Oracle® Integrated Lights Out Manager (ILOM) 3.0

Supplement for Sun Fire X4470 Server

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Using This Documentation

This supplement contains information about Oracle Integrated Lights Out Manager (ILOM) 3.0 that is specific to Oracle's Sun Fire X4470 Server.

This document is intended for system administrators, network administrators, and service technicians who have an understanding of server systems.

- "Product Downloads" on page v
- "Documentation and Feedback" on page vi
- "Support and Training" on page vii

Product Downloads

You can find downloads for all Oracle x86 servers and server modules (blades) on My Oracle Support (MOS). On MOS, you can find two types of downloads:

- Software release bundles that are specific to a rackmount server, server module, modular system (blade chassis), or network express module (NEM). These software release bundles include Oracle Integrated Lights Out Manager (ILOM), Oracle Hardware Installation Assistant, and other platform software and firmware.
- Standalone software that is common across multiple types of hardware. This software includes the Hardware Management Pack and Hardware Management Connectors.

▼ Get Software and Firmware Downloads

1. **Go to (`http://support.oracle.com`).**

2. **Sign in to My Oracle Support.**
3. **At the top of the page, click the Patches and Updates tab.**
4. **In the Patches Search box, select Product or Family (Advanced Search).**
5. **In the Product? Is field, type a full or partial product name, for example Sun Fire X4470, until a list of matches appears, then select the product of interest.**
6. **In the Release? Is pull down list, click the Down arrow.**
7. **In the window that appears, click the triangle (>) by the product folder icon to display the choices, then select the release of interest.**
8. **In the Patches Search box, click Search.**

   A list of product downloads (listed as patches) appears.
9. **Select the patch name of interest, for example Patch 10266805 for the Sun Fire X4470 SW 1.2.1 release.**
10. **In the right-side pane that appears, click Download.**

Documentation and Feedback

Documentation	Link
All Oracle documentation	http://www.oracle.com/documentation
Sun Fire X4470 Server	http://www.oracle.com/pls/topic/lookup?ctx=E19694-01&id=homepage
Oracle Integrated Lights Out Manager (ILOM) 3.0	http://www.oracle.com/pls/topic/lookup?ctx=E19860-01&id=homepage

You can provide feedback on this documentation at:

http://www.oraclesurveys.com/se.ashx?s=25113745587BE578

Support and Training

These web sites provide additional resources:

- Support: https://support.oracle.com
- Training: https://education.oracle.com

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 X4470 Server supports the entire Oracle ILOM feature set provided in Oracle ILOM 3.0, with the exception of the Power Budget features. In addition, the server supports Oracle ILOM features that are specific to the Sun Fire X4470 Server.

For details on how to use the features that are common to all server platforms, refer to the Oracle ILOM 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 how to use the Oracle ILOM features that are specific to the Sun Fire X4470 Server, see Chapter 2.

Oracle ILOM 3.0 Common Feature Set Documentation Collection

TABLE 1-1 identifies the guides in the Oracle Integrated Lights Out Manager (ILOM) 3.0 Documentation Collection (formerly called Sun Integrated Lights Out Manager 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.
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)

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

http://www.oracle.com/pls/topic/lookup?ctx=E19860-01&id=homepage

CHAPTER 2

Oracle ILOM Platform Features for the Sun Fire X4470 Server

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 Oracle's Sun Fire X4470 Server.

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, 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 X4470 Server, are as follows:

- "Supported Sun Fire X4470 Server Firmware" on page 4
- "Hardware Management Pack for Single Server Management" on page 4
- "Power Management Policies" on page 7
- "Oracle ILOM Sideband Management" on page 11
- "Switch Serial Port Output Between SP and Host Console" on page 19
- "Server Chassis Intrusion Sensor" on page 21
- "Fault Management" on page 22
- "Sensors and Indicators Reference Information" on page 25
- "SNMP and PET Message Reference Information" on page 30

Supported Sun Fire X4470 Server Firmware

TABLE 2-1 identifies the supported Oracle ILOM and BIOS firmware versions supported on the Sun Fire X4470 Server.

TABLE 2-1 Supported Platform Firmware

Software Release	Oracle ILOM SP Firmware	BIOS Firmware
1.0	3.0.9.10	9.1.25.11
1.1	3.0.9.25	9.2.1.15
1.2.1	3.0.14.10a	9.3.1.15

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/pls/topic/lookup?ctx=E19860-01&id=homepage

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) Plug-ins 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
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.	Host OS-level fwupdate CLI

*Supported host operating systems include: Oracle Solaris, Linux, Windows, and VMware

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

Server Management Task From Host OS*	Hardware Management Pack Implementation	Tool
Restore, set, and view Oracle ILOM configuration settings	Use the 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 IPMItool

*Supported host operating systems include: Oracle Solaris, Linux, Windows, and VMware

Download Hardware Management Pack Software

Navigate to the following web site to download the Hardware Management Pack software.

http://support.oracle.com

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 Tools and IPMItool 2.0 User's Guide*

For additional details about how to use the Storage Monitoring features in Oracle ILOM, see the *Oracle Integrated Lights Out Manager (ILOM) 3.0 Concepts Guide* and the *Oracle Integrated Lights Out Manager (ILOM) 3.0 CLI Procedures Guide*.

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*.

Power Management Policies

This release of Oracle ILOM 3.0 software provides new Power Management policies that are supported on the Sun Fire X4470 Server.

For more information about the latest Oracle ILOM 3.0 Power Management policies, see the *Oracle Integrated Lights Out Manager (ILOM 3.0) Feature Updates and Release Notes*.

This section includes the following topics:

- "Host Power Throttling and Recovery" on page 7
- "Service Processor Power-On Policy" on page 7
- "Light Load Efficiency Mode" on page 8
- "Low Line AC Override Mode Policy" on page 9
- "Configure SP Power Management Policies Using the Web Interface" on page 9
- "Configure SP Power Management Policies Using the CLI" on page 10

Host Power Throttling and Recovery

The Sun Fire X4470 Server supports a simple mechanism to automatically apply hardware throttles to the CPUs and memory controllers when power exceeds the rated capacity of the available power supplies. This can occur when a redundant power supply has failed or has been removed from the system.

When the server's hardware (power CPLD) determines that power demand has exceeded the system's available power, it automatically throttles the host processor to reduce its power consumption. The service processor (SP) removes this hardware throttle after it has been applied for 5 seconds. Host power throttling and recovery continues until such action is no longer needed.

Service Processor Power-On Policy

The service processor (SP) power-on policy determines the power state of the server when a cold boot is performed on the server. A server cold boot occurs only when AC power is applied to the server.

Service processor power-on policies are mutually exclusive, meaning that if one policy is enabled, the other policy is disabled by default. If both policies are disabled, then the server SP will not apply main power to the server at boot time. A brief description of the SP power-on policies and default settings follows:

- **Auto Power-On Host On Boot** – When this option is enabled, the SP automatically applies main power to the server. When disabled (default), main power is not applied to the server.
- **Set Host Power to Last Power State On Boot** – When this option is enabled, the SP automatically applies main power to the server based on the last power state of the server. The SP automatically tracks the last power state and restores the server to its last remembered power state following a power state change of at least 10 seconds. When disabled (default), the last power state is not applied to the server.

You can configure SP power-on policies using the Oracle ILOM web interface or the Oracle ILOM command-line interface (CLI). For instructions, see the following sections:

- "Configure SP Power Management Policies Using the Web Interface" on page 9
- "Configure SP Power Management Policies Using the CLI" on page 10

Light Load Efficiency Mode

Light Load Efficiency Mode (LLEM) increases system power efficiency by placing power supply unit 1 (PSU1) in warm-standby mode when the system is lightly loaded. LLEM is disabled by default on the Sun Fire X4470 Server.

When PSU1 is in warm-standby mode, PSU0 carries the entire power load. If PSU0 loses AC power or is extracted for replacement, PSU1 takes over the load automatically.

Note – In rare instances, an internal failure might cause PSU0 to lose power faster than PSU1 can take over the load.

Disabling LLEM forces the PSUs to share the power load at all times, causing reduced efficiency during light power loads.

You can configure LLEM using the Oracle ILOM web interface or the Oracle ILOM command-line interface (CLI). For instructions, see the following sections:

- "Configure SP Power Management Policies Using the Web Interface" on page 9
- "Configure SP Power Management Policies Using the CLI" on page 10

Low Line AC Override Mode Policy

The Low Line AC Override Mode policy setting is provided to enable special test scenarios of a 4-CPU system using low-line (110 volt) power. Low-line voltage is normally supported only in 2-CPU system configurations. The capacity of each power supply unit (PSU) is roughly 1000 watts at low line. Since the power of a 4-CPU system can exceed 1000 watts by a large amount, enabling this setting results in a loss of PSU redundancy. This setting is disabled by default on the Sun Fire X4470 Server.

Note – The server is rated to have a maximum AC input current of 12 amps (with one or both PSUs working). When the Low Line AC Override policy is enabled, a 4-CPU system can require more than 12 amps total current for both PSUs. In any case, each AC inlet will not exceed 12 amps.

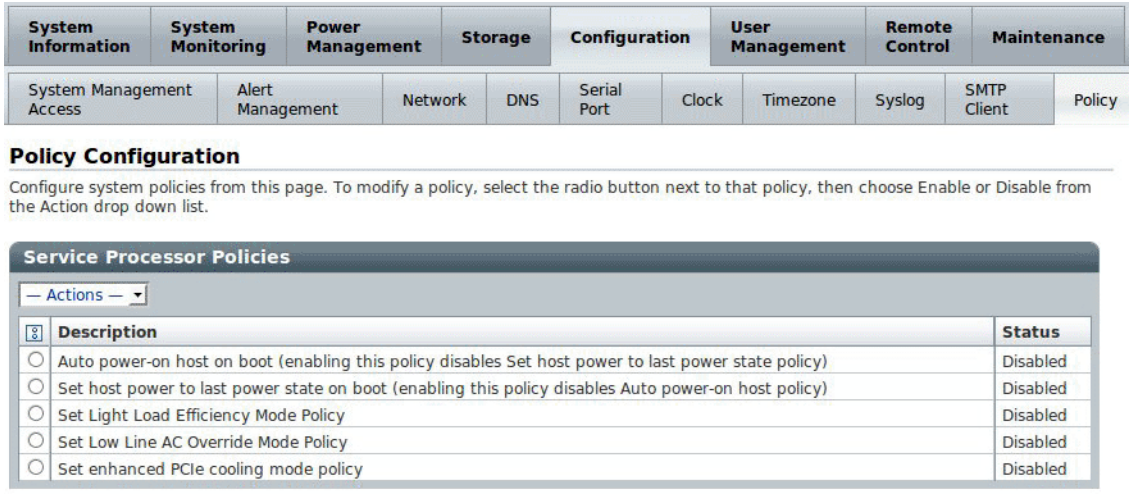
You can configure Low Line AC Override policy setting using the Oracle ILOM web interface or the Oracle ILOM command-line interface (CLI). For instructions, see the following sections:

- "Configure SP Power Management Policies Using the Web Interface" on page 9
- "Configure SP Power Management Policies Using the CLI" on page 10

▼ Configure SP Power Management Policies Using the Web Interface

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

   The Policy Configuration page appears.



3. **Depending on the SP policy you want to configure, do the following:**
   - To configure Auto power-on host on boot, select its radio button, then click the Actions drop-down menu and select Enable or Disable.
   - To configure Set host power to last power state on boot, select its radio button, then click the Actions drop-down menu and select Enable or Disable.
   - To configure Set Light Load Efficiency Mode Policy, select its radio button, then click the Actions drop-down menu and select Enable or Disable.
   - To configure Set Low Line AC Override Mode Policy, select its radio button, then click the Actions drop-down menu and select Enable or Disable.
4. **Click OK to enable or disable the SP policy.**

▼ Configure SP Power Management Policies Using the CLI

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

2. **To show the current power policy settings, type:**

   -> **show /SP/policy**

   The SP policy properties appear. For example:

```
 /SP/policy
    Targets:

    Properties:
    HOST_AUTO_POWER_ON = disabled
    HOST_LAST_POWER_STATE = disabled
    LIGHT_LOAD_EFFICIENCY_MODE = enabled
    LOW_LINE_AC_OVERRIDE_MODE = disabled

    Commands:
    cd
    set
    show
->
```

   In the above output, Host Auto Power On is `disabled`, Host Last Power State is `disabled`, Light Load Efficiency Mode is `enabled`, and Low Line AC Override Mode is `disabled`.

3. **Depending on the SP policy you want to configure, do the following:**

   - To enable or disable Host Auto Power On, type:

     -> **set /SP/policy/ HOST_AUTO_POWER_ON=[enabled|disabled]**

   - To enable or disable Host Last Power State, type:

     -> **set /SP/policy/ HOST_LAST_POWER_STATE=[enabled|disabled]**

   - To enable or disable Light Load Efficiency Mode, type:

     -> **set /SP/policy/ LIGHT_LOAD_EFFICIENCY_MODE=[enabled|disabled]**

   - To enable or disable Low Line AC Override Mode, type:

     -> **set /SP/policy/ LOW_LINE_AC_OVERRIDE_MODE=[enabled|disabled]**

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 numerous 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 12
- "Configure Sideband Management Using the Web Interface" on page 13
- "Configure Sideband Management Using the CLI" on page 14
- "Configure Sideband Management Using the Host BIOS Setup Utility" on page 16

Special Considerations for Sideband Management

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

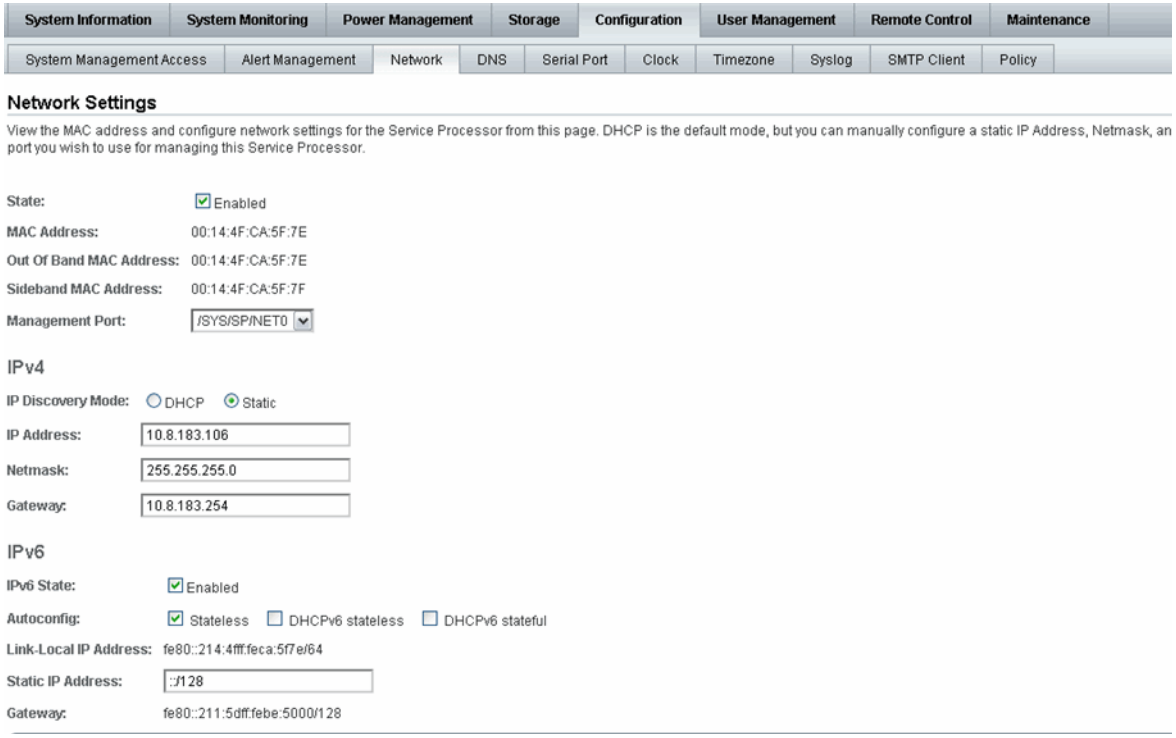
- Connectivity to the server SP might be lost when the SP management port configuration is changed while you are connected to the SP using a network connection, such as SSH, web, or Oracle ILOM Remote Console.
- In-chip connectivity between the SP and the host operating system might not be supported 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 Oracle ILOM using the web interface.**
2. **Select Configuration --> Network.**

   The Network Settings page appears.



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

   a. **Configure a static IP address or select the appropriate options to acquire an IP address automatically.**

   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 X4470 Server 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 use this interface, you must know the IP address of the server. For instructions on viewing the server IP address, see the *Sun Fire X4470 Server Installation Guide*.

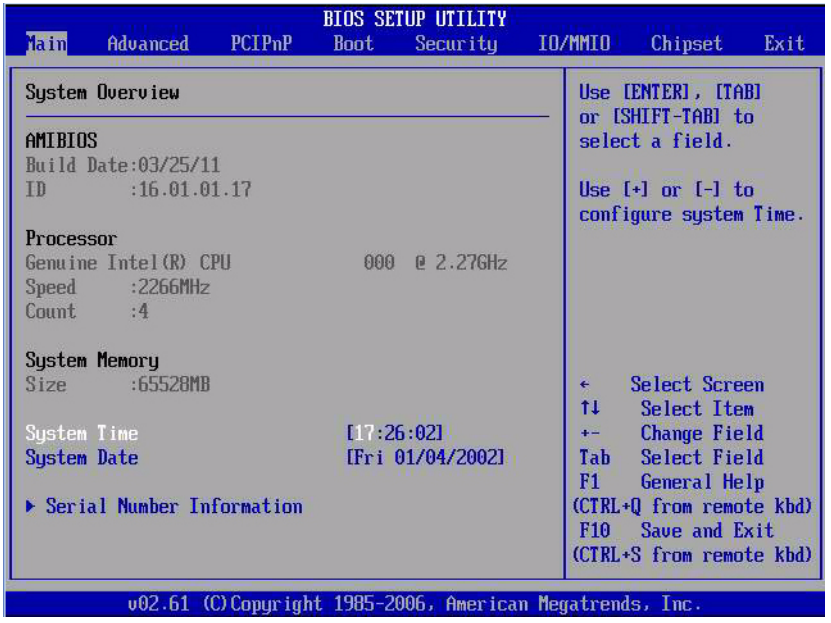
To configure sideband management using the host BIOS Setup Utility, perform the following steps:

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).**

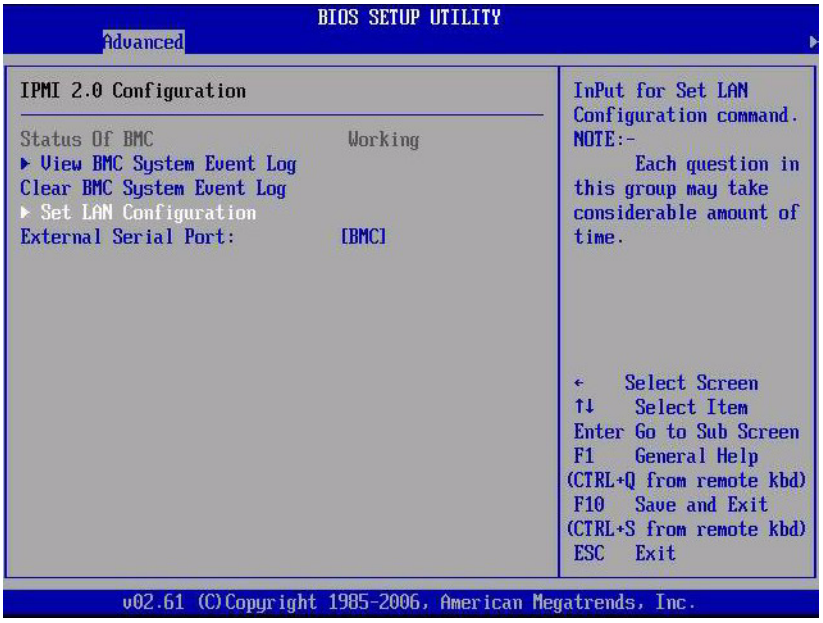
```
Initializing USB Controllers .. Done.
Press F2 to run Setup (CTRL+E on Remote Keyboard)
Press F8 for BBS POPUP  (CTRL+P on Remote Keyboard)
Press F12 to boot from the network (CTRL+N on Remote Keyboard)
```

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.

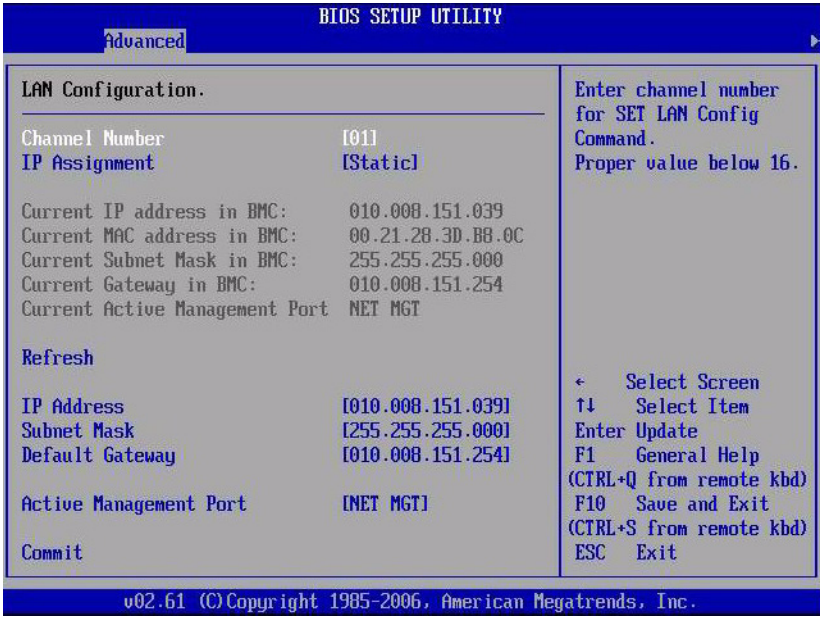


3. **In the main screen, select Advanced --> IPMI 2.0 Configuration.**

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 to acquire the IP address automatically, or set it to Static if manually specifying the IP address.**

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 X4470 Server 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 20
- "Switch Serial Port Output Using the CLI" on page 21

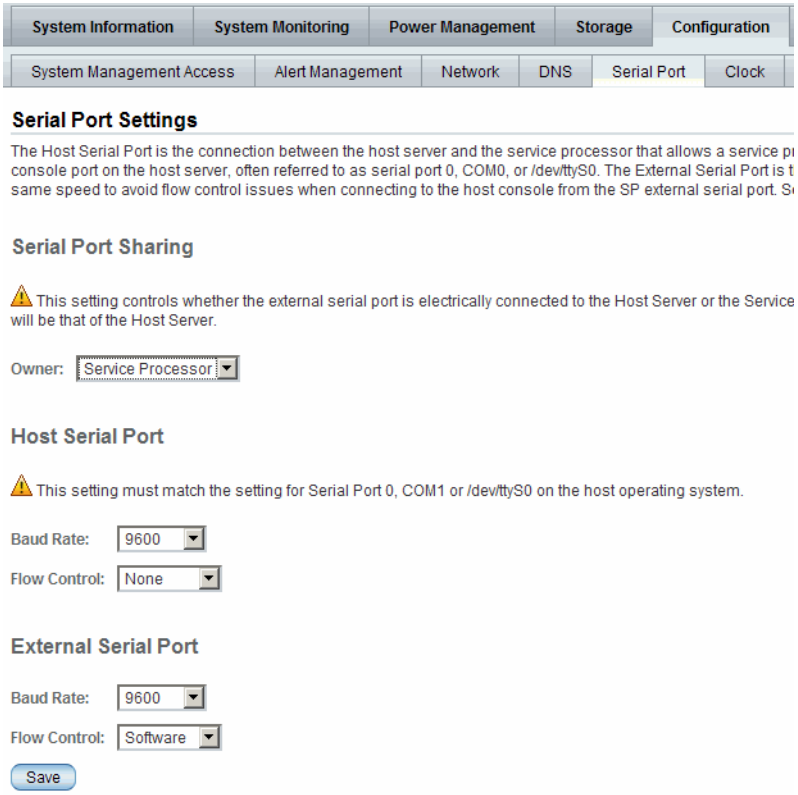
Caution – You should set up the network on the SP before attempting to switch the serial port owner to the host server. If a network is not set up, and you switch the serial port owner to the host server, you will be unable to connect using the CLI or web interface to change the serial port owner back 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 more information, see the Oracle ILOM Preboot Menu information in the *Sun Fire X4470 Server Service Manual*.

▼ Switch Serial Port Output Using the Web Interface

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

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

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

   By default, `owner=SP`.

Server Chassis Intrusion Sensor

The `/SYS/INTSW` sensor is asserted when the server's top cover is removed while power is being applied to the server. This is an improper service action so this sensor serves to alert you to any unauthorized and inadvertent removal of the server's cover. Thus, this sensor enables 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.

Note – The server cannot be powered on when the server top cover is off and the `/SYS/INTSW` sensor is asserted. If the server's top cover is removed while the server is powered-on, the host will immediately employ a non-graceful shutdown to power off the server.

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 deasserted 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 cord is 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 the `/SYS/INTSW` sensor asserted unless there are other issues, such as a misaligned chassis intrusion switch.

Fault Management

When a server component fails, error telemetry is either captured via the BIOS or is monitored by the Oracle ILOM SP. Oracle ILOM consumes error telemetry from both sources and provides diagnosis in the form of a fault event. The fault event is stored in the Oracle ILOM event log as a fault message. You can use either the Oracle ILOM web interface or the command-line interface (CLI) to manually clear faults.

This section includes the following topics. The first four topics describe how to examine and clear faults, while the last topic provides reference information for sensors and indicators.

- "Determining Faults" on page 22
- "Clearing Faults" on page 23
- "Components With No Fault Diagnosis" on page 24
- "Viewing Sensors Using IPMItool" on page 25

Determining Faults

When a system fault occurs, you can view system indicators and use the Oracle ILOM CLI or web interface to determine the fault:

- **LEDs** – The Service Required LED will always be illuminated, and the component or subsystem-specific Service LED will be illuminated when applicable.
- **Oracle ILOM CLI** – Examine fault messages in the Oracle ILOM event log or see a fault summary.

  For example:

  - To view the Oracle ILOM event log, log in to the Oracle ILOM CLI and type:
    `show /SP/logs/event/list`
  - To view a fault summary, log in to the Oracle ILOM CLI and type:
    `show /SP/faultmgmt`
- **Oracle ILOM web interface** – Examine fault messages in the Oracle ILOM event log or see a fault summary.

  For example:

  - To view the Oracle ILOM event log, log in to the Oracle ILOM web interface and select:
    System Monitoring --> Event Logs
  - To view a fault summary, log in to the Oracle ILOM web interface and select:
    System Information --> Fault Management

Clearing Faults

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

1. Customer-replaceable units (CRUs) that are hot-swappable and are monitored by the SP will have their faults cleared automatically when the failed component is replaced and the updated status is reported as deasserted.
2. CRUs and field-replaceable units (FRUs) that have a FRUID container with identity information will have their faults cleared automatically when the failed component is replaced, as the SP is able to determine when a component is no longer present in the system.
3. CRUs and FRUs that are not hot-swappable or lack a FRUID container with identity information will not have their faults cleared automatically.

You can use the Oracle ILOM web interface or the command-line interface (CLI) to manually clear faults. For information on how to use the Oracle ILOM web interface or the CLI to clear server faults, see the Oracle ILOM 3.0 Documentation Collection at:

http://www.oracle.com/pls/topic/lookup?ctx=E19860-01&id=homepage

The following types of faults are diagnosed by the Oracle ILOM SP:

- **Environmental events** – Fan modules, power supplies, ambient temperature, AC power loss, and chassis intrusion switch
- **Memory Reference Code (MRC) errors and warnings** – Memory initialization and population
- **I/O Hub (IOH) uncorrectable error events** – Motherboard
- **Memory ECC uncorrectable and correctable events** – Memory DIMMs
- **CPU uncorrectable error events** – Processor
- **Boot progress events** – Power-on, power-off, IPMI, MRC, QPI, BIOS, setup, and boot retries
- **Service Processor error events** – Oracle ILOM

TABLE 2-3 lists the server component faults that are persistent after a system cold boot and the action to clear the fault.

TABLE 2-3 Component Fault Events

Component	Action to Clear the Fault
Motherboard	Fault is automatically cleared upon component replacement
Memory riser	Fault is automatically cleared upon component replacement
Fan board	Fault is automatically cleared upon component replacement

TABLE 2-3 Component Fault Events *(Continued)*

Component	Action to Clear the Fault
DDR3 Memory DIMMs	Fault is automatically cleared upon component replacement
CPU module	Clear fault manually after component replacement
PCIe cards	Clear fault manually after component replacement
Fan module	Fault is automatically cleared when the sensor status is OK
Power supply	Fault is automatically cleared when the sensor status is OK
Disk drive	Fault is automatically cleared when the sensor status is OK

In addition to the above faults, 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. To clear this fault, replace the server's top cover and either reboot the server's SP or remove the AC power cords, and then reconnect the power cords.

Components With No Fault Diagnosis

Certain Sun Fire X4470 Server components do not provide a mechanism to diagnose faults. These include:

- Disk backplane
- DVD player
- Disk drive
- Power supply backplane
- Lithium battery for host and SP real-time clocks

Viewing Sensors Using IPMItool

Sun Fire X4470 Server sensors can be viewed using IPMItool. For information and instructions for viewing sensors using IPMItool, see the *Oracle Integrated Lights Out Manager (Oracle ILOM) 3.0 Management Protocols Reference Guide*.

Sensors and Indicators Reference Information

The server includes several sensors and indicators 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 and indicators that Oracle ILOM monitors for the Sun Fire X4470 Server.

The following types of sensors are described:

- "System Components" on page 25
- "System Indicators" on page 26
- "Temperature Sensors" on page 27
- "Power Supply Fault Sensors" on page 27
- "Fan Speed, and Physical Security Sensors" on page 28
- "Power Supply Unit Current, Voltage, and Power Sensors" on page 29
- "Entity Presence Sensors" on page 29

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 the *Oracle Integrated Lights Out Manager (ILOM) 3.0 Web Interface Procedures Guide*.

System Components

TABLE 2-4 describes the system components.

TABLE 2-4 System Components

Component Name	Description
/SYS/DBP	Disk backplane
/SYS/DBP/HDD*n*	Hard disks *n*
/SYS/FB	Fan board
/SYS/FB/FAN*n*	Fan *n*

TABLE 2-4 System Components *(Continued)*

Component Name	Description
/SYS/MB	Motherboard
/SYS/MB/NET*n*	Host network interfaces *n*
/SYS/MB/P*n*	Processor *n*
/SYS/MB/P*n*/MR*n*	Processor *n*; Memory riser *n*
/SYS/MB/P*n*/MR*n*/D*n*	Processor *n*; Memory riser *n*; DIMM *n*
/SYS/MB/PCIE[*n*, CC]	PCIe slot *n*, or cluster card
/SYS/PS*n*	Power supply *n*
/SYS/SP	Service processor
/SYS/SP/NET*n*	SP network interface *n*

System Indicators

TABLE 2-5 describes the system indicators.

TABLE 2-5 System Indicators

Indicator Name	Description
/SYS/CPU_FAULT	System CPU Fault LED
/SYS/DBP/HDD*n*/OK2RM	Hard disk *n* OK-to-Remove LED
/SYS/DBP/HDD*n*/ SERVICE	Hard disk *n* Service LED
/SYS/FAN_FAULT	System fan Fault LED
/SYS/FB/FAN*n*/OK	Fan *n* OK LED
/SYS/FB/FAN*n*/SERVICE	Fan *n* Service LED
/SYS/LOCATE	System Locate indicator LED
/SYS/MB/P*n*/SERVICE	Processor *n* Service LED
/SYS/MB/P*n*/MR*n*/ SERVICE	Processor *n*; Memory riser *n* Service LED
/SYS/MB/P*n*/MR*n*/D*n*/ SERVICE	Processor *n*; Memory riser *n*; DIMM *n*; Service indicator
/SYS/MEMORY_FAULT	System memory Fault LED
/SYS/OK	System OK LED

TABLE 2-5 System Indicators *(Continued)*

Indicator Name	Description
/SYS/PS_FAULT	System power supply Fault LED
/SYS/SERVICE	System Service LED
/SYS/SP/OK	SP OK LED
/SYS/SP/SERVICE	SP Service LED
/SYS/TEMP_FAULT	System temperature Fault LED

Temperature Sensors

TABLE 2-6 describes the environmental sensors.

TABLE 2-6 Temperature Sensors

Sensor Name	Sensor Type	Description
/SYS/DBP/T_AMB	Temperature	Disk back plane ambient temperature sensor
/SYS/MB/T_OUT*n*	Temperature	Motherboard exhaust temperature *n* sensor **Note -** These sensors are located in the rear of the chassis.
/SYS/T_AMB	Temperature	System ambient temperature sensor **Note -** This sensor is located on the underside of the fan board.
/SYS/PS*n*/T_OUT	Temperature	Power supply *n* exhaust temperature sensors

Power Supply Fault Sensors

TABLE 2-7 describes the power supply fault sensors. In the table, *n* designates the numbers 0-1.

TABLE 2-7 Power Supply Sensors

Sensor Name	Sensor Type	Description
/SYS/PS*n*/V_OUT_OK	Fault	Power supply *n* output voltage OK
/SYS/PS*n*/V_IN_ERR	Fault	Power supply *n* input voltage error
/SYS/PS*n*/V_IN_WARN	Fault	Power supply *n* input voltage warning

TABLE 2-7 Power Supply Sensors *(Continued)*

Sensor Name	Sensor Type	Description
/SYS/PS*n*/V_OUT_ERR	Fault	Power supply *n* output voltage error
/SYS/PS*n*/I_OUT_ERR	Fault	Power supply *n* output current error
/SYS/PS*n*/I_OUT_WARN	Fault	Power supply *n* output current warning
/SYS/PS*n*/T_ERR	Fault	Power supply *n* temperature error
/SYS/PS*n*/T_WARN	Fault	Power supply *n* temperature warning
/SYS/PS*n*/FAN_ERR	Fault	Power supply *n* fan error
/SYS/PS*n*/FAN_WARN	Fault	Power supply *n* fan warning
/SYS/PS*n*/ERR	Fault	Power supply *n* error

Fan Speed, and Physical Security Sensors

TABLE 2-8 describes the fan and security sensors. In the table, *n* designates numbers 0, 1, 2, etc.

TABLE 2-8 Fan and Security Sensors

Sensor Name	Sensor Type	Description
/SYS/FB/FAN*n*/TACH	Fan speed	Fan board; Fan *n* tachometer
/SYS/INTSW	Physical security	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 Sensor" on page 21.

Power Supply Unit Current, Voltage, and Power Sensors

TABLE 2-9 describes the power supply unit current, voltage, and power sensors. In the table, *n* designates numbers 0-1.

TABLE 2-9 Power Supply Unit Current, Voltage, and Power Sensors

Sensor Name	Sensor Type	Description
/SYS/PS*n*/V_IN	Voltage	Power supply *n* AC input voltage sensor
/SYS/PS*n*/V_12V	Voltage	Power supply *n* 12 volt output sensor
/SYS/PS*n*/V_3V3	Voltage	Power supply *n* 3.3 volt output sensor
/SYS/PS*n*/P_IN	Power	Power supply *n* input power sensor
/SYS/PS*n*/P_OUT	Power	Power supply *n* output power sensor
/SYS/VPS	Power	Server total input power consumption sensor

Entity Presence Sensors

TABLE 2-10 describes the entity presence sensors. In the table, *n* designates numbers 0, 1, 2, etc.

TABLE 2-10 Presence Sensors

Sensor Name	Sensor Type	Description
/SYS/DBP/HDD*n*/PRSNT	Entity presence	Hard drive device present monitor
/SYS/DBP/PRSNT	Entity presence	Disk backplane present monitor
/SYS/FB/FAN*n*/PRSNT	Entity presence	Fan board; Fan *n* present monitor
/SYS/MB/P*n*/PRSNT	Entity presence	Motherboard; CPU *n* present monitor
/SYS/MB/P*n*/MR*n*/PRSNT	Entity presence	Motherboard; CPU *n*; Memory riser *n* present monitor
/SYS/MB/P*n*/MR*n*/D*n*/PRSNT	Entity presence	Motherboard; CPU *n*; Memory riser *n*; DIMM *n* present monitor
/SYS/MB/PCIE*n*/PRSNT	Entity presence	PCIe card *n* present monitor **Note -** *n* represents PCIe cards 0-9 or the cluster controller (cc) card.
/SYS/PS*n*/PRSNT	Entity presence	Power supply *n* present monitor

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 being monitored by Oracle ILOM.

- "SNMP Traps" on page 30
- "PET Event Messages" on page 37

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. For more information about the SNMP event messages that might be generated on your system, see TABLE 2-11.

TABLE 2-11 SNMP Traps and Corresponding Oracle ILOM Events for Sun Fire X4470 Server

SNMP Trap Message	Oracle ILOM Event Message	Severity and Description	Sensor Name
Memory Events			
sunHwTrapComponentFault	fault.memory.intel.boot-setup-init-failed	Major; A component is suspected of causing a fault	/SYS/
	fault.memory.intel.boot-retries-failed		
	fault.memory.intel.dimm.none		/SYS/MB
	fault.memory.controller.input-invalid		
	fault.memory.controller.init-failed		

TABLE 2-11 SNMP Traps and Corresponding Oracle ILOM Events for Sun Fire X4470 Server *(Continued)*

SNMP Trap Message	Oracle ILOM Event Message	Severity and Description	Sensor Name
sunHwTrapComponentFault Cleared	fault.memory.intel.boot-setup-init-failed	Informational; A component fault has been cleared	/SYS/
	fault.memory.intel.boot-retries-failed		
	fault.memory.intel.dimm.none		/SYS/MB
	fault.memory.controller.input-invalid		
	fault.memory.controller.init-failed		
Service Processor Events			
sunHwTrapComponentFault	fault.chassis.device.misconfig	Major; A component is suspected of causing a fault	/SYS/SP
	fault.sp.failed		
sunHwTrapComponentFault Cleared	fault.chassis.device.misconfig	Informational; A component fault has been cleared	
	fault.sp.failed		
Environmental Events			
sunHwTrapComponentFault	fault.chassis.env.temp.over-fail	Major; A component is suspected of causing a fault	/SYS/
sunHwTrapComponentFault Cleared	fault.chassis.env.temp.over-fail	Informational; A component fault has been cleared	/SYS/
sunHwTrapTempCrit ThresholdExceeded	Lower critical threshold exceeded	Major; 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_OUT /SYS/DBP/T_AMB
	Upper critical threshold exceeded		/SYS/MB/T_OUT /SYS/T_AMB /SYS/DBP/T_AMB
sunHwTrapTempCrit ThresholdDeasserted	Lower critical threshold no longer exceeded	Informational; A temperature sensor has reported that its value is in the normal operating range	/SYS/MB/T_OUT /SYS/DBP/T_AMB
	Upper critical threshold no longer exceeded		/SYS/MB/T_OUT /SYS/T_AMB /SYS/DBP/T_AMB

TABLE 2-11 SNMP Traps and Corresponding Oracle ILOM Events for Sun Fire X4470 Server *(Continued)*

SNMP Trap Message	Oracle ILOM Event Message	Severity and Description	Sensor Name
sunHwTrapTempNonCrit ThresholdExceeded	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_OUT /SYS/DBP/T_AMB
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_OUT /SYS/DBP/T_AMB
sunHwTrapTempFatal ThresholdExceeded	Lower fatal threshold exceeded	Critical; A temperature sensor has reported that its value has gone above an upper fatal threshold setting or below a lower fatal threshold setting	/SYS/MB/T_OUT /SYS/DBP/T_AMB
	Upper fatal threshold exceeded		/SYS/MB/T_OUT /SYS/T_AMB /SYS/DBP/T_AMB
sunHwTrapTempFatal ThresholdDeasserted	Lower fatal threshold no longer exceeded	Informational; A temperature sensor has reported that its value has gone below an upper fatal threshold setting or above a lower fatal threshold setting	/SYS/MB/T_OUT /SYS/DBP/T_AMB
	Upper fatal threshold no longer exceeded		/SYS/MB/T_OUT /SYS/T_AMB /SYS/DBP/T_AMB
System Power Events			
sunHwTrapComponentFault	fault.chassis.power.missing	Major; A component is suspected of causing a fault	/SYS/
	fault.chassis.power.overcurrent		
	fault.chassis.power.inadequate		
sunHwTrapComponentFault Cleared	fault.chassis.power.missing	Informational; A component fault has been cleared	/SYS/
	fault.chassis.power.overcurrent		
	fault.chassis.power.inadequate		
sunHwTrapPowerSupplyFault	fault.chassis.env.power.loss	Major; A power supply component is suspected of causing a fault	/SYS/PS
	fault.chassis.power.ac-low-line		
	fault.chassis.device.wrong		

TABLE 2-11 SNMP Traps and Corresponding Oracle ILOM Events for Sun Fire X4470 Server *(Continued)*

SNMP Trap Message	Oracle ILOM Event Message	Severity and Description	Sensor Name
sunHwTrapPowerSupplyFault Cleared	fault.chassis.env.power.loss	Informational; A power supply component fault has been cleared	/SYS/PS
	fault.chassis.power.ac-low-line		
	fault.chassis.device.wrong		
sunHwTrapPowerSupplyError	Assert	Major; A power supply sensor has detected an error	/SYS/PWRBS /SYS/PS*n*/ V_IN_ERR /SYS/PS*n*/ V_IN_WARN /SYS/PS*n*/ V_OUT_ERR /SYS/PS*n*/ I_OUT_ERR /SYS/PS*n*/ I_OUT_WARN /SYS/PS*n*/T_ERR /SYS/PS*n*/ T_WARN /SYS/PS*n*/ FAN_ERR /SYS/PS*n*/ FAN_WARN /SYS/PS*n*/ERR
	Deassert		/SYS/PS*n*/ V_OUT_OK

TABLE 2-11 SNMP Traps and Corresponding Oracle ILOM Events for Sun Fire X4470 Server *(Continued)*

SNMP Trap Message	Oracle ILOM Event Message	Severity and Description	Sensor Name
sunHwTrapPowerSupplyOk	Deassert	Informational; A power supply sensor has returned to its normal state	/SYS/PWRBS /SYS/PS*n*/ V_IN_ERR /SYS/PS*n*/ V_IN_WARN /SYS/PS*n*/ V_OUT_ERR /SYS/PS*n*/ I_OUT_ERR /SYS/PS*n*/ I_OUT_WARN /SYS/PS*n*/T_ERR /SYS/PS*n*/ T_WARN /SYS/PS*n*/ FAN_ERR /SYS/PS*n*/ FAN_WARN /SYS/PS*n*/ERR
	Assert		/SYS/PS*n*/ V_OUT_OK
sunHwTrapComponentError	ACPI_ON_WORKING ASSERT	Major; A sensor has detected an error	/SYS/ACPI
	ACPI_ON_WORKING DEASSERT		
	ACPI_SOFT_OFF ASSERT		
	ACPI_SOFT_OFF DEASSERT		
Entity Presence Events			
UNKNOWN	ENTITY_PRESENT ASSERT	Informational	/SYS/MB/P*n*/ PRSNT /SYS/MB/P*n*/MR*n* /PRSNT /SYS/MB/PCIE*n*/ PRSNT /SYS/MB/ PCIE_CC/PRSNT
	ENTITY_PRESENT DEASSERT		
	ENTITY_ABSENT ASSERT		
	ENTITY_ABSENT DEASSERT		
	ENTITY_DISABLED ASSERT		
	ENTITY_DISABLED DEASSERT		

TABLE 2-11 SNMP Traps and Corresponding Oracle ILOM Events for Sun Fire X4470 Server *(Continued)*

SNMP Trap Message	Oracle ILOM Event Message	Severity and Description	Sensor Name
Fans, Hard Drives, and Physical Security Events			
sunHwTrapComponentFault	fault.chassis.device.fan.column -fail	Major; A component is suspected of causing a fault	/SYS
	fault.security.enclosure-open		
sunHwTrapComponentFault Cleared	fault.chassis.device.fan.column -fail	Informational; A component fault has been cleared	/SYS/
	fault.security.enclosure-open		
UNKNOWN	Assert	Informational	/SYS/MB/PCIE*n*/WIDTH /SYS/ESMR/ESM/FAULT
	Deassert		
sunHwTrapSecurityIntrusion	CHASSIS_INTRUSION ASSERT	Major; An intrusion sensor has detected that someone may have physically tampered with the system	/SYS/INTSW
	CHASSIS_INTRUSION DEASSERT		

TABLE 2-11 SNMP Traps and Corresponding Oracle ILOM Events for Sun Fire X4470 Server *(Continued)*

SNMP Trap Message	Oracle ILOM Event Message	Severity and Description	Sensor Name
sunHwTrapFanSpeedCrit ThresholdExceeded	Lower critical threshold exceeded	Major; A fan speed sensor has reported that its value has gone above an upper critical threshold setting or below a lower critical threshold setting	/SYS/FB/FAN*n*/ TACH
sunHwTrapFanSpeedCrit ThresholdDeasserted	Lower critical threshold no longer exceeded	Informational; A fan speed sensor has reported that its value has gone below an upper critical threshold setting or above a lower critical threshold setting	
sunHwTrapFanSpeedFatal ThresholdExceeded	Lower fatal threshold exceeded	Critical; A fan speed sensor has reported that its value has gone above an upper fatal threshold setting or below a lower fatal threshold setting	
sunHwTrapFanSpeedFatal ThresholdDeasserted	Lower fatal threshold no longer exceeded	Informational; A fan speed sensor has reported that its value has gone below an upper fatal threshold setting or above a lower fatal threshold setting	
System Chassis and I/O Events			
sunHwTrapComponentFault	fault.chassis.boot.ipmi-init-failed	Major; A component is suspected of causing a fault	/SYS/
	fault.io.quickpath.qpirc-init-failed		
	fault.io.quickpath.qpirc-failed		
	fault.io.quickpath.mrc-failed		

TABLE 2-11 SNMP Traps and Corresponding Oracle ILOM Events for Sun Fire X4470 Server *(Continued)*

SNMP Trap Message	Oracle ILOM Event Message	Severity and Description	Sensor Name
sunHwTrapComponentFault Cleared	fault.chassis.boot.ipmi-init-failed	Informational; A component fault has been cleared	/SYS/
	fault.io.quickpath.qpirc-init-failed		
	fault.io.quickpath.qpirc-failed		
	fault.io.quickpath.mrc-failed		

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 TABLE 2-12.

TABLE 2-12 PET Messages and Corresponding Oracle ILOM Events for Sun Fire X4470 Server

PET Message	Oracle ILOM Event Message	Severity and Description	Sensor Name
System Power Events			
petTrapACPIPowerStateS5G2 SoftOffAssert	SystemACPI 'ACPI_ON_WORKING'	Informational; System ACPI Power State S5/G2 (soft-off) was asserted	/SYS/ACPI
petTrapACPIPowerStateS5G2 SoftOffDeassert	System ACPI Power State : ACPI : S5/G2: soft-off : Deasserted	Informational; System ACPI Power State S5/G2 (soft-off) was deasserted	
petTrapACPIPowerStateS0G0 WorkingAssert	System ACPI Power State : ACPI : S0/G0: working : Asserted	Informational; System ACPI Power State S0/G0 (working)	
petTrapACPIPowerStateS0G0 WorkingDeassert	System ACPI Power State : ACPI : S0/G0: working : Deasserted	Informational; System ACPI Power State S0/G0 (working) was deasserted	

TABLE 2-12 PET Messages and Corresponding Oracle ILOM Events for Sun Fire X4470 Server *(Continued)*

PET Message	Oracle ILOM Event Message	Severity and Description	Sensor Name
petTrapPowerSupplyState AssertedAssert	PowerSupply sensor DEASSERT	Informational; Power Supply is connected to AC Power	/SYS/PS*n*/ V_OUT_OK /SYS/PS*n*/ V_IN_ERR /SYS/PS*n*/ V_IN_WARN /SYS/PS*n*/ V_OUT_ERR /SYS/PS*n*/ I_OUT_ERR /SYS/PS*n*/ I_OUT_WARN /SYS/PS*n*/T_ERR /SYS/PS*n*/ T_WARN /SYS/PS*n*/ FAN_ERR /SYS/PS*n*/ FAN_WARN /SYS/PS*n*/ERR
petTrapPowerSupplyState DeassertedAssert	PowerSupply sensor ASSERT	Warning; Power Supply is disconnected from AC Power	
Entity Presence Events			
petTrapEntityPresenceEntity PresentAssert	Entity Presence : PCIE1/PRSNT : Present : Asserted	Informational; The Entity identified by the Entity ID is present	/SYS/PCIE*n*/ PRSNT /SYS/PCIE_CC/ PRSNT
petTrapEntityPresenceEntity AbsentDeassert	Entity Presence : PCIE1/PRSNT : Absent : Deasserted		
petTrapEntityPresenceEntity AbsentAssert	Entity Presence : PCIE1/PRSNT : Absent : Asserted	Informational; The Entity identified by the Entity ID is absent	
petTrapEntityPresenceEntity PresentDeassert	Entity Presence : PCIE1/PRSNT : Present : Deasserted	Informational; The Entity identified by the Entity ID for the sensor is absent	
petTrapEntityPresenceEntity DisabledAssert	Entity Presence : PCIE1/PRSNT : Disabled : Asserted	Informational; The Entity identified by the Entity ID is present, but has been disabled	/SYS/PCIE4/ PRSNT /SYS/PCIE6/ PRSNT
petTrapEntityPresenceEntity DisabledDeassert	Entity Presence : PCIE1/PRSNT : Disabled : Deasserted	Informational; The Entity identified by the Entity ID is present and has been enabled	/SYS/PCIE_CC/ PRSNT

TABLE 2-12 PET Messages and Corresponding Oracle ILOM Events for Sun Fire X4470 Server *(Continued)*

PET Message	Oracle ILOM Event Message	Severity and Description	Sensor Name
petTrapEntityPresenceDevice InsertedAssert	Entity Presence : PS0/PRSNT : DevicePresent	Informational; A device is present or has been inserted	/SYS/PS*n*/PRSNT /SYS/FB/FAN*n*/PRSNT /SYS/DBP/HDD*n*/PRSNT
petTrapEntityPresenceDevice RemovedAssert	Entity Presence : PS0/PRSNT : DeviceAbsent	Informational; A device is absent or has been removed	
Environmental Events			
petTrapTemperatureUpper NonRecoverableGoingLow Deassert	Temperature Upper non-critical threshold has been exceeded	Major; Temperature has decreased below upper non-recoverable threshold	/SYS/MB/T_OUT /SYS/DBP/T_AMB /SYS/T_AMB
petTrapTemperatureUpper CriticalGoingLowDeassert	Temperature Lower non-critical threshold has been exceeded	Warning; Temperature has decreased below upper critical threshold	
petTrapTemperatureUpper NonRecoverableGoingHigh	Temperature Lower non-critical threshold no longer exceeded	Critical; Temperature has decreased below upper non-recoverable threshold	
petTrapTemperatureUpper CriticalGoingHigh	Temperature Lower fatal threshold has been exceeded	Major; Temperature has increased above upper critical threshold	
Fans, Hard Drives, and Physical Security Events			
petTrapPhysicalSecurity ChassisIntrusionState DeassertedAssert	Physical Security : INTSW : State Deasserted	Informational; Physical security: chassis intrusion alarm cleared	/SYS/INTSW
petTrapPhysicalSecurity ChassisIntrusionState AssertedAssert	Physical Security : INTSW : State Asserted	Warning; Physical security breach: chassis intrusion	
petTrapFanLowerCriticalGoing Low	Fan Lower fatal threshold has been exceeded	Major; Fan speed has decreased below lower critical threshold	/SYS/FB/FAN*n*/TACH
petTrapFanLowerCriticalGoing HighDeassert	Fan Lower fatal threshold no longer exceeded	Warning; Fan speed has increased above lower critical threshold	

TABLE 2-12 PET Messages and Corresponding Oracle ILOM Events for Sun Fire X4470 Server *(Continued)*

PET Message	Oracle ILOM Event Message	Severity and Description	Sensor Name
petTrapDriveSlotDriveFault Assert	Drive Slot : DBP/HDD0/STATE : Drive Fault : Asserted	Critical; HDD Fault has been detected. A corresponding HDD Fault LED is ON	DBP/HDD*n*/STATE
petTrapDriveSlotDriveFault Deassert	Drive Slot : DBP/HDD0/STATE : Drive Fault : Deasserted	Informational; HDD Fault has been cleared. An HDD Fault LED that was ON is now OFF	
petTrapDriveSlotPredictive FailureAssert	Drive Slot : DBP/HDD0/STATE : Predictive Failure : Asserted	Major; HDD Predictive Failure has been detected	
petTrapDriveSlotReadyTo RemoveAssert	Drive Slot : DBP/HDD0/STATE : Hot Spare : Asserted	Informational: A drive has been unmounted and is ready to be physically removed. A corresponding OK-to-Remove LED is ON	
petTrapDriveSlotReadyTo RemoveDeassert	Drive Slot : DBP/HDD0/STATE : Hot Spare : Deasserted	Informational; A drive is no longer ready to be physically removed. It has either been removed or mounted again. A corresponding OK-to-Remove LED is OFF	
petTrapDriveSlotPredictive FailureDeassert	Drive Slot : DBP/HDD0/STATE : Predictive Failure : Deasserted	Informational; Hard Disk Predictive Failure state has been cleared	

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