hard disk drives (HDDs) and RAID arrays, and sends this information to the Oracle ILOM service processor. The Storage Monitoring features in Oracle ILOM enable you to view and monitor the information provided by the Server Storage Management Agent. You can access the Storage Monitoring features in Oracle ILOM from the command-line interface (CLI).	Oracle ILOM 3.0 CLI Storage Monitoring features
Configure BIOS CMOS settings, device boot order, and some SP settings	Use the biosconfig CLI tool from the host operating system to configure your Oracle x86 servers BIOS CMOS settings, device boot order, and some service processor (SP) settings.	Host OS-level biosconfig CLI

*Supported host operating systems include: Oracle Solaris, Oracle Linux, Red Hat Linux, SUSE Linux, Windows, Oracle VM, and VMware

TABLE 2-2 Hardware Management Pack – Server Management Tasks *(Continued)*

Server Management Task From Host OS*	Hardware Management Pack Implementation	Tool
Query, update, and validate firmware versions on supported SAS storage devices	Use the fwupdate CLI tool from the host operating system to query, update, and validate firmware versions on supported storage devices such as SAS host bus adapters (HBAs), embedded SAS storage controllers, LSI SAS storage expanders, and disk drives (spinning media and flash drives).	Host OS-level fwupdate CLI
Restore, set, and view Oracle ILOM configuration settings	Use the Oracle ILOMconfig CLI tool from the host operating system to restore Oracle ILOM configuration settings, as well as to view and set Oracle ILOM properties that are associated with network management, clock configuration, and user management.	Host OS-level ilomconfig CLI
View or create RAID volumes on storage drives	Use the raidconfig CLI tool from the host operating system to view and create RAID volumes on storage drives that are attached to RAID controllers, including storage arrays.	Host OS-level raidconfig CLI
Use IPMItool to access and manage Oracle servers	Use the open source command-line IPMItool from the host operating system to access and manage your Oracle servers via the IPMI protocol.	Host OS-level command-line IMPItool

*Supported host operating systems include: Oracle Solaris, Oracle Linux, Red Hat Linux, SUSE Linux, Windows, Oracle VM, and VMware

View Support Matrix and Download Hardware Management Pack Software

Refer to the following table to view the support matrix for the Hardware Management Pack software or to download the Hardware Management Pack software.

Description	URL
View operating system and hardware support for the Hardware Management Pack	http://www.oracle.com/us/support/044752.html
Download the Hardware Management Pack software	http://www.oracle.com/us/support/044752.html

Hardware Management Pack Documentation

For instructions for installing the management pack software or using its components, see the following Hardware Management Pack documentation:

- *Sun Server Hardware Management Pack 2.0 User's Guide*
- *Sun Server Management Agent 2.0 User's Guide*
- *Sun Server CLI and IPMItool 2.0 User's Guide*

For additional details about how to use the Storage Monitoring features in Oracle ILOM, see Chapter 4 of the *Oracle Integrated Lights Out Manager (ILOM) 3.0 Feature Updates and Release Notes*.

For additional details about accessing and managing your server via SNMP or IPMI, see the *Oracle Integrated Lights Out Manager (ILOM) 3.0 Management Protocols Reference Guide*.

Oracle ILOM Sideband Management

By default, you connect to the server's service processor (SP) using the out-of-band network management port (NET MGT). The Oracle ILOM sideband management feature enables you to select either the NET MGT port or one of the server's Gigabit Ethernet ports (NET 0, 1, 2, 3), which are in-band ports, to send and receive Oracle ILOM commands to and from the server SP. In-band ports are also called sideband ports.

The advantage of using a sideband management port to manage the server's SP is that one fewer cable connection and one fewer network switch port is needed. In configurations where a great number of servers are being managed, such as data centers, sideband management can represent a significant savings in hardware and network utilization.

You can configure sideband management using either the web interface, the command-line interface (CLI), the BIOS, or IPMI. For special considerations and configuration instructions, see the following sections:

- "Special Considerations for Sideband Management" on page 10
- "Configure Sideband Management Using the Web Interface" on page 11
- "Configure Sideband Management Using the CLI" on page 12
- "Configure Sideband Management Using the Host BIOS Setup Utility" on page 13

Special Considerations for Sideband Management

When sideband management is enabled in Oracle ILOM, the following conditions might occur:

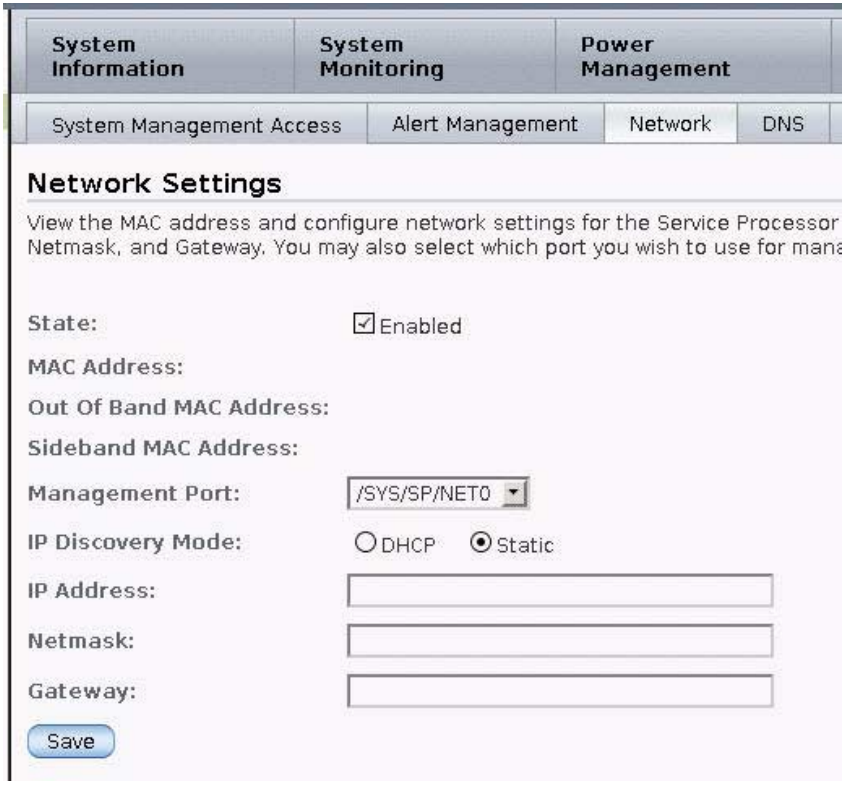
- Connectivity to the server SP might be lost when the SP management port configuration is changed while you are connected to the SP using a network connection, such as SSH, web, or Oracle ILOM Remote Console.
- In-chip connectivity between the SP and the host operating system might not be supported by the on-board host Gigabit Ethernet controller. If this condition occurs, use a different port or route to transmit traffic between the source and destination targets instead of using L2 bridging/switching.
- Server host power cycles might cause a brief interruption of network connectivity for server Gigabit Ethernet ports (NET 0, 1, 2, 3) that are configured for sideband management. If this condition occurs, configure the adjacent switch/bridge ports as host ports.

Note – If the ports are configured as switch ports and participate in the Spanning Tree Protocol (STP), you might experience longer outages due to spanning tree recalculation.

▼ Configure Sideband Management Using the Web Interface

1. **Log in to the Oracle ILOM web interface.**
2. **Select Configuration --> Network.**

   The Network Settings page appears.



3. **In the Network Settings page, do the following:**

   a. **Select DHCP to acquire the IP address automatically or specify the appropriate IP address.**

   b. **To select a sideband management port, click the Management Port drop-down list and select the desired management port.**

      The drop-down list enables you to change to any one of the four Gigabit Ethernet ports, `/SYS/MB/NET`*n*, where *n* is 0 to 3. The SP NET MGT port, `/SYS/SP/NET0`, is the default.

   c. **Click Save for the changes to take effect.**

▼ Configure Sideband Management Using the CLI

1. **Log in to Oracle ILOM using the CLI.**

Note – Using a serial connection for this procedure eliminates the possibility of losing connectivity during sideband management configuration changes.

---

2. **If you logged in using the serial port, you can assign a static IP address.**

   For instructions, see the information about assigning an IP address in the *Sun Fire X4170 M2 and X4270 M2 Servers Installation Guide*.

3. **To show the current port settings, type:**

   -> **show /SP/network**

   The network properties appear. For example:

```
/SP/network
    Targets:
    Properties:
        commitpending = (Cannot show property)
        dhcp_server_ip = none
        ipaddress = xx.xx.xx.xx
        ipdiscovery = static
        ipgateway = xx.xx.xx.xx
        ipnetmask = xx.xx.xx.xx
        macaddress = 11.11.11.11.11.86
        managementport = /SYS/SP/NET0
        outofbandmacaddress = 11.11.11.11.11.86
        pendingipaddress = xx.xx.xx.xx
        pendingipdiscovery = static
        pendingipgateway =  xx.xx.xx.xx
        pendingipnetmask =  xx.xx.xx.xx
        pendingmanagementport = /SYS/SP/NET0
        sidebandmacaddress = 11.11.11.11.11.87
        state = enabled
```

   In the above output the current active `macaddress` is the same as the SP's `outofbandmacaddress` and the current active `managementport` is set to the default (`/SYS/SP/NET0`).

4. **To set the SP management port to a sideband port, type the following commands:**

   -> **set /SP/network pendingmanagementport=/SYS/MB/NET***n*

   Where *n* equals 0, 1, 2, or 3.

   -> **set commitpending=true**

5. **To view the change, type:**

   -> **show /SP/network**

   The network properties appear and show that the change has taken effect. For example:

```
/SP/network
    Targets:
    Properties:
        commitpending = (Cannot show property)
        dhcp_server_ip = none
        ipaddress = xx.xx.xx.xx
        ipdiscovery = static
        ipgateway = xx.xx.xx.xx
        ipnetmask = xx.xx.xx.xx
        macaddress = 11.11.11.11.11.87
        managementport = /SYS/MB/NETn
        outofbandmacaddress = 11.11.11.11.11.86
        pendingipaddress = xx.xx.xx.xx
        pendingipdiscovery = static
        pendingipgateway =  xx.xx.xx.xx
        pendingipnetmask =  xx.xx.xx.xx
        pendingmanagementport = /SYS/MB/NETn
        sidebandmacaddress = 11.11.11.11.11.87
        state = enabled
```

   In the above output the `macaddress` matches the `sidebandmacaddress`, and the `managementport` matches the `pendingmanagementport`.

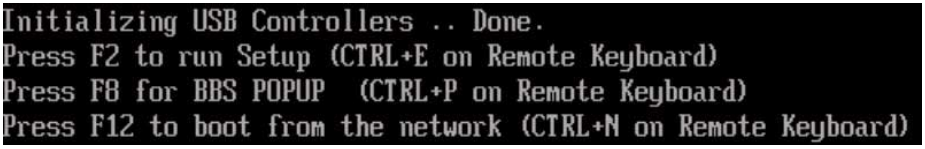
▼ Configure Sideband Management Using the Host BIOS Setup Utility

You can access the BIOS Setup Utility screens from the following interfaces:

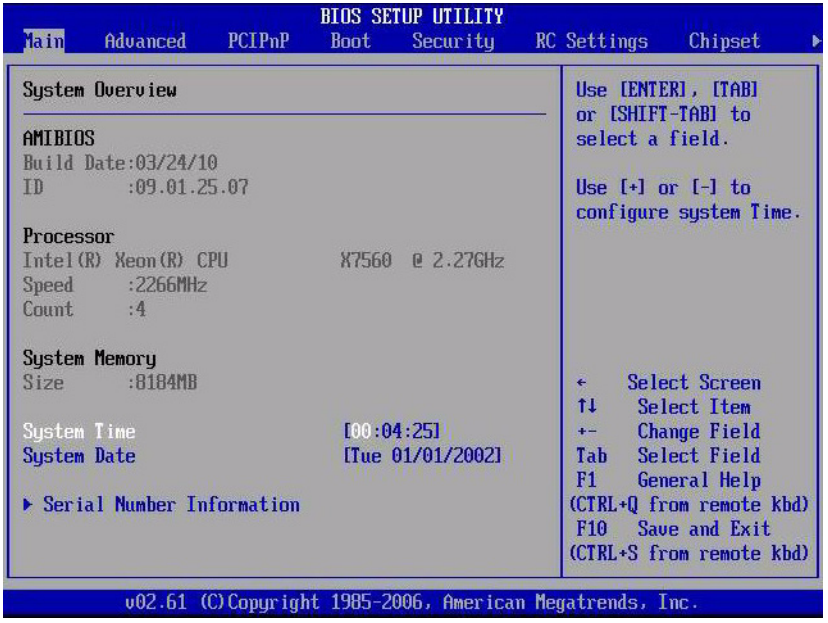
- Use a USB keyboard, mouse, and VGA monitor connected directly to the server.
- Use a terminal (or terminal emulator connected to a computer) through the serial port on the back panel of the server.
- Connect to the server using the Oracle ILOM Remote Console.

To configure sideband management using the host BIOS Setup Utility, perform the following steps:

1. **Power on or power cycle the server.**
2. **To enter the BIOS Setup Utility, press the F2 key while the system is performing the power-on self-test (POST).**

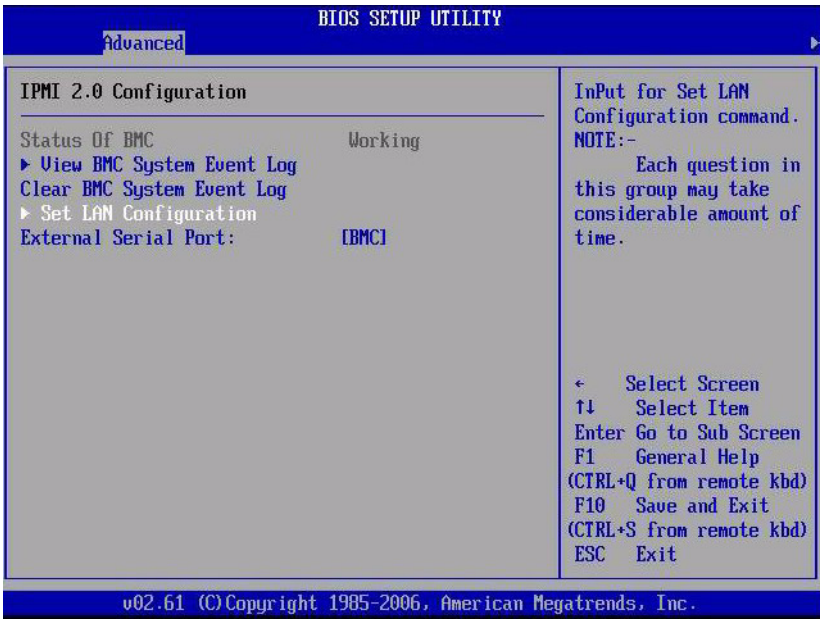


When BIOS is started, the main BIOS Setup Utility top-level screen appears. This screen provides seven menu options across the top of the screen.



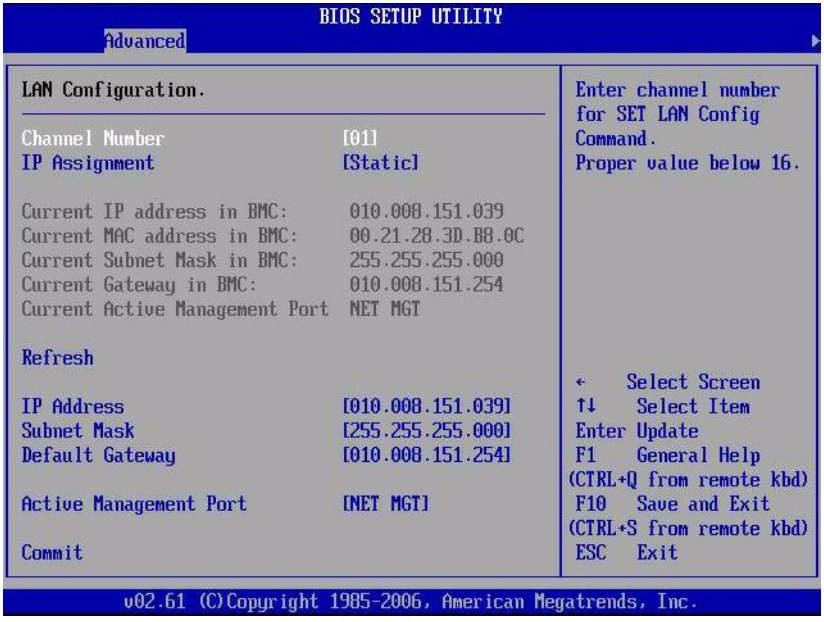
3. **In the main screen, select Advanced --> IPMI Configuration.**

   The IPMI 2.0 Configuration screen appears.



4. **In the IPMI 2.0 Configuration screen, select the Set LAN Configuration option.**

   The LAN Configuration screen appears.



5. **In the LAN Configuration screen, do the following:**

a. **Use the left and right arrow keys to select the IP Assignment option and set it to DHCP.**

b. **Use the left and right arrow keys to select the Active Management Port option and set the port to a sideband management port (NET0, NET1, NET2, NET3).**

   The NET MGT port is the default.

c. **Select Commit for the change to take effect.**

Switch Serial Port Output Between SP and Host Console

You can switch the serial port output of the Sun Fire X4170 M2 and X4270 M2 Servers between the SP console (SER MGT) and the host console (COM1). By default, the SP console is connected to the system serial port. This feature is beneficial for Windows kernel debugging, as it enables you to view non-ASCII character traffic from the host console.

You can switch serial port output using either the Oracle ILOM web interface or the Oracle ILOM command-line interface (CLI). For instructions, see the following sections:

- "Switch Serial Port Output Using the Web Interface" on page 17
- "Switch Serial Port Output Using the CLI" on page 18

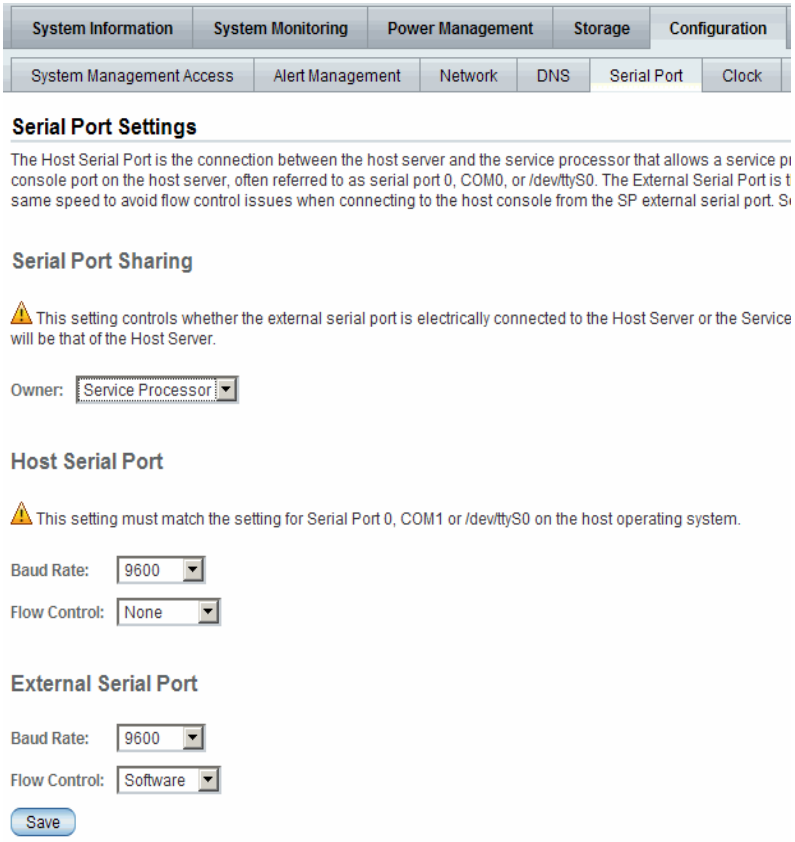
Caution – You should set up the network on the SP before attempting to switch the serial port owner to the host server. If a network is not set up, and you switch the serial port owner to the host server, you will be unable to connect using the CLI or web interface to change the serial port owner back to the SP. To change the serial port owner back to the SP, you must use the Oracle ILOM Preboot Menu to restore access to the serial port over the network. For instructions, refer to "Restoring Access to the Serial Console" in the *Sun Fire X4170 M2 Server Service Manual* or the *Sun Fire X4270 M2 Server Service Manual*.

▼ Switch Serial Port Output Using the Web Interface

1. **Log in to the Oracle ILOM web interface.**

2. **Select Configuration --> Serial Port.**

   The Serial Port Settings page appears.



3. **To select a serial port owner, click the Owner drop-down list and select the desired serial port owner.**

   The drop-down list enables you to select either `Service Processor` or `Host Server`.

   By default, `Service Processor` is selected.

4. **Click Save for your change to take effect.**

▼ Switch Serial Port Output Using the CLI

1. **Log in to the Oracle ILOM CLI.**

2. **To set the serial port owner, type:**

   -> **set /SP/serial/portsharing/owner=host**

   By default, `owner=SP`.

FRU Top-Level Indicator Auto-Update

Oracle ILOM includes a top-level indicator (TLI) auto-update feature that ensures that the TLI stored in the Sun Fire X4270 M2 Server's field-replaceable units (FRUs) is always correct. The TLI, which is unique to every server, is used to track the server's service entitlement and warranty coverage. When a server requires service, the server's TLI is used to verify that the server's warranty has not expired.

To ensure that Oracle ILOM can maintain the accuracy of the server's TLI, the TLI is stored in the FRUID (field-replaceable unit identifiers) of the following three server components:

- Power distribution board (PDB)
- Motherboard (MB)
- Disk Backplane (DBP)

The following table lists the TLI identifiers contained in each component FRUID.

Identifier	Example Content
PPN (product part number)	0123456789
PSN (product serial number)	123-4567-89
Product Name	SUN FIRE X4270 M2 SERVER
WWN (world-wide name)	508002004fcafb62

Whenever one of the server's FRUs that contains the TLI is removed and a replacement module is installed, the TLI of the replacement module is programmed by Oracle ILOM to contained the same TLI as the other two modules.

Note – The TLI auto update feature is not supported on the Sun Fire X4170 M2 Server. For Sun Fire X4170 M2 Servers, authorized service personnel must update the TLI in the replacement module manually.

Monitoring Flash-Based PCIe Card Power-On Hours

The 96-GB, flash-based PCIe card (TA-FAS-S3IE96GB-N) contains an energy storage module (ESM) that supplies backup power to the card. The backup power enables cached volatile data on the card to be written back to non-volatile (flash) storage in the event of unexpected loss of main power to the flash-based PCIe card.

Because the ESM has a limited service life, Oracle ILOM monitors and records the power-on hours in the PCIe card FRUID and notifies the user before the ESM reaches its End of Lifetime.

Note – For instructions on replacing the ESM on the flashed-based PCIe card, see the *Sun Flash Accelerator F20 PCIe Card User's Guide*.

Clearing Server Faults

When a server component fails, the server generates a component-specific fault that is captured by the Oracle ILOM SP. Some faults are cleared automatically when the failed component is replaced, but faults generated for components that are *not* hot-serviceable must be cleared manually. You can use either the Oracle ILOM web interface or the command-line interface (CLI) to manually clear faults.

For the Sun Fire X4170 M2 and X4270 M2 Servers, the following types of faults must be cleared manually after the faulty component is replaced:

- DIMM faults
- PCIe faults
- CPU faults
- Motherboard faults (not necessary if the motherboard is replaced)

In addition, the following fault does not require replacement of a faulty part; however, user action is needed to clear it:

- `fault.security.integrity-compromised@/sys/sp`

  This fault is generated when the server's top cover is removed while the AC power cords are still connected to the power supply, that is, power is not completely removed from the server.

When clearing faults, give consideration to the following:

- PCIe faults can cover one or more of the following components: network ports (`/SYS/MB/NET`*n*) and PCIe cards (`/SYS/MB/RISER`*n*`/PCIE`*n*).

The procedure for clearing a fault differs depending on the type of fault:

- To clear the `fault.security.integrity-compromised@/sys/sp` fault, replace the server's top cover and either reboot the server's SP or remove the AC power cords, and then reconnect the cords.
- To clear DIMM, ESM riser, ESM, PCIe faults, CPU, and motherboard faults, access the server's Oracle ILOM SP and clear the fault for the failed component.

The following sections provide specific instructions on how to clear faults on server components:

- "Clear DIMM Fault Using the Oracle ILOM CLI" on page 2-20
- "Clear PCIe Riser Fault Using the Oracle ILOM CLI" on page 2-21
- "Clear PCIe Card Fault Using the Oracle ILOM CLI" on page 2-21
- "Clear CPU Fault Using the Oracle ILOM CLI" on page 2-22
- "Clear Solaris-Based CPU Fault Using the Solaris Operating System" on page 2-23
- "Clear Motherboard Fault" on page 2-23

Note – Oracle ILOM-based faults are persistent and require service actions to clear the fault after the component is physically replaced. Additionally, on servers running the Oracle Solaris Operating System, Solaris-based faults are always persistent and must be cleared.

▼ Clear DIMM Fault Using the Oracle ILOM CLI

1. **Log in to the server as `root` using the Oracle ILOM CLI.**
2. **To view server faults, type the following command to list all known faults on the system:**

   -> **`show /SP/faultmgmt`**

   The server lists all known faults, for example:

```
SP/faultmgmt
  Targets:
      0 (/SYS/MB/P0/D2)
  Properties:
  Commands:
      cd
      show
```

3. **To clear the DIMM fault, type the following command:**

   -> **set /SYS/MB/P0/D*n* clear_fault_action=true**

   For example, to clear a fault on the DIMM in location D2 on CPU0:

```
-> set /SYS/MB/P0/D2 clear_fault_action=true
Are you sure you want to clear /SYS/MB/P0 (y/n)? y
Set 'clear_fault_action" to 'true'
```

▼ Clear PCIe Riser Fault Using the Oracle ILOM CLI

1. **Log in to the server as** `root` **using the Oracle ILOM CLI.**
2. **To view server faults, type the following command to list all known faults on the system:**

   -> **show /SP/faultmgmt**

   The server lists all known faults, for example:

```
SP/faultmgmt
  Targets:
      0 (/SYS/MB/RISER1)
  Properties:
  Commands:
      cd
      show
```

3. **To clear a PCIe riser fault, type the following command:**

   -> **set /SYS/MB/RISER*n* clear_fault_action=true**

   For example, to clear a fault on the riser in slot 1:

```
-> set /SYS/MB/RISER1 clear_fault_action=true
Are you sure you want to clear /SYS/MB/RISER1 (y/n)? y
Set 'clear_fault_action" to 'true'
```

▼ Clear PCIe Card Fault Using the Oracle ILOM CLI

1. **Log in to the server as** `root` **using the Oracle ILOM CLI.**

2. **To view server faults, type the following command to list all known faults on the system:**

   -> **show /SP/faultmgmt**

   The server lists all known faults, for example:

```
SP/faultmgmt
  Targets:
      0 (/SYS/MB/RISER2/PCIE5)
  Properties:
  Commands:
      cd
      show
```

3. **To clear a PCIe card fault, type the following command:**

   -> **set /SYS/MB/RISER*n*/PCIE*n* clear_fault_action=true**

   For example, to clear a fault on the PCIe card in PCIe slot 2:

```
-> set /SYS/MB/RISER2/PCIE2 clear_fault_action=true
Are you sure you want to clear /SYS/MB/RISER2/PCIE2 (y/n)? y
Set 'clear_fault_action" to 'true'
```

▼ Clear CPU Fault Using the Oracle ILOM CLI

1. **Log in to the server as** `root` **using the Oracle ILOM CLI.**
2. **To view server faults, type the following command to list all known faults on the system:**

   -> **show /SP/faultmgmt**

   The server lists all known faults, for example:

```
SP/faultmgmt
  Targets:
      0 (/SYS/MB/P0)
  Properties:
  Commands:
      cd
      show
```

3. **To clear the CPU fault, type the following command:**

   -> **set /SYS/MB/P*n* clear_fault_action=true**

   For example, to clear a fault on CP0:

```
-> set /SYS/MB/P0 clear_fault_action=true
Are you sure you want to clear /SYS/MB/P0 (y/n)? y
Set 'clear_fault_action" to 'true'
```

▼ Clear Solaris-Based CPU Fault Using the Solaris Operating System

If you are running the Oracle Solaris operating system, the Predictive Self-Healing capabilities will diagnose this same CPU fault as is diagnosed by Oracle ILOM and causes the processor to be placed off line upon a system reboot. Placing the processor off line prevents future system interruptions until the processor can be replaced.

- **Use the Solaris Fault Management utilities to clear a processor fault and enable the processor.**

▼ Clear Motherboard Fault

Note – Because the Oracle ILOM service processor, which contains the fault telemetry, is embedded in the motherboard, if you replaced the motherboard, it is not necessary to clear Oracle ILOM-based faults that occur on the motherboard. However, if you are sure that the motherboard is not at fault, and, therefore, you did not replace it, you can used this procedure to clear the motherboard fault.

---

1. **Log in to the server as** `root` **using the Oracle ILOM CLI.**
2. **To view server faults, type the following command to list all known faults on the system:**

   -> **show /SP/faultmgmt**

   The server lists all known faults, for example:

```
SP/faultmgmt
  Targets:
      0 (/SYS/MB)
  Properties:
```

```
  Commands:
      cd
      show
```

3. **To clear the motherboard fault, type the following command:**

   -> **set /SYS/MB clear_fault_action=true**

   For example:

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

Server Chassis Intrusion Sensors

The /SYS/INTSW sensor and the /SYS/SP/SP_NEEDS_REBOOT sensor are asserted when the server's top cover is removed while power is being applied to the server. This is an improper service action so these sensors serve to alert you to any unauthorized and inadvertent removal of the server's cover. Thus, these sensors enable system administrators to have confidence that the physical integrity of the server has not been violated. This is particularly beneficial when the server is in a remote or uncontrolled location.

How the /SYS/INTSW Sensor Works

The /SYS/INTSW sensor is asserted when the chassis intrusion switch trips while the server is powered-on. If the AC power cords are connected to the server, power is being applied to the server. Even when you shut down the server's host, power is still being applied to the server. The only way to remove power from the server completely is to disconnect the server's AC power cords.

The chassis intrusion switch will trip if the server's cover is removed, the switch itself is misaligned, or the cover is not properly seated. This sensor is de-asserted when the integrity of the server's chassis is restored, that is, when the removed cover is properly reinstalled returning the chassis intrusion switch to its closed state.

Caution – Removing the server's top cover while the power cords are connected to the system is not an authorized service action. Proper service action requires that host and SP shutdown operations be observed and that the power cords be disconnected from the system before the cover is opened. If proper service actions

are taken, you should not see either the /SYS/INTSW or /SYS/SP/SP_NEEDS_REBOOT sensors asserted unless there are other issues, such as a misaligned chassis intrusion switch.

How the /SYS/SP/SP_NEEDS_REBOOT Sensor Works

Like the /SYS/INTSW sensor, the /SYS/SP/SP_NEEDS_REBOOT sensor is asserted when the server's chassis intrusion switch is tripped while power is being applied to the server. Shutting down the server's host or shutting down the server by pressing the Power button does not shut down the SP because the SP continues to run when the server's power is placed in Standby mode. The only way to remove power from the SP is to disconnect the AC power cords. To clear this sensor, you must replace the server's cover and either reboot or power cycle the SP.

Assertion of the /SYS/SP/SP_NEEDS_REBOOT sensor indicates that the SP has been placed in a degraded mode of operation. In degraded more, Oracle ILOM stops taking DIMM inventory. This action is taken as a safety precaution because the SP has no way of knowing the real configuration of the server's memory. For example, some of the DIMMs could have been removed while the server's cover was improperly removed. To protect against such an occurrence, the SP is placed in the degraded mode.

Note – If the chassis intrusion switch is not properly aligned or the server's cover has not been properly seated, both the /SYS/INTSW and /SYS/SP/SP_NEEDS_REBOOT sensors will be asserted and the SP will operate in a degraded mode.

TABLE 2-3 shows how the /SYS/INTSW sensor and the /SYS/SP/SP_NEEDS_REBOOT sensor work together to indicate the state of the server.

TABLE 2-3 Server Condition as Indicated by the /SYS/INTSW and /SYS/SP/SP_NEEDS_REBOOT Sensors

/SYS/INTSW	/SYS/SP/SP_NEEDS_REBOOT	Server Condition
De-asserted	De-asserted	Normal system state.
Asserted	Asserted	The server's top cover was opened while the SP was running. The server's DIMM inventory can no longer be considered valid so the SP is placed in a degraded mode of operation. This condition can also be caused by a misaligned chassis intrusion switch or an improperly seated cover.
De-asserted	Asserted	The server's top cover has been replaced, but the SP was not subsequently rebooted. The server's DIMM inventory can no longer be considered valid so the SP is placed in a degraded mode of operation. The SP needs to be rebooted while the host power is held off before the DIMM inventory will be valid. **Note -** The server's host can be powered on in this state.

Sensors and Indicators Reference Information

The server includes several of sensors that report on hardware conditions. Many of the sensor readings are used to adjust the fan speeds and perform other actions, such as illuminating LEDs and powering off the server.

This section describes the sensors that Oracle ILOM monitors for the Sun Fire X4170 M2 and X4270 M2 Servers.

The following types of sensors are described:

- "Chassis Sensors and Indicators" on page 27
- "Cooling Unit Sensors and Indicators" on page 29
- "Disk Sensors and Indicators" on page 30
- "Memory Device Sensors and Indicators" on page 31

- "Power Supply Sensors and Indicators" on page 31
- "Power Supply Sensors and Indicators" on page 31
- "Processor Sensors and Indicators" on page 32
- "System Board Sensors and Indicators" on page 32
- "Temperature Sensors and Indicators" on page 33

Note – For information about how to obtain sensor readings or to determine the state of system indicators in Oracle ILOM, see the *Oracle Integrated Lights Out Manager (ILOM) 3.0 CLI Procedures Guide* and *Oracle Integrated Lights Out Manager (ILOM) 3.0 Web Interface Procedures Guide*.

Chassis Sensors and Indicators

TABLE 2-4 describes the chassis sensors and indicators.

TABLE 2-4 Chassis Sensors and Indicators

Sensor Name	Sensor Type	Component Description
/SYS/PWRBS	Discrete sensor	Power budget status
/SYS/VPS	Threshold sensor	Power consumption sensor

TABLE 2-4 Chassis Sensors and Indicators *(Continued)*

Sensor Name	Sensor Type	Component Description
/SYS/INTSW	Discrete sensor	Top cover intrusion switch sensor. This sensor tracks the state of the chassis intrusion switch. If the server's top cover is opened while the AC power cords are still connected so that power is being applied to the server, this sensor asserts. If the top cover is subsequently replaced, this sensor is de-asserted. For more information, see "Server Chassis Intrusion Sensors" on page 24.
/SYS/TEMP_FAULT	Indicator	Temperature fault LED
/SYS/SP/SP_NEEDS_REBOOT	Physical security	This sensor asserts when the server's cover is removed while the AC power cords are still connected so that power is being applied to the server. However, this sensor is not cleared by merely replacing the cover. This sensor indicates a server fault that must be cleared; otherwise, the SP will operate in a degraded mode. To clear this fault, replace the server's top cover, power down the server's host, and reboot the server's SP. For more information, see "Server Chassis Intrusion Sensors" on page 24.

Cooling Unit Sensors and Indicators

TABLE 2-5 describes the cooling unit sensors and indicators.

TABLE 2-5 Cooling Unit Sensors and Indicators

Sensor Name	Sensor Type	Component Description
/SYS/FB/PRSNT	Discrete sensor	Fan board is present.
/SYS/FB/FM*n*/PRSNT	Discrete sensor	Fan board; Fan module *n* is present.
/SYS/FB/FM*n*/F*n*/TACH	Threshold sensor	Fan board; Fan module *n*; Fan *n* tachometer. This is a threshold sensor that senses the fan speed in *n* in the fan module.
/SYS/FB/FM*n*/SERVICE	Indicator	Fan board; Fan module *n*; SERVICE. This is a fan module fault LED. It illuminates amber to indicate that the fan module has failed. For Sun Fire X4170 M2 Server: located on the fan module. For Sun Fire X4270 M2 Server: located on the server chassis sidewall adjacent to fan modules.
/SYS/FB/FM*n*/OK	Indicator	Fan board; Fan module *n*; OK. This is a fan OK LED. It illuminates green to indicate that the fan module is operating properly. For Sun Fire X4170 M2 Server: located on the fan module. For Sun Fire X4270 M2 Server: located on the server chassis sidewall adjacent to fan modules.
/SYS/FAN_FAULT	Indicator	Top fan fault LED. This LED illuminates amber when any of the fan modules fails. It is located on the server front panel.

Disk Sensors and Indicators

TABLE 2-6 describes the disk sensors and indicators. These sensors monitor the status of the disk backplane and the hard drives.

TABLE 2-6 Disk Sensors and Indicators

Sensor Name	Sensor Type	Component Description
/SYS/DBP/PRSNT	Discrete sensor	Disk backplane is present sensor.
/SYS/DBP/HDD*n*/PRSNT	Discrete sensor	Hard disk *n* is present sensor.
/SYS/DBP/HDD*n*/SERVICE	Indicator	Hard disk *n* service LED. Illuminates amber when the hard disk needs servicing.
/SYS/DBP/HDD*n*/OK2RM	Indicator	Hard disk *n* ready to remove LED.

Memory Device Sensors and Indicators

TABLE 2-7 describes the memory device sensors and indicators. These sensors monitor the status of the host CPU memory DIMMs.

TABLE 2-7 Memory Device Sensors and Indicators

Sensor Name	Sensor Type	Component Description
/SYS/MB/P*n*/D*n*/PRSNT	Discrete sensor	Motherboard; Host CPU *n*; DIMM *n* is present.
/SYS/MB/P*n*/D*n*/SERVICE	Indicator	Host CPU *n* DIMM *n* service LED. Illuminates amber when a DIMM fails and the Fault Remind button is pressed.

Power Supply Sensors and Indicators

TABLE 2-8 describes the power supply sensors and indicators. In the table, *n* designates the numbers 0-1.

TABLE 2-8 Power Supply Sensors

Sensor Name	Sensor Type	Component Description
/SYS/PS_FAULT	Indicator	Power supply service LED
/SYS/PS*n*/PRSNT	Discrete sensor	Power supply *n* is present.
/SYS/PS*n*/VINOK	Discrete sensor	Power supply *n* voltage in is OK.
/SYS/PS*n*/PWROK	Discrete sensor	Power supply *n is* OK.
/SYS/PS*n*/CUR_FAULT	Discrete sensor	Power supply *n* current error
/SYS/PS*n*/VOLT_FAULT	Discrete sensor	Power supply *n* voltage error
/SYS/PS*n*/FAN_FAULT	Discrete sensor	Power supply *n* fan error
/SYS/PS*n*/TEMP_FAULT	Discrete sensor	Power supply *n* temperature error
/SYS/PS*n*/V_IN	Threshold sensor	Power supply unit *n* input voltage
/SYS/PS*n*/I_IN	Threshold sensor	Power supply unit *n* input current in amps
/SYS/PS*n*/V_OUT	Threshold sensor	Power supply unit *n* output voltage

TABLE 2-8 Power Supply Sensors *(Continued)*

Sensor Name	Sensor Type	Component Description
/SYS/PS*n*/I_OUT	Threshold sensor	Power supply unit *n* output current in amps
/SYS/PS*n*/INPUT_POWER	Threshold sensor	Power supply unit *n* input power in watts
/SYS/PS*n*/OUTPUT_POWER	Threshold sensor	Power supply unit *n* output power in watts

Processor Sensors and Indicators

TABLE 2-9 describes the processor sensors and indicators.

TABLE 2-9 Processor Sensors and Indicators

Sensor Name	Sensor Type	Component Description
/SYS/MB/P*n*/PRSNT	Discrete sensor	Motherboard; Host CPU *n* is present.
/SYS/MB/P*n*/SERVICE	Indicator	Host CPU service LED. If the CPU fails, this LED illuminates amber when the Fault Remind button is pressed.

System Board Sensors and Indicators

TABLE 2-10 describes the system board sensors and indicators.

TABLE 2-10 System Board Sensors and Indicators

Sensor Name	Sensor Type	Component Description
/SYS/ACPI	State sensor	Precondition for sensors that need to know if the host is on. **Note -** This sensor is not visible to the Oracle ILOM user interfaces.
/SYS/T_AMB	Threshold sensor	System ambient temperature sensor. This sensor is located on the underside of the fan board.
/SYS/SP/SERVICE	Indicator	SP Service LED

TABLE 2-10 System Board Sensors and Indicators *(Continued)*

Sensor Name	Sensor Type	Component Description
/SYS/OK	Indicator	System Power OK LED. This LED is located on the server's front panel. It illuminates green and blinks or is steady on depending on the status of server power-on/boot process.
/SYS/SERVICE	Indicator	System Service LED. This LED is located on the server's front panel. It illuminates amber to indicate a fault on a server component.
/SYS/LOCATE	indicator	System Locate LED. This LED is located on the server's front panel. It illuminates white and blinks on and off to assist you in physically locating the server.
/SYS/MB/RISER*n*/PRSNT	Discrete sensor	Senses if PCIe riser*n* is present.
/SYS/MB/RISER*n/PCIen*/PRSNT	Discrete sensor	Senses if an option card is inserted in PCIe slot*n*.
/SYS/SAS_EXP/PRSNT	Discrete sensor	SAS Expander board is present. This board connects to the disk backplane and the SAS cables connect to it. **Note -** This sensor is only supported on the Sun Fire X4270 M2 Server.

Temperature Sensors and Indicators

TABLE 2-11 describes the temperature sensors and indicators.

TABLE 2-11 Temperature Sensors and Indicators

Sensor Name	Sensor Type	Component Description
/SYS/MB/T_OUT0, /SYS/MB/T_OUT1, and /SYS/MB/T_OUT2	Discrete sensor	Motherboard ambient temperature sensors. These sensors are located in the rear of the chassis.

SNMP and PET Message Reference Information

This section describes Simple Network Management Protocol (SNMP) and Platform Event Trap (PET) messages that are generated by devices that are monitored by Oracle ILOM.

- "SNMP Traps" on page 34
- "PET Event Messages" on page 45

SNMP Traps

SNMP Traps are generated by the SNMP agents that are installed on the SNMP devices being managed by Oracle ILOM. Oracle ILOM receives the SNMP Traps and converts them into SNMP event messages that appear in the event log.

Note – If trap a number appears in the event log and the trap is not identified by name, you can use the id assigned to each trap in the MIB to determine the trap's name. For example, traps 53 and 54 translate to sunHwTrapComponentError and sunHwTrapComponentOk respectively.

For more information about the SNMP event messages that might be generated on your system, see the following tables.

- For memory event messages, see TABLE 2-12.
- For environment event messages, see TABLE 2-13.
- For power supply event messages, see TABLE 2-14.
- For sensor event messages, see TABLE 2-15.
- For system security event messages, see TABLE 2-16.
- For fan event messages, see TABLE 2-17.
- For hard drive event messages, see TABLE 2-18.
- For PCIe card event messages, see TABLE 2-19.
- For generic component messages, see TABLE 2-20.

TABLE 2-12 describes the memory SNMP event messages.

TABLE 2-12 Memory SNMP Events

SNMP Trap Message	Oracle ILOM Event Message	Severity and Description	Sensor Name
sunHwTrapMemoryFault	fault.memory.channel.misconfigured	Major; a memory component is suspected of causing a fault.	/SYS/MB/P/D
	fault.memory.intel.dimm.incompatible		
	fault.memory.intel.dimm.incompatible-maxranks		
	fault.memory.intel.dimm.incompatible-quadrank		
	fault.memory.intel.dimm.population-invalid		
sunHwTrapMemoryFaultCleared	fault.memory.channel.misonfigured	Informational; a memory component fault has been cleared. This generic component trap is generated when the SNMP agent does not recognize the component type.	/SYS/MB/P/D
	fault.memory.intel.dimm.incompatible		
	fault.memory.intel.dimm.incompatible-maxranks		
	fault.memory.intel.dimm.incompatible-quadrank		
	fault.memory.intel.dimm.population-invalid		
sunHwTrapComponentFault	fault.memory.intel.dimmnone	Major; a memory component is suspected of causing a fault. This generic component trap is generated when the SNMP agent does not recognize the component type.	/SYS/MB
	fault.memory.intel.dimm.population-invalid		
	fault.memory.controller.init-failed		
	fault.memory.controller.input-invalid		
	fault.memory.intel.dimm.population-invalid		/SYS/MB/P/D

TABLE 2-12 Memory SNMP Events *(Continued)*

SNMP Trap Message	Oracle ILOM Event Message	Severity and Description	Sensor Name
sunHwTrapComponentFaultCleared	fault.memory.intel.dimm.none	Informational; a memory component fault has been cleared. This generic component trap is generated when the SNMP agent does not recognize the component type.	/SYS/MB
	fault.memory.intel.dimm.population-invalid		
	fault.memory.controller.init-failed		
	fault.memory.controller.input-invalid		

TABLE 2-13 describes the system environmental event messages.

TABLE 2-13 Environmental SNMP Events

SNMP Event Message	Oracle ILOM Event Message	Severity and Description	Sensor Name
sunHwTrapComponentFault	fault.chassis.env.temp.over-fail	Major; a component is suspected of causing a fault.	/SYS
sunHwTrapComponentFaultCleared	fault.chassis.env.temp.over-fail	Informational; a component fault has been cleared.	/SYS
sunHwTrapPowerSupplyFault	fault.chassis.power.overtemperature	Major; a power supply component is suspected of causing a fault.	/SYS/PS
sunHwTrapPowerSupplyFaultCleared	fault.chassis.power.overtemperature	Informational; a power supply component fault has been cleared.	/SYS/PS
sunHwTrapTempCritThresholdExceeded	Lower critical threshold exceeded	Major; a temperature sensor has reported that its value has gone below a lower critical threshold setting.	/SYS/MB/T_AMB
sunHwTrapTempCritThresholdDeasserted	Lower critical threshold no longer exceeded	Informational; a temperature sensor has reported that its value has gone above a lower critical threshold setting.	/SYS/MB/T_AMB
sunHwTrapTempCritThresholdExceeded	Upper critical threshold exceeded	Major; a temperature sensor has reported that its value has gone above an upper critical threshold setting.	/SYS/MB/T_AMB /SYS/MB/T_OUT*n* /SYS/T_AMB

TABLE 2-13 Environmental SNMP Events *(Continued)*

SNMP Event Message	Oracle ILOM Event Message	Severity and Description	Sensor Name
sunHwTrapTempCritThresholdDeasserted	Upper critical threshold no longer exceeded	Informational; a temperature sensor has reported that its value has gone below an upper critical threshold setting or above a lower critical threshold setting.	/SYS/MB/T_AMB /SYS/MB/T_OUT*n* /SYS/T_AMB
sunHwTrapTempNonCritThresholdExceeded	Upper noncritical threshold exceeded	Minor; a temperature sensor has reported that its value has gone above an upper critical threshold setting or below a lower critical threshold setting.	/SYS/MB/T_AMB /SYS/MB/T_OUT*n*
sunHwTrapTempOk	Upper noncritical threshold no longer exceeded	Informational; a temperature sensor has reported that its value is in the normal operating range.	/SYS/MB/T_AMB /SYS/MB/T_OUT*n*
sunHwTrapTempFatalThresholdExceeded	Lower fatal threshold exceeded	Critical; a temperature sensor has reported that its value has gone below a lower fatal threshold setting.	/SYS/MB/T_AMB
sunHwTrapTempFatalThresholdDeasserted	Lower fatal threshold no longer exceeded	Informational; a temperature sensor has reported that its value has gone above a lower fatal threshold setting.	/SYS/MB/T_AMB
sunHwTrapTempFatalThresholdExceeded	Upper fatal threshold exceeded	Critical; a temperature sensor has reported that its value has gone above an upper fatal threshold setting.	/SYS/MB/T_AMB /SYS/MB/T_OUT*n* /SYS/T_AMB
sunHwTrapTempFatalThresholdDeasserted	Upper fatal threshold no longer exceeded	Informational; a temperature sensor has reported that its value has gone below an upper fatal threshold setting.	/SYS/MB/T_AMB /SYS/MB/T_OUT*n* /SYS/T_AMB

TABLE 2-14 describes the power supply SNMP event messages.

TABLE 2-14 Power Supply SNMP Events

SNMP Event Message	Oracle ILOM Event Message	Severity and Description	Sensor Name
sunHwTrapComponentFault	fault.chassis.power.overcurrent	Major; a component is suspected of causing a fault.	/SYS
sunHwTrapComponentFaultCleared	fault.chassis.power.overcurrent	Informational; a component fault has been cleared.	/SYS
sunHwTrapPowerSupplyFault	fault.chassis.env.power.loss	Major; a power supply component is suspected of causing a fault.	/SYS/PS
sunHwTrapPowerSupplyFaultCleared	fault.chassis.env.power.loss	Informational; a power supply component fault has been cleared.	/SYS/PS
sunHwTrapPowerSupplyError	Assert	Major; a power supply sensor has detected an error.	/SYS/PWRBS /SYS/PS*n*/CUR_FAULT /SYS/PS*n*/VOLT_FAULT /SYS/PS*n*/FAN_FAULT /SYS/PS*n*/TEMP_FAULT
	Deassert		/SYS/PS*n*/VINOK /SYS/PS*n*/PWROK
sunHwTrapPowerSupplyOk	Assert	Informational; a power supply sensor has returned to its normal state.	/SYS/PS*n*/VINOK /SYS/PS*n*/PWROK
	Deassert		/SYS/PWRBS /SYS/PS*n*/CUR_FAULT /SYS/PS*n*/VOLT_FAULT /SYS/PS*n*/FAN_FAULT /SYS/PS*n*/TEMP_FAULT
sunHwTrapComponentError	ACPI_ON_WORKING ASSERT	Major; a sensor has detected an error. The component type was not recognized.	/SYS/ACPI
	ACPI_ON_WORKING DEASSERT		
	ACPI_SOFT_OFF ASSERT		
	ACPI_SOFT_OFF DEASSERT		

TABLE 2-14 Power Supply SNMP Events *(Continued)*

SNMP Event Message	Oracle ILOM Event Message	Severity and Description	Sensor Name
sunHwTrapVoltageCritThresholdExceeded	Lower Critical threshold exceeded	Major; a voltage sensor has reported that its value has gone below a lower critical threshold setting.	/SYS/PS*n*/V_IN /SYS/PS*n*/V_OUT
	Upper critical threshold exceeded	Major; a voltage sensor has reported that its value has gone above an upper critical threshold setting.	
sunHwTrapVoltageCritThresholdDeasserted	Lower Critical threshold no longer exceeded	Informational; A voltage sensor has reported that its value has gone above a lower critical threshold setting.	/SYS/PS*n*/V_IN /SYS/PS*n*/V_OUT
	Upper critical threshold no longer exceeded	Informational; a voltage sensor has reported that its value has gone below an upper non-critical threshold setting.	
sunHwTrapVoltageNonCritThresholdExceeded	Upper noncritical threshold exceeded	Minor; a voltage sensor has reported that its value has gone above an upper non-critical threshold setting. or below a lower non-critical threshold setting.	/SYS/PS*n*/V_IN /SYS/PS*n*/V_OUT
sunHwTrapVoltageOk	Upper noncritical threshold no longer exceeded	Informational; a voltage sensor has reported that its value is in the normal operating range.	/SYS/PS*n*/V_IN /SYS/PS*n*/V_OUT

TABLE 2-14 Power Supply SNMP Events *(Continued)*

SNMP Event Message	Oracle ILOM Event Message	Severity and Description	Sensor Name
sunHwTrapVoltageFatalThresholdExceeded	Lower fatal threshold exceeded	Critical; a voltage sensor has reported that its value has gone below a lower fatal threshold setting.	/SYS/PS*n*/V_IN /SYS/PS*n*/V_OUT
	Upper fatal threshold exceeded	Critical; a voltage sensor has reported that its value has gone above an upper fatal threshold setting.	
sunHwTrapVoltageFatalThresholdDeasserted	Lower fatal threshold no longer exceeded	Informational; a voltage sensor has reported that its value has gone above a lower fatal threshold setting.	/SYS/PS*n*/V_IN /SYS/PS*n*/V_OUT
	Upper fatal threshold no longer exceeded	Informational; a voltage sensor has reported that its value has gone below an upper fatal threshold setting.	

TABLE 2-15 describes the sensor SNMP event messages.

TABLE 2-15 Sensor SNMP Events

SNMP Event Message	Oracle ILOM Event Message	Severity and Description	Sensor Name
sunHwTrapSensorCritThresholdExceeded	Upper critical threshold exceeded	Major; a sensor has reported that its value has gone above an upper critical threshold setting or below a lower critical threshold setting. The generic sensor trap is generated when the SNMP agent does not recognize the component type. The sunHwTrapThresholdType object indicates whether the threshold was an upper or lower.	/SYS/MB/RISER*n*/PCIE*n*/F20CARD/UPTIME
sunHwTrapSensorCritThresholdDeasserted	Upper critical threshold no longer exceeded	Informational; a sensor has reported that its value has gone below an upper critical threshold setting or above a lower critical threshold setting. The generic sensor trap is generated when the SNMP agent does not recognize the component type. The sunHwTrapThresholdType object indicates whether the threshold was an upper or lower.	/SYS/MB/RISER*n*/PCIE*n*/F20CARD/UPTIME
sunHwTrapSensorNonCritThresholdExceeded	Upper noncritical threshold exceeded	Minor; a sensor has reported that its value has gone above an upper non-critical threshold setting or below a lower non-critical threshold setting. The generic sensor trap is generated when the SNMP agent does not recognize the component type. The sunHwTrapThresholdType object indicates whether the threshold was an upper or lower.	/SYS/MB/RISER*n*/PCIE*n*/F20CARD/UPTIME

TABLE 2-15 Sensor SNMP Events *(Continued)*

SNMP Event Message	Oracle ILOM Event Message	Severity and Description	Sensor Name
sunHwTrapSensorThresholdOk	Upper noncritical threshold no longer exceeded	Informational; a sensor has reported that its value is in the normal operating range. The generic sensor trap is generated when the SNMP agent does not recognize the component type.	/SYS/MB/RISER*n*/PCIE*n*/F20CARD/UPTIME
sunHwTrapSensorFatalThresholdExceeded	Upper fatal threshold exceeded	Critical; a sensor has reported that its value has gone above an upper fatal threshold setting or below a lower fatal threshold setting. The generic sensor trap is generated when the SNMP agent does not recognize the component type. The sunHwTrapThresholdType object indicates whether the threshold was an upper or lower.	/SYS/MB/RISER*n*/PCIE*n*/F20CARD/UPTIME
sunHwTrapSensorFatalThresholdDeasserted	Upper fatal threshold no longer exceeded	Informational; a sensor has reported that its value has gone below an upper fatal threshold setting or above a lower fatal threshold setting. The generic sensor trap is generated when the SNMP agent does not recognize the component type. The sunHwTrapThresholdType object indicates whether the threshold was an upper or lower.	/SYS/MB/RISER*n*/PCIE*n*/F20CARD/UPTIME

TABLE 2-16 describes the system security event messages.

TABLE 2-16 System Security SNMP Events

SNMP Event Message	Oracle ILOM Event Message	Severity and Description	Sensor Name
sunHwTrapComponentFault	fault.chassis.device.fan.column-fail	Major; a component is suspected of causing a fault.	/SYS
	fault.security.enclosure-open		/SYS/SP
	fault.security.integrity-compromised		

TABLE 2-16 System Security SNMP Events *(Continued)*

SNMP Event Message	Oracle ILOM Event Message	Severity and Description	Sensor Name
sunHwTrapComponentFaultCleared	fault.chassis.device.fan.column-fail	Informational; a component fault has been cleared.	/SYS
	fault.security.enclosure-open		/SYS/SP
	fault.security.integrity-compromised		
sunHwTrapSecurityIntrusion	ASSERT	Major; an intrusion sensor has detected that someone may have physically tampered with the system.	/SYS/INTSW /SYS/SP/SP_NEEDS_REBOOT
	DEASSERT		

TABLE 2-17 describes the fan speed SNMP event messages.

TABLE 2-17 Fan SNMP Events

SNMP Event Message	Oracle ILOM Event Message	Severity and Description	Sensor Name
sunHwTrapFanSpeedCritThresholdExceeded	Lower critical threshold exceeded	Major; a fan speed sensor has reported that its value has gone below a lower critical threshold setting.	/SYS/FB/FAN*n*/TACH
sunHwTrapFanSpeedCritThresholdDeasserted	Lower critical threshold no longer exceeded	Informational; a fan speed sensor has reported that its value has gone above a lower critical threshold setting.	
sunHwTrapFanSpeedFatalThresholdExceeded	Lower fatal threshold exceeded	Critical; a fan speed sensor has reported that its value has gone below a lower fatal threshold setting.	
sunHwTrapFanSpeedFatalThresholdDeasserted	Lower fatal threshold no longer exceeded	Informational; a fan speed sensor has reported that its value has gone above a lower fatal threshold setting.	

TABLE 2-18 describes the hard drive SNMP event messages.

TABLE 2-18 Rear Hard Drive SNMP Events

SNMP Event Message	Oracle ILOM Event Message	Severity and Description	Sensor Name
sunHwTrapHardDriveStatus	DRIVE_FAULT ASSERT	Informational; the hard drive identified by sunHwTrapComponent Name has changed state.	/SYS/MB/RHDD*n*/STATE
	DRIVE_FAULT DEASSERT		
	PREDICTIVE_FAILURE ASSERT	Informational; a rear hard drive has changed state.	/SYS/MB/RHDD*n*/STATE
	PREDICTIVE_FAILURE DEASSERT		
	HOT_SPARE ASSERT		
	HOT_SPARE DEASSERT		

TABLE 2-19 describes the PCIe card SNMP event messages.

TABLE 2-19 PCIe Card SNMP Events

SNMP Event Message	Oracle ILOM Event Message	Severity and Description	Sensor Name
sunHwTrapComponentFault	fault.io.pciex.fabric.fatal	Major; a component is suspected of causing a fault. This generic component trap is generated when the SNMP agent does not recognize the component type.	/SYS/MB/RISER/PCIE
	fault.io.pciex.fabric.nonfatal		
	fault.chassis.device.esm.eol.exceeded		/SYS/MB/RISER/PCIE /F20CARD
sunHwTrapComponentFault Cleared	fault.io.pciex.fabric.fatal	Informational; a component fault has been cleared. This generic component trap is generated when the SNMP agent does not recognize the component type.	/SYS/MB/RISER/PCIE
	fault.io.pciex.fabric.nonfatal		
	fault.chassis.device.esm.eol.exceeded		/SYS/MB/RISER/PCIE /F20CARD

TABLE 2-20 describes generic component SNMP event messages. These events occur when to component generating the trap does not have specific trap.

TABLE 2-20 Generic Components SNMP Events

SNMP Event Message	Oracle ILOM Event Message	Severity and Description	Sensor Name
sunHwTrapComponentError	ACPI_ON_WORKING ASSERT	Major; a sensor has detected an error. This generic component trap is generated when the SNMP agent does not recognize the component.	/SYS/ACPI
	ACPI_ON_WORKING DEASSERT		
	ACPI_SOFT_OFF ASSERT		
	ACPI_SOFT_OFF DEASSERT		
sunHwTrapComponentOk	Deassert	Informational; a sensor has returned to its normal state. This generic component trap is generated when the SNMP agent does not recognize the component type.	/SYS/HOT /SYS/PS*n*/V_OUT_OK

PET Event Messages

PET event messages are generated by systems with Alert Standard Format (ASF) or an IPMI baseboard management controller. The PET events provide advance warning of possible system failures. For more information about the PET event messages that might occur on your system, see the following tables.

- For system power event messages, see TABLE 2-21.
- For entity present event messages, see TABLE 2-22.
- For environmental event messages, see TABLE 2-23.
- For system security event messages, see TABLE 2-24.
- For power supply event messages, see TABLE 2-25.
- For fan speed event messages, see TABLE 2-26.

TABLE 2-21 describes the system power PET event messages.

TABLE 2-21 System Power PET Events

PET Event Message	Oracle ILOM Event Message	Severity and Description	Sensor Name
petTrapPowerUnitStateDeassertedAssert	PowerSupply sensor ASSERT	Critical; a run-time power fault has occurred.	/SYS/PWRBS /SYS/PS*n*/CUR_FAULT /SYS/PS*n*/VOLT_FAULT /SYS/PS*n*/FAN_FAULT /SYS/PS*n*/TEMP_FAULT
petTrapPowerSupplyStateAssertedAssert	PowerSupply sensor DEASSERT	Informational; a power supply is connected to AC Power.	/SYS/PWRBS /SYS/PS*n*/VINOK /SYS/PS*n*/PWROK /SYS/PS*n*/CUR_FAULT /SYS/PS*n*/VOLT_FAULT /SYS/PS*n*/FAN_FAULT /SYS/PS*n*/TEMP_FAULT
petTrapACPIPowerStateS5G2SoftOffAssert	SystemACPI ACPI_ON_WORKING′	Informational; system ACPI Power State S5/G2 - soft-of.f	/SYS/ACPI
petTrapSystemBootPowerUp	SystemACPI ACPI_SOFT_OFF′	Informational; system boot initiated by power up.	/SYS/ACPI

TABLE 2-22 describes the entity present PET event messages.

TABLE 2-22 Entity Present PET Events

PET Event Message	Oracle ILOM Event Message	Severity and Description	Sensor Name
petTrapProcessorPresence DetectedDeassert	EntityPresence Remove	Critical; a processor component is absent or has been removed.	/SYS/MB/P*n*/PRSNT /SYS/MB/P*n*/D*n*/PRSNT /SYS/MB/RISER*n*/PRSNT /SYS/MB/RISER*n*/PCIE*n*/PRSNT /SYS/FB/PRSNT /SYS/DBP/PRSNT /SYS/SAS_EXP/PRSNT* /SYS/PS*n*/PRSNT /SYS/FB/FM*n*/PRSNT /SYS/DBP/HDD*n*/PRSNT /SYS/MB/RHDD*n*/PRSNT†
petTrapEntityPresenceDe viceInsertedAssert	EntityPresence Insert	Informational; a device is present or has been inserted.	SYS/MB/P*n*/PRSNT /SYS/MB/P*n*/D*n*/PRSNT /SYS/MB/RISER*n*/PRSNT /SYS/MB/RISER*n*/PCIE*n*/PRSNT /SYS/FB/PRSNT /SYS/DBP/PRSNT /SYS/SAS_EXP/PRSNT‡ /SYS/PS*n*/PRSNT /SYS/FB/FM*n*/PRSNT /SYS/DBP/HDD*n*/PRSNT /SYS/MB/RHDD*n*/PRSNT**

* This sensor is only supported on the Sun Fire X4270 M2 Server.

† This sensor is only supported in the Sun Fire X4270 M2 Server.

‡ This sensor is only supported on the Sun Fire X4270 M2 Server.

** This sensor is only supported in the Sun Fire X4270 M2 Server.

TABLE 2-23 describes the environmental PET event messages.

TABLE 2-23 Environmental PET Events

PET Event Message	Oracle ILOM Event Message	Severity and Description	Sensor Name
petTrapTemperatureUpperNonRecoverableGoingLowDeassert	Temperature Upper non-critical threshold has been exceeded	Major; a system temperature has decreased below upper non-recoverable threshold.	/SYS/MB/T_AMB /SYS/MB/T_OUT*n*
petTrapTemperatureStateAssertedAssert	Temperature Upper non-critical threshold no longer exceeded	Major; a temperature event has occurred. Possible cause: CPU is too hot.	/SYS/MB/T_AMB /SYS/MB/T_OUT*n*
petTrapTemperatureUpperCriticalGoingHigh	Temperature Lower fatal threshold has been exceeded	Major; a system temperature has increased above upper critical threshold.	//SYS/MB/T_AMB /SYS/MB/T_OUT*n*
petTrapTemperatureUpperCriticalGoingLowDeassert	Temperature Lower fatal threshold no longer exceeded	Warning; a system temperature has decreased below upper critical threshold.	/SYS/MB/T_AMB /SYS/MB/T_OUT*n*
petTrapTemperatureLowerNonCriticalGoingLow	Temperature Lower critical threshold has been exceeded	Warning; a system temperature has decreased below lower non-critical threshold.	/SYS/MB/T_AMB
petTrapTemperatureLowerNonCriticalGoingHighDeassert	Temperature Lower critical threshold no longer exceeded	Informational; a system temperature has returned to normal.	/SYS/MB/T_AMB
petTrapTemperatureUpperNonCriticalGoingHigh	Temperature Upper critical threshold has been exceeded	Warning; a system temperature has increased above upper non-critical threshold.	/SYS/MB/T_AMB /SYS/MB/T_OUT*n*
petTrapTemperatureUpperNonCriticalGoingLowDeassert	Temperature Upper critical threshold no longer exceeded	Informational; a system temperature has returned to normal.	/SYS/MB/T_AMB /SYS/MB/T_OUT*n*
petTrapTemperatureLowerCriticalGoingLow	Temperature Lower fatal threshold has been exceeded	Major; a system temperature has decreased below lower critical threshold.	/SYS/MB/T_AMB

TABLE 2-23 Environmental PET Events *(Continued)*

PET Event Message	Oracle ILOM Event Message	Severity and Description	Sensor Name
petTrapTemperatureLower CriticalGoingHighDeassert	Temperature Lower fatal threshold no longer exceeded	Warning; a system temperature has increased above lower critical threshold.	/SYS/MB/T_AMB
petTrapTemperatureLower NonRecoverableGoingHigh Deassert	Temperature Lower non-critical threshold has been exceeded	Major; a system temperature has increased above lower non-recoverable threshold.	/SYS/MB/T_AMB
petTrapTemperatureUpper NonRecoverableGoingHigh	Temperature Lower non-critical threshold no longer exceeded	Critical; a system temperature has increased above upper non-recoverable threshold.	/SYS/MB/T_AMB

TABLE 2-24 describes the system security PET event messages.

TABLE 2-24 System Security PET Events

PET Event Message	Oracle ILOM Event Message	Severity and Description	Sensor Name
Undocumented PET 328449	PhysicalSecurity sensor ASSERT	NA; the system cover was removed while power was applied to the system.	/SYS/INTSW /SYS/SP/SP_NEEDS_ REBOOT
328448- Deassert	PhysicalSecurity sensor DEASSERT	NA; the system cover was replaced and system was power cycled.	/SYS/INTSW /SYS/SP/SP_NEEDS_ REBOOT

TABLE 2-25 describes the power supply PET event messages.

TABLE 2-25 Power Supply PET Events

PET Event Message	Oracle ILOM Event Message	Severity and Description	Sensor Name
petTrapVoltageLowerCritical GoingLow	Voltage Lower fatal threshold has been exceeded	Major; the voltage of system power supply *n* has decreased below the lower critical threshold.	/SYS/PS*n*/V_IN /SYS/PS*n*/V_OUT
petTrapVoltageLowerCritical GoingHighDeassert	Voltage Lower fatal threshold no longer exceeded	Warning; the voltage of system power supply *n* has increased above the lower critical threshold.	/SYS/PS*n*/V_IN /SYS/PS*n*/V_OUT
petTrapVoltageUpperNonCri ticalGoingHigh	Voltage Upper critical threshold has been exceeded	Warning; the voltage of system power supply *n* has increased above the upper non-critical threshold.	/SYS/PS*n*/V_IN /SYS/PS*n*/V_OUT

TABLE 2-25 Power Supply PET Events *(Continued)*

PET Event Message	Oracle ILOM Event Message	Severity and Description	Sensor Name
petTrapVoltageUpperNonCriticalGoingLowDeassert	Voltage Upper critical threshold no longer exceeded	Informational; the voltage of system power supply *n* has returned to normal.	/SYS/PS*n*/V_IN /SYS/PS*n*/V_OUT
petTrapVoltageUpperCriticalGoingHigh	Voltage Lower fatal threshold has been exceeded	Major; the voltage of system power supply *n* has increased above upper critical threshold.	/SYS/PS*n*/V_IN /SYS/PS*n*/V_OUT
petTrapVoltageUpperCriticalGoingLowDeassert	Voltage Lower fatal threshold no longer exceeded	Warning; the voltage of system power supply *n* has decreased below upper critical threshold.	/SYS/PS*n*/V_IN /SYS/PS*n*/V_OUT
petTrapVoltageLowerNonCriticalGoingLow	Voltage Lower critical threshold has been exceeded	Warning; the voltage of system power supply *n* has decreased below lower non-critical threshold.	/SYS/PS*n*/V_IN /SYS/PS*n*/V_OUT
petTrapVoltageLowerNonCriticalGoingHighDeassert	Voltage Lower critical threshold no longer exceeded	Informational; the voltage of system power supply *n* has returned to normal.	/SYS/PS*n*/V_OUT
petTrapVoltageUpperNonRecoverableGoingLowDeassert	Voltage Upper non-critical threshold has been exceeded	Major; the voltage of system power supply *n* has decreased below upper non-recoverable threshold.	/SYS/PS*n*/V_OUT
petTrapVoltageStateAssertedAssert	Voltage Upper non-critical threshold has been exceeded	Informational; a voltage event for system power supply *n* has occurred.	/SYS/PS*n*/V_OUT
petTrapVoltageLowerNonRecoverableGoingHighDeassert	Voltage Lower non-critical threshold has been exceeded	Major; the voltage of system power supply *n* has increased above lower non-recoverable threshold.	/SYS/PS*n*/V_OUT
petTrapVoltageUpperNonRecoverableGoingHigh	Voltage Lower non-critical threshold no longer exceeded	Critical; the voltage of system power supply *n* has increased above upper non-recoverable threshold.	/SYS/PS*n*/V_OUT

TABLE 2-26 describes the fan speed PET event messages.

TABLE 2-26 Fan Speed PET Events

PET Event Message	Oracle ILOM Event Message	Severity and Description	Sensor Name
petTrapFanLowerCriticalGoingLow	Fan Lower fatal threshold has been exceeded	Major; the speed of fan *n* has decreased below lower critical threshold.	/SYS/FB/FM*n*/F*n*/TACH
petTrapFanLowerCriticalGoingHighDeassert	Fan Lower fatal threshold no longer exceeded	Warning; the speed of fan *n* has increased above lower critical threshold.	/SYS/FB/FM*n*/F*n*/TACH
petTrapFanLowerNonCriticalGoingLow	Fan Lower critical threshold has been exceeded	Warning; the speed of fan *n* has decreased below lower non-critical threshold.	/SYS/FB/FM*n*/F*n*/TACH
petTrapFanLowerNonCriticalGoingHighDeassert	Fan Lower critical threshold no longer exceeded	Informational; the speed of fan *n* has returned to normal.	/SYS/FB/FM*n*/F*n*/TACH
petTrapFanLowerNonRecoverableGoingHighDeassert	Fan Lower non-critical threshold has been exceeded	Major; the speed of fan *n* has increased above lower non-recoverable threshold.	/SYS/FB/FM*n*/F*n*/TACH
petTrapFanUpperNonRecoverableGoingHigh	Fan Lower non-critical threshold no longer exceeded	Critical; the speed of fan *n* has increased above upper non-recoverable threshold.	/SYS/FB/FM*n*/F*n*/TACH

Index

C

chassis intrusion sensor
  benefits, 20
  how it works, 24
chassis intrusion switch
  how tripped, 24
clearing faults
  motherboard, 23
clearing server faults, 19

D

documentation
  languages available in, viii
  related documents, vi

F

fash-based PCIe card power-on hours
  monitoring, 19
features
  platform specific, 5

H

Hardware Management Pack, 7
  documentation, 9
  download, 8

I

ILOM event messages
  ACPI_ON_WORKING ASSERT, 38, 45
  ACPI_ON_WORKING DEASSERT, 38, 45
  ACPI_SOFT_OFF ASSERT, 38, 45
  ACPI_SOFT_OFF DEASSERT, 38, 45
  ASSERT, 43
  Assert, 38
  DEASSERT, 43
  Deassert, 38, 45
  DRIVE_FAULT ASSERT, 44
  DRIVE_FAULT DEASSERT, 44
  EntityPresence Insert, 47
  EntityPresence Remove, 47
  Fan Lower critical threshold has been exceeded, 51
  Fan Lower critical threshold no longer exceeded, 51
  Fan Lower fatal threshold has been exceeded, 51
  Fan Lower fatal threshold no longer exceeded, 51
  Fan Lower non-critical threshold has been exceeded, 51
  Fan Lower non-critical threshold no longer exceeded, 51
  fault.chassis.device.esm.eol.exceeded, 44
  fault.chassis.device.fan.column-fail, 42, 43
  fault.chassis.env.power.loss, 38
  fault.chassis.env.temp.over-fail, 36
  fault.chassis.power.overcurrent, 38
  fault.chassis.power.overtemperature, 36
  fault.io.pciex.fabric.fatal, 44
  fault.io.pciex.fabric.nonfatal, 44
  fault.memory.channel.misconfigured, 35
  fault.memory.channel.misonfigured, 35
  fault.memory.controller.init-failed, 35, 36
  fault.memory.controller.input-invalid, 35, 36
  fault.memory.intel.dimm.incompatible, 35
  fault.memory.intel.dimm.incompatible-maxranks, 35

fault.memory.intel.dimm.incompatible-quadrank, 35
fault.memory.intel.dimm.none, 36
fault.memory.intel.dimm.population-invalid, 35, 36
fault.memory.intel.dimmnone, 35
fault.security.enclosure-open, 42, 43
fault.security.integrity-compromised, 42, 43
HOT_SPARE ASSERT, 44
HOT_SPARE DEASSERT, 44
Lower Critical threshold exceeded, 39
Lower critical threshold exceeded, 36, 43
Lower Critical threshold no longer exceeded, 39
Lower critical threshold no longer exceeded, 36, 43
Lower fatal threshold exceeded, 37, 40, 43
Lower fatal threshold no longer exceeded, 37, 40, 43
PhysicalSecurity sensor ASSERT, 49
PhysicalSecurity sensor DEASSERT, 49
PowerSupply sensor ASSERT, 46
PowerSupply sensor DEASSERT, 46
PREDICTIVE_FAILURE ASSERT, 44
PREDICTIVE_FAILURE DEASSERT, 44
SystemACPI ACPI_ON_WORKING', 46
SystemACPI ACPI_SOFT_OFF', 46
Temperature Lower critical threshold has been exceeded, 48
Temperature Lower critical threshold no longer exceeded, 48
Temperature Lower fatal threshold has been exceeded, 48
Temperature Lower fatal threshold no longer exceeded, 48, 49
Temperature Lower non-critical threshold has been exceeded, 49
Temperature Lower non-critical threshold no longer exceeded, 49
Temperature Upper critical threshold has been exceeded, 48
Temperature Upper critical threshold no longer exceeded, 48
Temperature Upper non-critical threshold has been exceeded, 48
Temperature Upper non-critical threshold no longer exceeded, 48
Upper critical threshold exceeded, 36, 39, 41
Upper critical threshold no longer exceeded, 37, 39, 41
Upper fatal threshold exceeded, 37, 40, 42
Upper fatal threshold no longer exceeded, 37, 40, 42
Upper noncritical threshold exceeded, 37, 39, 41
Upper noncritical threshold no longer exceeded, 37, 39, 42
Voltage Lower critical threshold has been exceeded, 50
Voltage Lower critical threshold no longer exceeded, 50
Voltage Lower fatal threshold has been exceeded, 49, 50
Voltage Lower fatal threshold no longer exceeded, 49, 50
Voltage Lower non-critical threshold has been exceeded, 50
Voltage Lower non-critical threshold no longer exceeded, 50
Voltage Upper critical threshold has been exceeded, 49
Voltage Upper critical threshold no longer exceeded, 50
Voltage Upper non-critical threshold has been exceeded, 50

P

PET event messages
overview, 45
See PET traps
PET traps
328448- Deassert, 49
petTrapACPIPowerStateS5G2SoftOffAssert, 46
petTrapEntityPresenceDeviceInsertedAssert, 47
petTrapFanLowerCriticalGoingHighDeassert, 51
petTrapFanLowerCriticalGoingLow, 51
petTrapFanLowerNonCriticalGoingHighDeassert, 51
petTrapFanLowerNonCriticalGoingLow, 51
petTrapFanLowerNonRecoverableGoingHighDeassert, 51
petTrapFanUpperNonRecoverableGoingHigh, 51
petTrapPowerSupplyStateAssertedAssert, 46
petTrapPowerUnitStateDeassertedAssert, 46
petTrapProcessorPresenceDetectedDeassert, 47
petTrapSystemBootPowerUp, 46
petTrapTemperatureLowerCriticalGoingHighDe

assert, 49
petTrapTemperatureLowerCriticalGoingLow, 48
petTrapTemperatureLowerNonCriticalGoingHighDeassert, 48
petTrapTemperatureLowerNonCriticalGoingLow, 48
petTrapTemperatureLowerNonRecoverableGoingHighDeassert, 49
petTrapTemperatureStateAssertedAssert, 48
petTrapTemperatureUpperCriticalGoingHigh, 48
petTrapTemperatureUpperCriticalGoingLowDeassert, 48
petTrapTemperatureUpperNonCriticalGoingHigh, 48
petTrapTemperatureUpperNonCriticalGoingLowDeassert, 48
petTrapTemperatureUpperNonRecoverableGoingHigh, 49
petTrapTemperatureUpperNonRecoverableGoingLowDeassert, 48
petTrapVoltageLowerCriticalGoingHighDeassert, 49
petTrapVoltageLowerCriticalGoingLow, 49
petTrapVoltageLowerNonCriticalGoingHighDeassert, 50
petTrapVoltageLowerNonCriticalGoingLow, 50
petTrapVoltageLowerNonRecoverableGoingHighDeassert, 50
petTrapVoltageStateAssertedAssert, 50
petTrapVoltageUpperCriticalGoingHigh, 50
petTrapVoltageUpperCriticalGoingLowDeassert, 50
petTrapVoltageUpperNonCriticalGoingHigh, 49
petTrapVoltageUpperNonCriticalGoingLowDeassert, 50
petTrapVoltageUpperNonRecoverableGoingHigh, 50
petTrapVoltageUpperNonRecoverableGoingLowDeassert, 50
Undocumented PET 328449, 49
Platform Event Trap
See PET traps
Preboot Menu, 16

R

related documents, vi

S

sensors and indicators
chassis, 27
cooling unit, 29
disk, 30
memory device, 31
power supply, 31
processor, 32
system board, 32
temperature, 33
serial port
setup requirements, 16
switching, 16
switching using the CLI, 18
switching using the web interface, 17
server faults
clearing, 19
clearing manually, 19
procedure for clearing, 20
removing top cover, 19
server sensors
/SYS, 36, 38, 42, 43
/SYS/ACPI, 32, 38, 45, 46
/SYS/DBP/HDDn/OK2RM, 30
/SYS/DBP/HDDn/PRSNT, 30, 47
/SYS/DBP/HDDn/SERVICE, 30
/SYS/DBP/PRSNT, 30, 47
/SYS/FAN_FAULT, 29
/SYS/FB/FANn/TACH, 43
/SYS/FB/FMn/Fn/TACH, 29, 51
/SYS/FB/FMn/OK, 29
/SYS/FB/FMn/PRSNT, 29, 47
/SYS/FB/FMn/SERVICE, 29
/SYS/FB/PRSNT, 29, 47
/SYS/HOT /SYS/PSn/V_OUT_OK, 45
/SYS/INTSW, 28, 43, 49
/SYS/LOCATE, 33
/SYS/MB, 35, 36
/SYS/MB/P/D, 35
/SYS/MB/Pn/Dn/PRSNT, 31, 47
/SYS/MB/Pn/Dn/SERVICE, 31
/SYS/MB/Pn/PRSNT, 32, 47
/SYS/MB/Pn/SERVICE, 32
/SYS/MB/RHDDn/PRSNT, 47
/SYS/MB/RHDDn/STATE, 44
/SYS/MB/RISER/PCIE, 44
/SYS/MB/RISER/PCIE/F20CARD, 44
/SYS/MB/RISERn/PCIEn/F20CARD/UPTIME

, 41, 42
/SYS/MB/RISERn/PCIEn/PRSNT, 47
/SYS/MB/RISERn/PCIen/PRSNT, 33
/SYS/MB/RISERn/PRSNT, 33, 47
/SYS/MB/T_AMB, 36, 37, 48, 49
/SYS/MB/T_OUT0, 33
/SYS/MB/T_OUT1, 33
/SYS/MB/T_OUT2, 33
/SYS/MB/T_OUTn, 36, 37, 48
/SYS/OK, 33
/SYS/PS, 36, 38
/SYS/PS_FAULT, 31
/SYS/PSn/CUR_FAULT, 31, 38, 46
/SYS/PSn/FAN_FAULT, 31, 38, 46
/SYS/PSn/I_IN, 31
/SYS/PSn/I_OUT, 32
/SYS/PSn/INPUT_POWER, 32
/SYS/PSn/PRSNT, 31, 47
/SYS/PSn/PWROK, 31, 38
/SYS/PSn/TEMP_FAULT, 31, 38, 46
/SYS/PSn/V_IN, 31, 39, 40, 49, 50
/SYS/PSn/V_OUT, 31, 39, 40, 49, 50
/SYS/PSn/VINOK, 31, 38
/SYS/PSn/VOLT_FAULT, 31, 38, 46
/SYS/PWRBS, 27, 38, 46
/SYS/SAS_EXP/PRSNT, 33, 47
/SYS/SERVICE, 33
/SYS/SP, 42, 43
/SYS/SP/SERVICE, 32
/SYS/SP/SP_NEEDS_REBOOT, 28, 43, 49
/SYS/T_AMB, 32, 36, 37
/SYS/TEMP_FAULT, 28
/SYS/VPS, 27
service action
unauthorized, 24
sideband management
advantage of using, 9
configuring using BIOS, 13
configuring using CLI, 12
configuring using web interface, 11
loss of connectivity, 10
ports available, 9
purpose, 9
special considerations, 10
SNMP trap messages
overview, 34
See SNMP traps
SNMP traps
sunHwTrapComponentError, 38, 45
sunHwTrapComponentFault, 35, 36, 38, 42, 44
sunHwTrapComponentFaultCleared, 36, 38, 43, 44
sunHwTrapComponentOk, 45
sunHwTrapFanSpeedCritThresholdDeasserted, 43
sunHwTrapFanSpeedCritThresholdExceeded, 43
sunHwTrapFanSpeedFatalThresholdDeasserted, 43
sunHwTrapFanSpeedFatalThresholdExceeded, 43
sunHwTrapHardDriveStatus, 44
sunHwTrapMemoryFault, 35
sunHwTrapMemoryFaultCleared, 35
sunHwTrapPowerSupplyError, 38
sunHwTrapPowerSupplyFault, 36, 38
sunHwTrapPowerSupplyFaultCleared, 36, 38
sunHwTrapPowerSupplyOk, 38
sunHwTrapSecurityIntrusion, 43
sunHwTrapSensorCritThresholdDeasserted, 41
sunHwTrapSensorCritThresholdExceeded, 41
sunHwTrapSensorFatalThresholdDeasserted, 42
sunHwTrapSensorFatalThresholdExceeded, 42
sunHwTrapSensorNonCritThresholdExceeded, 41
sunHwTrapTempCritThresholdDeasserted, 36, 37
sunHwTrapTempCritThresholdExceeded, 36
sunHwTrapTempFatalThresholdDeasserted, 37
sunHwTrapTempFatalThresholdExceeded, 37
sunHwTrapTempNonCritThresholdExceeded, 37
sunHwTrapTempOk, 37
sunHwTrapVoltageCritThresholdDeasserted, 39
sunHwTrapVoltageCritThresholdExceeded, 39
sunHwTrapVoltageFatalThresholdDeasserted, 40
sunHwTrapVoltageFatalThresholdExceeded, 40
sunHwTrapVoltageNonCritThresholdExceeded, 39
sunHwTrapVoltageOk, 39
SP degraded mode
definition, 25
SP needs reboot sensor
when it is asserted, 25
Spanning Tree Protocol

See STP
spanning tree recalculation, 10
STP, 10

T

TLI
auto-update, 18
FRUs, 18
top-level indicator
auto update
See TLI, 18