Oracle® Integrated Lights Out Manager (ILOM) 3.0 Supplement for the Sun Blade X6275 M2 Server Module

Contents

Using This Documentation

This section describes related documentation, submitting feedback, and a document change history.

Product Information Web Site

For information about the Sun Blade X6275 M2 server module, go to the http://www.oracle.com/goto/blades page and click on your server model listed near the bottom.

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

- Product information and specifications
- Software and firmware downloads

Related Books

The following is a list of documents related to Oracle's Sun Blade X6275 M2 server module. These and additional support documents are available on the web at:

http://download.oracle.com/docs/cd/E19962-01/

Document Group	Document	Description
Sun Blade X6275 M2 Server Module Documentation	Sun Blade X6275 M2 Server Module Product Documentation	Integrated HTML version of all starred (*) documents, including Search and Index.
	Sun Blade X6275 M2 Server Module Getting Started Guide	Pictorial setup quick reference.
	Sun Blade X6275 M2 Server Module Installation Guide *	How to install, rack, and configure the server up to initial power-on.
	Sun Blade X6275 M2 Server Module Product Notes *	Important late-breaking information about your server.
	Sun Blade X6275 M2 Server Module Installation Guide for Oracle Solaris Operating Systems *	How to install the Oracle Solaris OS on your server.
	Sun Blade X6275 M2 Server Module Installation Guide for Linux Operating Systems *	How to install a supported Linux OS on your server.
	Sun Blade X6275 M2 Server Module Installation Guide for Windows Operating Systems *	How to install a supported version of Microsoft Windows OS on your server.
	Sun Blade X6275 M2 Server Module Installation Guide for Oracle VM Operating Systems *	How to install a supported version of Oracle VM OS on your server.
	Oracle x86 Servers Diagnostics Guide *	How to diagnose problems with your server.
	Sun Blade X6275 M2 Server Module Service Manual *	How to service and maintain your server.
	Sun Blade X6275 M2 Server Module Safety and Compliance Guide	Safety and compliance information about your server.
	Oracle Integrated Lights Out Manager (ILOM) 3.0 Supplement for the Sun Blade X6275 M2 Server Module *	Version-specific supplemental information for your server's Integrated Lights Out Manager.
Sun Disk Management Documentation	*Sun x64 Server Disk Management Overview*	Information about managing your server's storage.
x64 Servers Applications and Utilities Documentation	*Sun x64 Server Utilities Reference Manual*	How to use the available utilities included with your server.

Document Group	Document	Description
Oracle Integrated Lights Out Manager (ILOM) 3.0 Documentation	*Oracle Integrated Lights Out Manager (ILOM) 3.0 Feature Updates and Release Notes*	Information about new ILOM features.
	Oracle Integrated Lights Out Manager (ILOM) 3.0 Getting Started Guide	Overview of ILOM 3.0.
	Oracle Integrated Lights Out Manager (ILOM) 3.0 Concepts Guide	Conceptual information about ILOM 3.0.
	Oracle Integrated Lights Out Manager (ILOM) 3.0 Web Interface Procedures Guide	How to use ILOM through the web interface.
	Oracle Integrated Lights Out Manager (ILOM) 3.0 CLI Procedures Guide	How to use ILOM through commands.
	Oracle Integrated Lights Out Manager (ILOM) 3.0 Management Protocols Reference Guide	Information about management protocols.

Translated versions of some of these documents are available at the web site described previously in Simplified Chinese, Korean, Japanese, French and Spanish. English documentation is revised more frequently and might be more up-to-date than the translated documentation.

About This Documentation (PDF and HTML)

This documentation set is available in both PDF and HTML. The information is presented in topic-based format (similar to online help) and therefore does not include chapters, appendixes, or section numbering.

A PDF that includes all information on a particular topic subject (such as hardware installation or product notes) can be generated by clicking on the PDF button in the upper left corner of the page.

Note – The "Documentation Information" and "Index" topics do not have associated PDF.

Documentation Comments

Oracle is interested in improving the product documentation and welcomes your comments and suggestions. You can submit comments by clicking the Feedback {+} link on the lower right of any page of the documentation site at: http://www.oracle.com/technetwork/indexes/documentation/index.html.

Contributors

Primary Authors: Ralph Woodley, Michael Bechler, Ray Angelo, Mark McGothigan.

Contributors: Kenny Tung, Adam Ru, Isaac Yang, Stone Zhang, Susie Fang, Lyle Yang, Joan Xiong, Redarmy Fan, Barry Xiao, Evan Xuan, Neil Gu, Leigh Chen, Eric Kong, Kenus Lee.

Change History

The following lists the release history of this documentation set:

- November 2010. Initial publication.
- November 2010. Information added to the *Sun Blade X6275 M2 Server Module Product Notes* for platform software release 1.1. Added new firmware version, PC-Check 6.27s support, CRs 6994690, 6992284, 6994464.
- January 2011. Information added to the Sun Blade X6275 M2 Installation Guide for configuring pre-installed Oracle Solaris or Oracle VM. Information added to the *Sun Blade X6275 M2 Server Module Product Notes* for platform software release 1.2. Added new firmware version, CRs 6971164, 7009654, 7009666, 7010601. Information added to the *Oracle Integrated Lights Out Manager (ILOM) 3.0 Supplement for the Sun Blade X6275 M2 Server Module* for proving physical presence, reading `available_power` in ILOM.

Overview of the ILOM Supplement

The Integrated Lights Out Manager (ILOM) is system management firmware that allows you to manage your server even when the host system is powered down. This is possible because ILOM runs on a separate Service Processor (SP), one for each server module node, that is powered by chassis standby power.

This supplement concentrates on ILOM tasks and information specific to your server. For information about ILOM usage in general, refer to the ILOM core documentation set at: http://download.oracle.com/docs/cd/19860-01/

Note – Before performing the procedures contained in this document, set up your hardware as shown in the *Sun Blade X6275 M2 Server Module Installation Guide*.

The following topics are covered:

Description	Link
Learn about standard and server-specific features of the standard Integrated Lights Out Manager (ILOM).	"Introduction to Oracle ILOM" on page 11
Learn about power management features for your server.	"Managing Power Usage and Monitoring Power Consumption" on page 19
Learn how to set the server power restoration policy in the event of an AC power failure.	"Configuring the Server Power Restore Policy" on page 25
Learn how to connect to the system console.	"Switching the Default Serial Port Output Between SP and Host Console" on page 29
Learn how to update your server's system BIOS and ILOM firmware.	"Updating Firmware" on page 33
Learn about how the ILOM Preboot menu can be used to fix problems with ILOM that cannot be fixed while it is running.	"Using the ILOM Preboot Menu" on page 51
Learn about ILOM indicators, sensors, SNMP, and PET traps for your server.	"Indicators, Sensors, and Traps" on page 63

Introduction to Oracle ILOM

The Sun Blade X6275 M2 server module has some unique features to support its dual node capability. The following sections describe the customized ILOM features available for your server module:

This supplement concentrates on ILOM tasks and information specific to your server. For information about ILOM usage in general, refer to the ILOM core documentation set at:
http://download.oracle.com/docs/cd/19860-01/

Standard ILOM Features

ILOM enables you to actively manage and monitor the server independent of its operating system state, providing you with a reliable, accessible, lights-out management. With ILOM, you can:

- Learn about hardware errors and faults as they occur

- Remotely control the power state of your server

- View the graphical and non-graphical consoles for the host

- Monitor power server module consumption metrics

- View the current status of sensors and indicators on the system

- Determine the hardware configuration of your system

- Receive generated alerts about system events in advance using IPMI PETs, SNMP Traps, or Email Alerts

- Access diagnostics supported through ILOM for your system

Note – Storage monitoring is not supported in ILOM for the Sun Blade X6275 M2 server module.

Each node of the server has its own ILOM service processor (SP) that runs its own embedded operating system and shares a dedicated Ethernet management port to provide out-of-band management capability. In addition, you can access ILOM from either the server's host operating system or a remote client. Supported operating systems include Oracle Solaris, Linux, and Windows. Real and virtual optical and floppy drives can be redirected on the network allowing you to perform most maintenance operations, including installing an operating system. Using ILOM, you can remotely manage your server as if you were using a locally attached keyboard, monitor, and mouse.

Each node ILOM SP automatically initializes as soon as your server module is plugged into a power-on chassis. It provides a full-featured, browser-based web interface and has an equivalent command-line interface (CLI). There is also an industry-standard SNMP interface and IPMI interface.

The node ILOM can also be accessed through the Chassis Management Module (CMM) ILOM.

Note – As of the release of this document, the Sun Blade X6275 M2 server module is only supported in a Sun Blade 6000 modular system. For more on supported hardware and software requirements for the server module, refer to the *Sun Blade X6275 M2 Server Module Product Notes*.

See Also

Dual–Node Identification In CMM ILOM

A single Sun Blade X6275 M2 server module contains two complete systems, each referred to as a node. Each node is individually represented beneath the blade, the blade itself is addressed by the chassis slot number.

When using the **Command Line Interface (CLI)** to access CMM ILOM, nodes are identified by both the blade slot number and the node ID.

For example, the nodes of a Sun Blade X6275 M2 server module in slot number 6 are displayed as follows:

- ▪ /CH/BL6/NODE0 for node 0
- ▪ /CH/BL6/NODE1 for node 1

Note – The slot addressing for each node described above is used by the CMM ILOM only. The server module ILOM displays the actual blade slot number in all instances, for both nodes.

When navigating the CMM device tree, once you get to the server node's ILOM, you can start the node's CLI to gain access to node-specific management features not available from the CMM. The following is an example of starting a node's ILOM CLI from CMM ILOM:

```
-> start /CH/BL6/NODE0/SP/cli
```

When finished with the node ILOM session, you can go back to CMM ILOM by entering the **exit** command at the prompt.

When using the **Web interface**, you can access a node by entering the node's Service Processor (SP) network address in the browser address bar. Alternately, you can also access CMM ILOM by entering its SP address into the browser address bar.

The following graphic shows access through the CMM ILOM with Sun Blade X6275 M2 server module nodes listed.

To access the ILOM web interface for an individual server module, click on the server module name in the left-hand frame, or click on the graphic representing the server module in the right-hand frame. In the case of a Sun Blade X6275 M2 server module, click on the upper half of the graphic to access node 0, and click on the lower half of the graphic to access node 1.

See Also

Proving Physical Presence

You can use the preconfigured ILOM `default` user account to recover a lost password or re-create the root account. The `default` user account cannot be changed or deleted and is only available through a local serial console connection (refer to "Using the Multi-Port Cable" in *Sun Blade X6275 M2 Server Module Service Manual*). In order to access the `default` user account, you must prove physical presence.

To prove physical presence for a node of the Sun Blade X6275 M2 server module, press the Locate button for the node on the server module front panel when prompted by ILOM. See "Server Module Front Panel and Indicators" in *Sun Blade X6275 M2 Server Module Installation Guide*.

See Also

- "Standard ILOM Features" on page 11
- "Dual–Node Identification In CMM ILOM" on page 12
- "Power Management" on page 15
- "Clearing Server and CMM Faults" on page 15
- "ILOM Preboot Menu" on page 17

Power Management

Power management interfaces in ILOM enable you to configure and display the power management policy of the server node. You use power management policies to manage power usage. Power policies enable you to optimize system power usage to match your chassis and data center requirements. You can also configure how your server recovers (the default power state) after an AC power failure.

Note – An SNMP MIB (SUN-HW-CTRL-MIB) is available on the Tools and Drivers CD/DVD ISO image for your server to support power management.

For more about ILOM power management for your server, see: "Managing Power Usage and Monitoring Power Consumption" on page 19.

See Also

- "Standard ILOM Features" on page 11
- "Dual–Node Identification In CMM ILOM" on page 12
- "Proving Physical Presence" on page 14
- "Clearing Server and CMM Faults" on page 15
- "ILOM Preboot Menu" on page 17

Clearing Server and CMM Faults

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

Note – You can also use the server node's BIOS setup utility to view and delete system event logs.

For the Sun Blade X6275 M2 server module, the following types of faults must be cleared manually:

- CPU faults (after a CPU has been replaced)
- DIMM faults (after a DIMM has been replaced)
- PCIe EM faults (after a PCIe EM has been replaced)
- Motherboard faults (whether or not the motherboard has been replaced)

Other faults captured by the fault management function in ILOM include faults generated by the Chassis Monitoring Module (CMM). These faults occur when other components in the chassis fail. Faults for chassis hot-serviceable components are auto-cleared upon completion of a service action. Chassis hot-serviceable components include:

- CMM faults
- Fan faults
- Power supply faults
- NEM faults

Chassis related non-hot-serviceable faults are not automatically cleared by the system. You must manually clear these faults in the Fault Management function in CMM ILOM. After you have cleared the faults reported by the CMM, the chassis related faults are then automatically cleared by the system in the Fault Management function on the node ILOM.

When clearing faults, give consideration to the following:

- To clear DIMM, CPU, motherboard, and PCIe faults, access the server node's ILOM and clear the fault for the failed component.
- When clearing faults for memory DIMMs, note that the DIMM faults can be either system wide (`/SYS/MB`) or on a per DIMM basis (`/SYS/MB/P`n`/D`n`).
- PCIe faults include `/SYS/MB/NET`n.

For information on how to use the ILOM web interface or the CLI to clear server faults, see the Oracle ILOM 3.0 documentation collection at: `http://download.oracle.com/docs/cd/19860-01/`

See Also

ILOM Preboot Menu

The ILOM preboot menu is a utility that can be used to fix problems with the ILOM service processor that cannot be fixed while it is running. It allows you to interrupt the SP boot process, configure settings, then continue booting ILOM. Among other things, it allows you to reset the ILOM root password to factory defaults, restore access to the serial management port, and update or recover SP firmware.

For more about using the ILOM Preboot Menu, see: "Using the ILOM Preboot Menu" on page 51.

See Also

- "Standard ILOM Features" on page 11
- "Dual–Node Identification In CMM ILOM" on page 12
- "Proving Physical Presence" on page 14
- "Clearing Server and CMM Faults" on page 15

Managing Power Usage and Monitoring Power Consumption

This section describes how to use power management interfaces to manage power usage, monitor power consumption and set the server power restore policy.

Power Management Terminology

The following table describes power management terminology.

Term	Definition
Actual power	The input power measured in Watts. This is the actual power consumed by all the power supplies in the system.
Permitted power	The maximum power that the server node will permit to be used at any time.
Allocated power	The input power in Watts allocated to installed and hot pluggable components.
Available power	The input power capacity in Watts. For the server modules, available power is the amount of power available to the server module from the chassis.
Threshold notification	A configurable value to prompt a event message when power consumption exceeds a threshold value in Watts. Two threshold values can be set (for example, one as a minor warning and one as critical).

Term	Definition
Power policy	The setting that governs system power usage at any point in time. The following power policies are supported: ■ Soft—Allows you to cap power consumption based on a target limit, but allows the power to briefly exceed the limit. If actual power exceeds the target limit for longer than the specified time, you can set an action to be performed (such as a hard power off). ■ Hard—Keeps the permitted power under the target limit. If power exceeds the target limit, you can set an action to be performed (such as a hard power off).

See Also
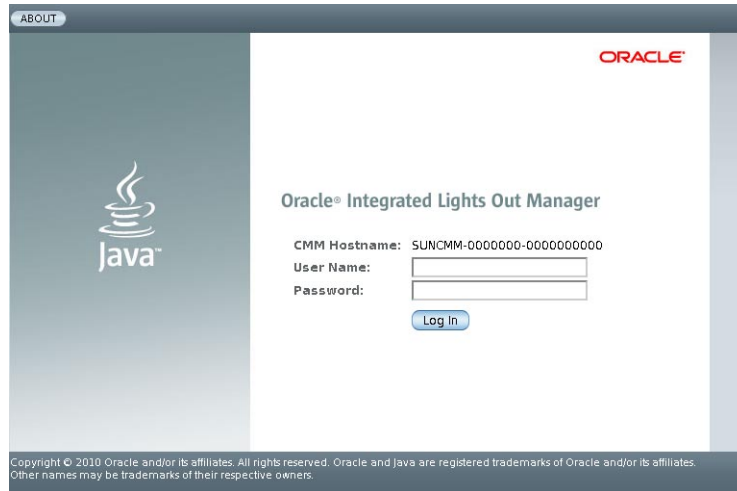
- "How to View Power Management Properties Using the Web Interface" on page 20
- "How to View Power Management Properties Using the CLI" on page 22
- "Configuring the Server Power Restore Policy" on page 25

▼ How to View Power Management Properties Using the Web Interface

1 Connect to the ILOM web interface by typing the IP address of the node SP or CMM into your browser's address field. For example:

```
https://129.146.53.150
```

The ILOM login screen appears.

2   Log in by entering a user name and password.

If you login using the root account, the default password is changeme. If you choose to use another user account, make sure it has admin privileges.

The ILOM web interface appears.

3 **Click the Power Management tab for the node.**

The Power Consumption page appears.
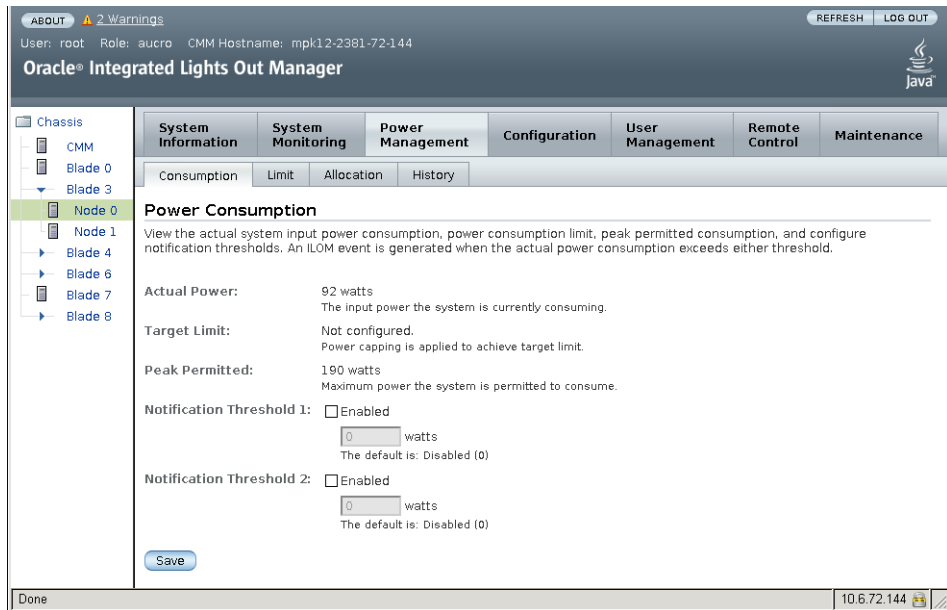
4 **Click on the appropriate tab (Consumption, Limit, Allocation or History) for details and options for managing system power.**

See Also
- "Power Management Terminology" on page 19
- "How to View Power Management Properties Using the CLI" on page 22
- "Configuring the Server Power Restore Policy" on page 25

▼ How to View Power Management Properties Using the CLI

1 **Log in to the server node SP by opening an ssh connection at a terminal window:**

$ **ssh root@***SPIPaddress*

Password: *password*

Where:

- *SPIPaddress* is the IP address of the server's service processor.
- *password* is the password for the account. The default password for the root account is changeme. If you choose to use another user account, make sure it has admin privileges.

The ILOM CLI prompt appears (`->`).

2   Enter the following command:

`-> ` **`show /SP/powermgmt`**

Example output for node 0 might look like:

```
-> show /SP/powermgmt

 /SP/powermgmt
    Targets:
        budget
        powerconf

    Properties:
        actual_power = 56
        permitted_power = 190
        allocated_power = 190
        available_power = 380
        threshold1 = 0
        threshold2 = 0

    Commands:
        cd
        set
        show
```

Where:

- `actual_power` displays the current system input power (in watts) consumption.
- `permitted_power` displays the maximum power consumption (in watts) expected for the system.
- `available_power` displays the input power capacity (in watts) that is available to system components. The CMM uses the `available_power` number listed in node 0 to determine how much power to allocate to the entire blade.

Note – When logged into node 0, the `available_power` listed is actually the combined available power for the entire blade (node 0 plus node 1). To calculate the available power for node 0, subtract the `available_power` number listed when logged into node 1 from the total `available_power` number listed for node 0.

---

3   Alternately, you can view total power consumed by the system by entering the command:

`-> ` **`show /SYS/VPS`**

Example output might look like:

```
-> show /SYS/VPS

 /SYS/VPS
    Targets:
        history
```

```
Properties:
    type = Power Unit
    ipmi_name = VPS
    class = Threshold Sensor
    value = 69.400 Watts
    upper_nonrecov_threshold = N/A
    upper_critical_threshold = N/A
    upper_noncritical_threshold = N/A
    lower_noncritical_threshold = N/A
    lower_critical_threshold = N/A
    lower_nonrecov_threshold = N/A
    alarm_status = cleared

Commands:
    cd
    show
```

The value of `/SYS/VPS` is equivalent to the value of `/SYS/powermgmt actual_power`.

See Also
- "Power Management Terminology" on page 19
- "How to View Power Management Properties Using the Web Interface" on page 20
- "Configuring the Server Power Restore Policy" on page 25

Configuring the Server Power Restore Policy

You can use ILOM to configure how the server node behaves when AC power returns after an AC power loss. By default, the server is set to ALWAYS-OFF.

Note – The server power restore policy can also be configured through the server node's BIOS setup utility (under Southbridge Chipset configuration) or IPMItool.

- "How to Set the Server Power Restore Policy Using the ILOM Web Interface" on page 26
- "How to Set the Server Power Restore Policy Using the ILOM CLI" on page 26

▼ How to Set the Server Power Restore Policy Using the ILOM Web Interface

1   Log in to the node ILOM using a web browser.

2   Click the Configuration tab.

3   Click the Policy tab

The Policy page appears.
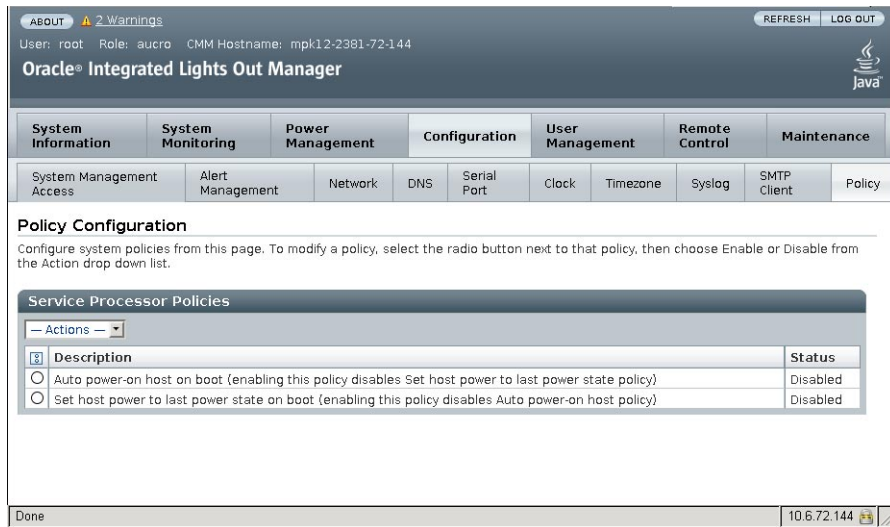
4   Select the policy to configure and use the drop-down Actions menu to set the policy.

See Also

▼ How to Set the Server Power Restore Policy Using the ILOM CLI

1   Log in to the node ILOM from a terminal using ssh.

2   Check the current policy by entering the command:

`-> show /SP/policy`

Example output might look like:

```
-> show /SP/policy
  /SP/policy
   Targets:

   Properties:
       HOST_AUTO_POWER_ON = disabled
       HOST_LAST_POWER_STATE = disabled

   Commands:
       cd
       set
       show
```

3   Enable the power policy as required using the set command.

See Also

Switching the Default Serial Port Output Between SP and Host Console

You can switch the default serial port output of the server module between the SP console and the host console. By default, the SP console is connected to the external serial management port (accessible through the multi-port cable that can be plugged into the front panel of the blade). This feature allows you to view non-ASCII character traffic from the host console.

Note – Set up the network connection to the server module SP before attempting to switch the serial management port owner to the host server. If a network is not set up, and you utilize a direct serial connection using the multi-port cable to switch the serial management port owner to the host server, you will be unable to connect via the ILOM CLI interface or web interface to change the serial management port owner back to the SP. To change ownership of the serial management port back to the SP, you must perform the procedures in "Restoring ILOM Access to the Serial Console" on page 59.

Choose one of the following methods to switch serial port console access:

- "How to Switch Default Serial Port Output Using the ILOM Web Interface" on page 29
- "How to Switch Default Serial Port Output Using the ILOM CLI" on page 32

▼ How to Switch Default Serial Port Output Using the ILOM Web Interface

1 **Connect to the ILOM web interface by typing the IP address of the server node SP or CMM into your browser's address field. For example:**

   `https://129.146.53.150`

The ILOM login screen appears.
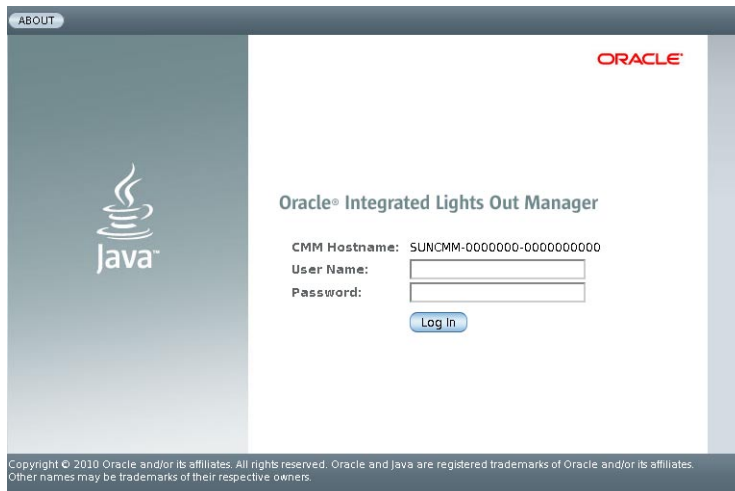
2   Log in by entering a user name and password.

If you login using the root account, the default password is changeme. If you choose to use another user account, make sure it has admin privileges.

The ILOM web interface appears.

3 **Select Configuration → Serial Port.**

The Serial Port Settings page appears. The following illustration is a CMM ILOM example.

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

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

By default, `Service Processor` is selected.

5 **Click Save.**

▼ How to Switch Default Serial Port Output Using the ILOM CLI

1   Log in to the server node SP by opening an ssh connection at a terminal window:

$ **ssh root@***SPIPaddress*

Password: *password*

Where:

- *SPIPaddress* is the IP address of the server's service processor.

- *password* is the password for the account. The default password for the root account is changeme. If you choose to use another user account, make sure it has admin privileges.

The ILOM CLI prompt appears (->).

2   To set the serial port owner, type:

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

Where *selection* is either:

- **host** for the host server.
- **SP** for the service processor. This is the default.

Updating Firmware

The Sun Blade X6275 M2 server module contains a system BIOS and ILOM firmware that can be updated by the customer.

This section includes the following topics that describe the firmware update process:

Step	Task	Link
1	Learn about firmware version syntax.	"Firmware Version Conventions" on page 34
2	Find out your current firmware version.	"Determining Current Firmware Versions" on page 35
3	Download the firmware image file.	"How to Download Firmware Updates" on page 41
4	Choose an update method: ■ Perform an update using ILOM. –Or– ■ Perform an update using a method other than ILOM. –Or– ■ Recover an SP that has corrupted firmware.	■ "Using ILOM to Update System BIOS and ILOM Firmware" on page 41 –Or– ■ "Alternate Methods for Updating the System BIOS and ILOM Firmware" on page 48 –Or– ■ "Recovering the SP Firmware Image" on page 60
5	Reset the SP after an update.	"Resetting the Service Processor After an Update" on page 48
6	If necessary, clear CMOS settings after an update.	"Clearing CMOS Settings After an Update (Optional)" on page 49

Firmware Version Conventions

- The system software release image file (.pkg) includes most of the necessary firmware required (BIOS, ILOM, CPLD) to perform a firmware upgrade on a server module node. For example, for system software release 1.0, the image file name might look like:

  ILOM-3_0_10_12_r57416-Sun_Blade_X6275M2.pkg

  Note – Files with the .pkg extension are for normal ILOM updates, .flash files are for recovery (used in the Preboot menu environment).

  Both nodes should be at the same system software release version. For firmware release history information, refer to the *Sun Blade X6275 M2 Server Module Product Notes*.

  Note – There might be other system component firmware that can be upgraded (such as FMods, and the Mellanox ConectX-2 10GbE controller). These components are upgraded separately using their own upgrade software. Refer to the *Sun Blade X6275 M2 Server Module Product Notes* or the Readme files on the Tools and Drivers CD/DVD ISO image for more information.

- The ILOM version is identified by two numbers: a version number and a build number. For example:

  ILOM 3.0.10.12 build 57416

  Both numbers are required to identify a specific ILOM version.

- A BIOS version can take any of the following forms:
  - A set of four numbers separated by dots:

    10.02.04.00

    The third number can be two or three digits long. The other numbers are two digits.
  - The same four numbers with the separating dots omitted:

    10020400
  - A two- or three-digit number that is the same as the third number in the dotted version. It is often referred to as the BIOS number:

    BIOS 04

Next Steps

- "Resetting the Service Processor After an Update" on page 48
- "Clearing CMOS Settings After an Update (Optional)" on page 49

Determining Current Firmware Versions

Use one of the following methods to determine the current version of the system BIOS and ILOM firmware for your server node.

This section contains the following procedures:

- "How to Verify the BIOS and ILOM Firmware Versions Using the Web Interface" on page 35
- "How to Verify the BIOS and ILOM Firmware Versions Using the CLI" on page 38
- "How to Verify the ILOM and BIOS Firmware Versions Using the Command-Line Interface Through the Serial Port" on page 39

▼ How to Verify the BIOS and ILOM Firmware Versions Using the Web Interface

1 Connect to the ILOM web interface by typing the IP address of the server node SP or CMM into your browser's address field. For example:

```
https://129.146.53.150
```

The ILOM login screen appears.
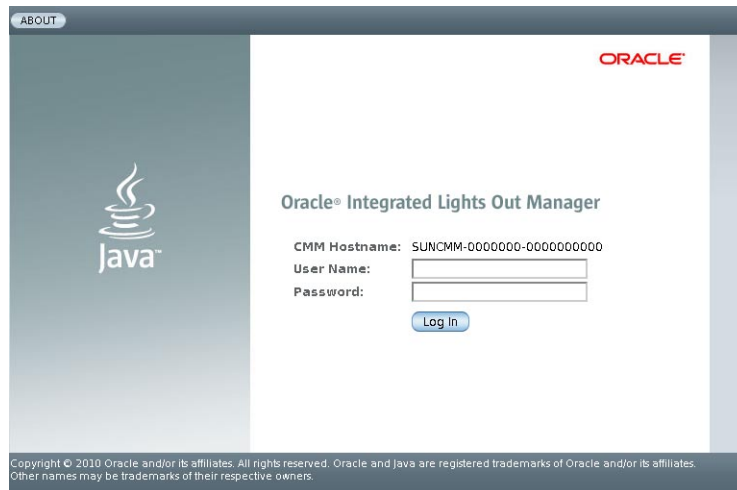
2 Log in by entering a user name and password.

If you login using the root account, the default password is changeme. If you choose to use another user account, make sure it has admin privileges.

The ILOM web interface appears.

3   Navigate to the System Information->Overview page for your server node.

If you have logged into the CMM ILOM, select the blade and node you want to update. Each node is updated separately.

The **Overview** page includes the ILOM version and build number.
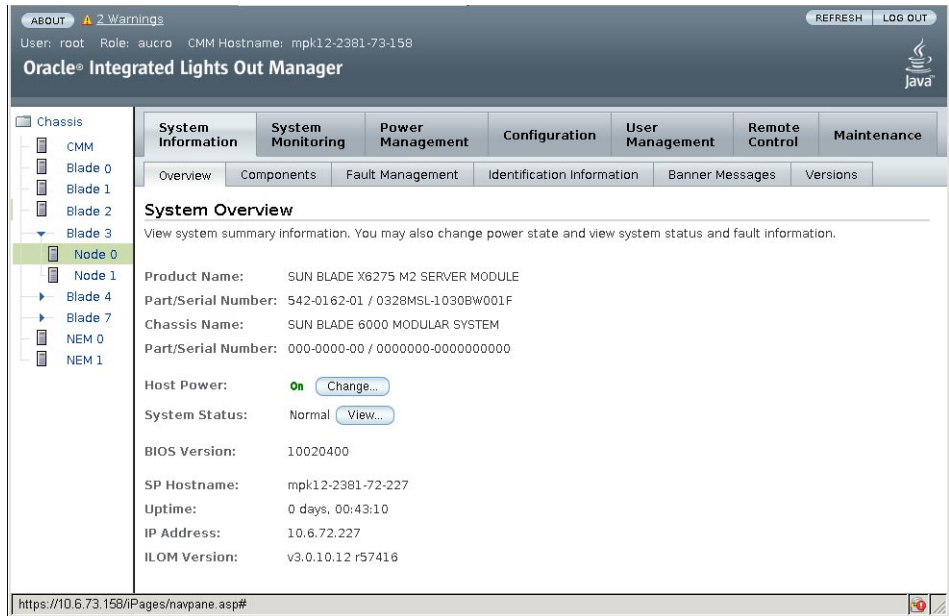
4   Click on System Information –> Components.

5   Click on /SYS/MB/BIOS in the Component Name field.

The view component name and information dialog box is displayed.

The FRU version field shows the BIOS version number.

▼ How to Verify the BIOS and ILOM Firmware Versions Using the CLI

1 **Open a terminal window on a system that is on the same network as your server node's SP.**

2 **Establish an ssh connection using the following command:**

   # **ssh -l root** *SPIPaddress*

   Password: *password*

   Where:

   - *SPIPaddress* is the IP address of the server node's service processor.
   - *password* is the password for the account. The default password for the root account is changeme. If you choose to use another user account, make sure it has admin privileges.

   After successfully logging in, the ILOM CLI prompt appears (->).

3 **To view the ILOM version information, enter the command:**

   -> **version**

This command returns output similar to the following:

```
SP firmware 3.0.10.12
SP firmware build number: 57416
SP firmware date: Mon Mar  9 22:45:34 PST 2010
SP filesystem version: 0.1.16
```

4   To view the BIOS version, type:

-> **show /SYS/MB/BIOS**

The command returns input similar to the following:

```
/SYS/MB/BIOS
   Targets:

   Properties:
       type = BIOS
       fru_name = SYSTEM BIOS
       fru_description = SYSTEM BIOS
       fru_manufacturer = AMERICAN MEGATRENDS
       fru_version = 10020400
       fru_part_number = AMIBIOS8

   Commands:
       cd
       show
```

The fru_version field contains the BIOS version number.

5   Note the ILOM and BIOS versions.

Next Steps
- "How to Download Firmware Updates" on page 41
- "Using ILOM to Update System BIOS and ILOM Firmware" on page 41
- "Alternate Methods for Updating the System BIOS and ILOM Firmware" on page 48
- "Resetting the Service Processor After an Update" on page 48
- "Clearing CMOS Settings After an Update (Optional)" on page 49

▼ How to Verify the ILOM and BIOS Firmware Versions Using the Command-Line Interface Through the Serial Port

1   Connect a terminal or a computer running terminal emulation software to the node's serial management port using an optional multi-port cable.

Refer to the *Sun Blade X6275 M2 Installation Guide* for additional details on how to log into ILOM using a serial connection.

2   Press Enter on the terminal device to establish a connection between that terminal device and the server's SP.

The SP displays the login prompt:

```
SUN0111AP0-0814YT06B4 login:
```

In this example, the login prompt, 0111AP0-0814YT06B4 is the product serial number. The product serial number is the default, but the value could also be the host name assigned by the user or the DHCP server.

3 **Log in to the server node's SP and type the default user name (root) with the default password (`changeme`).**

After successfully logging in, the ILOM CLI prompt appears (`->`).

4 **To view the ILOM version information, type:**

`-> version`

This command returns output similar to the following:

```
SP firmware 3.0.10.15
SP firmware build number: 57416
SP firmware date: Mon Mar  9 22:45:34 PST 2010
SP filesystem version: 0.1.16
```

5 **To view the BIOS version, type:**

`-> show /SYS/MB/BIOS`

The command returns input similar to the following:

```
/SYS/MB/BIOS
    Targets:

    Properties:
        type = BIOS
        fru_name = SYSTEM BIOS
        fru_description = SYSTEM BIOS
        fru_manufacturer = AMERICAN MEGATRENDS
        fru_version = 10020400
        fru_part_number = AMIBIOS8

    Commands:
        cd
        show
```

The `fru_version` field contains the BIOS version number.

6 **Note the ILOM and BIOS versions.**

Next Steps
-
-
-
-
-

▼ How to Download Firmware Updates

1 **From the blades main page (`http://www.oracle.com/goto/blades`), click on your server model.**

2 **From your server page, click on the product–specific download link on the right side of the page.**

3 **Determine which system software release corresponds to the firmware that you want to download and click on its link.**

Refer to the server *Product Notes*.

4 **Enter your Oracle download center user name and password.**

If you do not have a user name and password, you will need to create an account.

5 **If there is a Platform drop-down list, choose Firmware from the list.**

6 **Click the box to agree to the software license agreement.**

7 **Click the Continue button.**

8 **Click the appropriate image files to begin the download process.**

Note – Files with the `.pkg` extension are for normal ILOM updates, `.flash` files are for recovery.

Next Steps
-
-
-
-

Using ILOM to Update System BIOS and ILOM Firmware

The following procedures describe two different methods for updating the ILOM and system BIOS.

-
-

⚠️ **Caution** – ILOM enters a special mode to load new firmware. Note the following requirements. 1) The node host power must remain off, so the node ILOM must be accessed from another system on the network to perform the upgrade. 2) No other tasks can be performed in the node's ILOM until the firmware upgrade is complete and the ILOM is reset. To ensure a successful update, do *not* attempt to modify the node's ILOM configuration, or use other ILOM interfaces (Web, CLI, SNMP, or IPMI) during the update process. Wait until after the update succeeds before making further node ILOM configuration changes. The update takes about 20 minutes.

▼ How to Update the System BIOS and ILOM Firmware Using the ILOM Web Interface

Before You Begin
- Identify the version of ILOM that is currently running on your system. See "Determining Current Firmware Versions" on page 35.
- Download the firmware image for your server from the product web site. See "How to Download Firmware Updates" on page 41.
- Copy the firmware image to the system on which the web browser is running (it cannot be the same system being upgraded).
- Obtain an ILOM user name and password that has Admin (a) role account privileges. You must have Admin (a) privileges to update the firmware on the system.

Note – The firmware update process might take about 15 minutes to complete. During this time, do not perform other ILOM tasks. When the firmware update is complete, the system reboots.

Note – Due to increased memory use during web interface operations, you might find that using the web interface, which is the easiest procedure, does not work satisfactorily. In such a case, you need to use the ILOM CLI method or the Oracle Enterprise Manager Ops Center to update the firmware.

1   Launch the ILOM web interface by entering the IP address of the server node's SP into your browser's address field. For example:

```
https://129.146.53.150
```

The ILOM login screen appears.
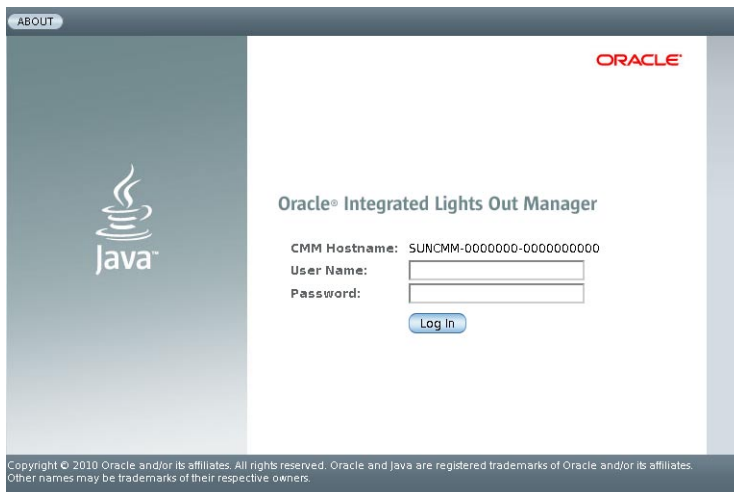
2   **Log in by entering a user name and password.**

If you login using the root account, the default password is changeme. If you choose to use another user account, make sure it has admin privileges.

The ILOM web interface appears.

3   **Select Maintenance –> Firmware Upgrade.**

The Firmware Upgrade page appears.
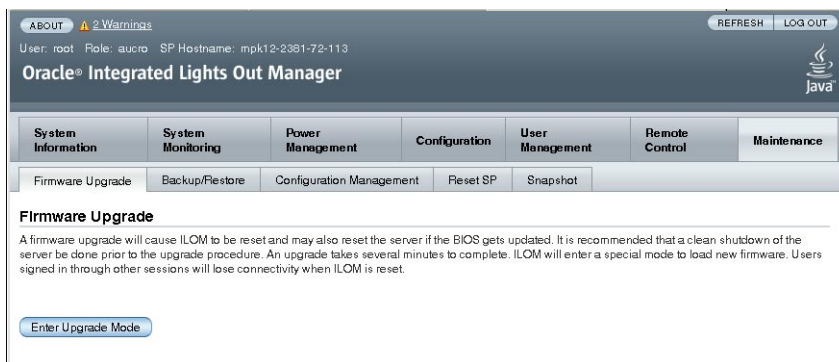
4   **In the Firmware Upgrade page, click Enter Upgrade Mode.**

An Upgrade Verification dialog appears, indicating that other users who are logged in will lose their session when the update process is completed.

5 **In the Upgrade verification dialog box, click OK to continue.**

You are prompted to select an image file to upload.

6 **Perform the following actions:**

a. Click Browse to select the location of the firmware image you want to install.

b. Click the Upload button to upload and validate the file.

Wait for the file to upload and validate.

The Firmware Verification page appears.

7 **In the Firmware Verification page, enable any of the following options:**

■ **Preserve Configuration.**

Enable this option if you want to save your existing configuration in ILOM and restore that existing configuration after the update process is completed.

■ **Delay BIOS upgrade until next server power off.**

Enable this option if you want to postpone the BIOS upgrade until the next time the system is powered off.

8 **Click Start Upgrade to start the upgrade process or click Exit to cancel the process.**

When you click Start Upgrade the upload process starts and a prompt to continue the process appears.

Note – If you did not preserve the ILOM configuration before the firmware update, you need to perform the initial ILOM setup procedures to reconnect to ILOM.

9 **At the prompt, click OK to continue.**

The Update Status page appears, providing details about the update progress. When the update indicates 100%, the firmware upload is complete. When the upload is completed, the system automatically reboots.

Note – The ILOM web interface might not refresh properly after the update is completed. If the ILOM web interface is missing information or displays an error message, you might be viewing a cached version of the page from the version previous to the update. Clear your browser cache and refresh your browser before continuing.

10   If the firmware you are upgrading to includes a new CPLD (Complex Programmable Logic Device) version, you must power off the server module nodes and reseat the blade in the chassis for the server to use the new CPLD code.

Refer to the *Sun Blade X6275 M2 Server Module Product Notes* for firmware release information.

Note – If you are downgrading to an earlier firmware version, CPLD will not be downgraded (even if the firmware includes an earlier version of CPLD) and therefore the blade will not need to be reseated in the chassis.

11   After the server boots, log in to the node's ILOM web interface.

12   Select System Information –> Version to verify that the firmware version on the SP corresponds to the firmware image you installed.

13   Repeat the upgrade process steps for the second server node.

Note – Both server nodes be should be running the same firmware version.

Next Steps   ■ "Resetting the Service Processor After an Update" on page 48
■ "Clearing CMOS Settings After an Update (Optional)" on page 49

▼ How to Update the System BIOS and ILOM Firmware Using the ILOM CLI

Before You Begin
- Identify the version of ILOM that is currently running on your system. See "Determining Current Firmware Versions" on page 35.

- Download the firmware image for your server from the product web site. See "How to Download Firmware Updates" on page 41.

- Copy the firmware image to a server that can be access over the network using a supported protocol (TFTP, FTP, HTTP, HTTPS). You cannot host the image on the server being upgraded.

- Obtain an ILOM user name and password that has Admin (a) role account privileges. You must have Admin (a) privileges to update the firmware on the system.

- To verify that you have network connectivity to update the firmware, enter the following command at the ILOM prompt:

  -> **show /SP/network**.

Note – The firmware update process takes about fifteen to twenty minutes to complete. During this time, do not perform other ILOM tasks. When the firmware update is complete, the system reboots automatically.

1. **From a terminal window, log in to the node's ILOM SP with user account that has administrator privileges.**

   You can use either the network or the serial management port. These connection options are described in the *Sun Blade X6275 M2 Installation Guide*.

2. **From the ILOM CLI, use the following command:**

   -> **load —source** *supported_protocol***://***serverIP***/ILOM-***version***-Sun_Blade_X6275M2.pkg**

   Where:

   - *supported_protocol* is the supported file transfer protocol (TFTP, FTP, HTTP, HTTPS) for the server that contains the update image file.

   - *serverIP* is the IP address of the server that contains the update image file.

   - *version* is the ILOM firmware version, for example:

     ILOM-3_0_10_12_r12345-Sun_Blade_X6275M2.pkg

   A note about the firmware update process appears, followed by message prompts to load the image. The text of the note depends on your server platform.

3. **At the prompt for loading the specified file, type y for yes or n for no.**

   Answer yes (y) or no (n), as appropriate.

   The prompt to preserve the configuration appears.

4   **At the preserve configuration prompt, type y for yes or n for no.**

   - If you answer yes (y) to the prompt, your existing ILOM configuration will be saved and that configuration will be restored when the update process is completed.

   - If you answer no (n) to the prompt, you are advanced to another platform–specific prompt.

   Note – If you do not preserve the ILOM configuration before the firmware update, you must perform the initial ILOM setup procedures to reconnect to ILOM after the update process has finished.

   A prompt to postpone the BIOS update appears.

5   **When asked if you want to force the server off to upgrade the BIOS, type y for yes or n for no.**

   - If you answer yes (y) to the prompt, the system automatically updates the BIOS, if necessary, when updating the firmware.

   - If you answer no (n) to the prompt, the system postpones the BIOS update until the next time the system is powered off.

   The system loads the specified firmware file and then automatically reboots to complete the firmware update.

6   **If the firmware you are upgrading to includes a new CPLD (Complex Programmable Logic Device) version, you must power off the server module nodes and reseat the blade in the chassis for the server to use the new CPLD code.**

   Refer to the *Sun Blade X6275 M2 Server Module Product Notes* for firmware release information.

   Note – If you are downgrading to an earlier firmware version, CPLD will not be downgraded (even if the firmware includes an earlier version of CPLD) and therefore the blade will not need to be reseated in the chassis.

   ---

7   **After the server boots, reconnect to the server node SP using the same connection method, user name and password that you provided in Step 1 of this procedure.**

   If you did not preserve the ILOM configuration before the firmware update, you must perform the initial ILOM setup procedures to reconnect to ILOM. See the *Sun Blade X6275 M2 Server Module Installation Guide* for additional information.

8   **To ensure that the proper firmware version was installed, at the ILOM CLI prompt, enter the command:**

   ```
   ->version
   ```

9   **Repeat the upgrade process steps for the second server node.**

> **Note** – Both server nodes be should be running the same firmware version.

Alternate Methods for Updating the System BIOS and ILOM Firmware

Oracle Enterprise Manager Ops Center – You can also use the Ops Center (the minimum supported version is 2.5). More information on Oracle Enterprise Manager Ops Center can be found at: `http://www.oracle.com/us/products/enterprise-manager/opscenter/`

ILOM Preboot Menu – If a node's ILOM service processor is unavailable for example, because the firmware image is corrupted, you can use the preboot menu, as described in "Recovering the SP Firmware Image" on page 60. This method can be used whether the server is powered on or off.

> **Note** – Any upgrade that includes a new CPLD version requires that the server module be reseated in the chassis after the upgrade completes. If you are downgrading to an earlier firmware version, CPLD will not be downgraded (even if the firmware includes an earlier version of CPLD) and therefore the blade will not need to be reseated in the chassis.

See Also

Resetting the Service Processor After an Update

After updating a node's system BIOS and ILOM firmware, you must reset the ILOM SP.

To reset the ILOM SP, you can do any of the following:

■ If you use the web interface, this happens automatically.

■ From the ILOM CLI, use the following command:

```
->reset /SP
```

■ Using IPMItool, use the following command:

```
ipmitool -U root -P password -H SP-IPaddress bmc reset cold
```

Where *SP-IPaddress* is the IP address of the service processor.

- Reset the ILOM SP by shutting down the host, then removing and restoring AC power cords to the system.

Clearing CMOS Settings After an Update (Optional)

If you cannot get output to your serial console after the firmware update, you might have to clear CMOS settings. This is because your default CMOS settings might have been changed by the update of the BIOS.

To clear CMOS settings, use the following IPMItool commands (in this example, the default username, root, and the default password, changeme, are used):

```
ipmitool -U root -P changeme -H SP-IP chassis power off
ipmitool -U root -P changeme -H SP-IP chassis bootdev disk clear-cmos=yes
```

Where *SP-IP* is the IP address of the service processor.

Note – The -P option might not be available on the Windows and Solaris versions of IPMItool. Instead, IPMItool prompts for a password.

Using the ILOM Preboot Menu

The ILOM preboot menu is a utility that can be used to fix problems with ILOM that cannot be fixed while it is running. It allows you to interrupt the ILOM boot process, configure settings, then continue booting the ILOM. Among other things, it allows you to reset the ILOM root password to factory defaults, restore ILOM access to the serial port, and update the SP firmware.

This section contains the following topcs:

Accessing the Preboot Menu

To access the preboot menu, you must boot the SP and interrupt the boot process.

There are two ways to interrupt the ILOM boot process: manually using the Locate button, or by typing **xyzzy** during a pause in the bootstrap process.

The first method requires you to have physical access to the server module. The second method can be done remotely. However:

- You must use a terminal or a terminal emulator. You cannot use an SSH, or an RKVMS session.
- Some preboot menu settings must be configured first, and until they are, you must use the Locate button.

Because the settings must be configured before you can access the preboot menu remotely, the first time you access the preboot menu, you must use the locate button to access the preboot menu, and configure the settings. This is described in "Using the edit Command and Configuring the Preboot Menu For Remote Access" on page 55.

See Also

▼ How to Access the Preboot Menu

1   Connect a terminal or a computer running terminal emulation software to the node's serial management port using an optional multi-port cable.

Refer to the *Sun Blade X6275 M2 Installation Guide* for additional details on how to log into ILOM using a serial connection.

2   Reboot the ILOM using one of these methods:

- From the server module node ILOM, enter the command:

  ```
  -> reset /SP
  ```

- From the CMM ILOM, enter the command:

  ```
  -> reset /CH/BLx/NODEy/SP
  ```

  Where:

  x is the slot number of the blade.

  y is the node number whose SP will be reset.

- Temporarily remove power from the server module by removing it partway from its slot and then reseating it. For details, see the *Sun Blade X6275 M2 Server Module Service Manual*.

  Note – If you are unable to access the ILOM, you can reboot the ILOM by using the CMM ILOM or by removing power from the server module.

  The ILOM reboots, and messages begin scrolling on the screen.

3   Interrupt the ILOM boot process using one of these methods:

- Press and hold the Locate button on the server module front panel immediately after reinserting the blade until the preboot menu appears.

- Type in **xyzzy** when you see the message:

  ```
  Booting linux in
   n seconds...
  ```

> **Note –** You cannot interrupt the ILOM boot process by typing **xyzzy** until you have configured the settings as described in "How to Use the edit Command and to Configure the Preboot Menu for Remote Access" on page 56. One of these settings sets the value of *n*, which is the amount of time in seconds that the system waits for your input.

The ILOM preboot menu appears as shown here.

```
Booting linux in 10 seconds...

                      ILOM Pre-boot Menu
                      ------------------
Type "h" and [Enter] for a list of commands, or "?" [Enter] for
command-line key bindings.  Type "h cmd" for summary of 'cmd' command.

Warning: SP will warm-reset after 300 seconds of idle time.
  Set 'bootretry' to -1 to disable the time-out.

Preboot>
```

4   When you are done, enter the boot command to exit the preboot menu and start ILOM.

See Also
- "Preboot Menu Command Summary" on page 53
- "Using the edit Command and Configuring the Preboot Menu For Remote Access" on page 55
- "Resetting the Root Password to the Factory Default" on page 58
- "Restoring ILOM Access to the Serial Console" on page 59
- "Recovering the SP Firmware Image" on page 60

Preboot Menu Command Summary

The preboot menu includes the following commands.

Command	Description
boot	Boots the ILOM. The preboot menu exits and the ILOM boots.
	Note – This command executes a modified boot sequence that does not offer the choice to select the diagnostic level, or to interrupt the boot sequence and return to the preboot menu. To execute the normal boot sequence, use the reset warm command instead.
vers	Displays version information including the hardware type, board rev, ILOM rev, revisions of PBSW and recovery U-Boot. Shows the checksum integrity of the images, and the preference between redundant images.
help	Displays a list of commands and parameters.

Command	Description
show	Displays a list of SP settings.
edit	Starts an interactive dialog that prompts and changes settings one-by-one. See "Using the edit Command and Configuring the Preboot Menu For Remote Access" on page 55 for details.
diag	Runs the U-boot diagnostic tests in manual mode. See the *x86 Server Diagnostics Guide* for more on U-boot diagnostic tests.
host	Initiates various activities related to the host. ■ clearcmos – Clears CMOS and BIOS passwords. ■ console – Connects the SP console to host serial console. **Note** – To quit, type: Ctrl \ q ■ show – Shows information about the host state. ■ enable-on – Enables the front-panel power button, which is usually disabled unless the ILOM is running. **Caution** – If you start the host when the ILOM is off, the BIOS does not send error events, or power messages to the SP. This can cause all server modules to lose power. ■ hard-off – Turns the host off.
net	{ config | dhcp | ping | flash } ■ config - Starts a dialog that allows you to change the ILOM's network settings. ■ dhcp - Changes the network addressing from static to dhcp. **Note** – You must set ipdiscovery=dhcp using the net config command first. ■ ping - Sends a ping. ■ flash - Downloads an ILOM firmware image. See "Recovering the SP Firmware Image" on page 60 Type **help net** *command* for more details on these commands.
reset	{[warm]| cold }. Resets the SP and the host. ■ warm - Resets the SP without affecting a running host. ■ cold - Resets the SP and the host. It has the effect of powering off the server module.

Command	Description
unconfig	{ users | ilom_conf | most | all }
	Causes the ILOM to erase any configuration information and return the values to defaults the next time it boots.
	■ users - Resets all configured user information.
	■ password - Resets the ILOM root password to the default. See "How to Reset the Root Password to the Factory Default" on page 58 for more details.
	■ ilom_conf - Resets configuration settings but preserves SP network and baudrate, preferred, and check_physical_presence.
	■ most - Resets the SP data storage, but preserves network and baudrate, preferred, and check_physical_presence settings.
	■ all - Resets all SP data storage and settings. Booting the ILOM restores other defaults.
	Note – None of these options erases the dynamic FRU PROMs.

See Also

■ "Using the edit Command and Configuring the Preboot Menu For Remote Access" on page 55
■ "Resetting the Root Password to the Factory Default" on page 58
■ "Restoring ILOM Access to the Serial Console" on page 59
■ "Recovering the SP Firmware Image" on page 60

Using the edit Command and Configuring the Preboot Menu For Remote Access

This section shows how to use the edit command to change preboot menu settings. As an example, it also shows how to set the bootdelay and check_physical_presence settings so that you can interrupt the ILOM boot process using the **xyzzy** command.

Until the bootdelay and check_physical_presence settings are set to the values shown in this procedure, the only way to interrupt the ILOM boot process is to hold the Locate button down while the ILOM is booting.

■ bootdelay is optional, but setting it to a larger value gives you more time to enter the required command.

■ check_physical_presence must be set to **no**.

Next Steps

▼ How to Use the edit Command and to Configure the Preboot Menu for Remote Access

1 Access the preboot menu.

For more information, refer to "Accessing the Preboot Menu" on page 51.

2 At the preboot prompt, enter the command:

```
Preboot> edit
```

The preboot menu enters edit mode. In edit mode, the preboot menu displays its selections one-by-one, offering you a chance to change each one.

- To change a setting, type the new value, then press Enter.
- To skip to the next setting, press Enter.

3 Press Enter to move through the settings until the bootdelay setting appears.

4 To change the bootdelay setting, type 3, 10, or 30, and press Enter.

This specifies the number of seconds the SP boot process waits for your input.

The preboot menu redisplays the bootdelay setting with the new value.

5 Press Enter.

The next setting appears.

6 Press Enter to move through the settings until the check_physical_presence setting appears.

To change the check_physical_presence setting, type **no**, and then press Enter.

The preboot menu redisplays the check_physical_presence setting with the new value.

7 Press Enter.

The preboot menu ask you to confirm your changes:

```
Enter "y[es]' to commit changes: [no]
```

8 Enter y to exit the edit session and save your changes.

If you want to exit without saving your changes, enter **n**.

The following display shows an edit session where the bootdelay and check_physical_presence settings are changed. See the table that follows for a description of edit command settings:

```
Preboot> edit

Press Enter by itself to reach the next question.
  Press control-C to discard changes and quit.

 Values for baudrate are {[ 9600 ]| 19200 | 38400 | 57600 | 115200 }.
  Set baudrate?              [9600]
 Values for serial_is_host are {[ 0 ]| 1 }.
  Set serial_is_host?        [0]
 Values for bootdelay are { -1 | 3 | 10 | 30 }.
  Set bootdelay?             [30] 10
  Set bootdelay?             [10]
 Values for bootretry are { -1 | 30 | 300 | 3000 }.
  Set bootretry?             [<not set>]
 Values for preferred are {[ 0 ]| 1 }.
  Set preferred?             [<not set>]
 Values for preserve_conf are {[ yes ]| no }.
  Set preserve_conf?         [yes]
 Values for preserve_users are {[ yes ]| no }.
  Set preserve_users?        [no]
 Values for preserve_password are {[ yes ]| no }.
  Set preserve_password?     [yes]
 Values for check_physical_presence are {[ yes ]| no }.
  Set check_physical_presence? [no] no
  Set check_physical_presence? [no]
 Enter 'y[es]' to commit changes: [no] y
Summary: Changed 2 settings.
Preboot>
```

Setting	Description
baudrate	Sets the baud rate of the serial port. Selections include 9600,19200, 38400, 57600, and 115200.
serial_is_host	If this is set to 0, the serial port connects to the ILOM. If this is set to 1, the serial port connects to the host. For more details, see "Restoring ILOM Access to the Serial Console" on page 59.
bootdelay	The number of seconds the bootstrap process waits for the user to enter **xyzzy** before booting the SP.
bootretry	The number of seconds the preboot menu waits for user input before timing out and starting the SP. Set to -1 to disable the timeout.
preferred	Unused.
preserve_conf	Setting this to no duplicates the function of the unconfig ilom_conf command, which resets many ILOM configuration settings, but preserves SP network, baudrate, and check_physical_presence the next time the SP is booted.

Setting	Description
preserve_users	Setting this to no duplicates the function of the unconfig users command, which resets user information to the default value next time the SP is booted.
preserve_password	Setting this to no duplicates the function of the unconfig password command, which resets the root password to the default next time the SP is booted.
check_physical_presence	If this is set to Yes, you must press and hold the Locate button to interrupt the SP boot process. If it is set to No, the boot process prompts you to interrupt it. See "Using the edit Command and Configuring the Preboot Menu For Remote Access" on page 55 for details.

Resetting the Root Password to the Factory Default

If you forget the root password, you can use the preboot menu to reset it to the factory default (changeme).

Next Steps

"How to Reset the Root Password to the Factory Default" on page 58

▼ How to Reset the Root Password to the Factory Default

1 Access the preboot menu.

For more information, refer to "Accessing the Preboot Menu" on page 51.

2 At the preboot prompt, enter the command:

Preboot> **unconfig password**

A confirmation is displayed.

Setting 'preserve_password' to 'no' for the next boot of ILOM.

3 Reboot the SP. Enter the command:

Preboot> **boot**

The preboot menu exits and the SP boots. The root password is set to changeme when the SP is finished booting.

Restoring ILOM Access to the Serial Console

This section describes how to use the preboot menu to restore access to the ILOM serial console. This is necessary if the serial console is configured to connect to the host, and a network connection to the ILOM is unavailable.

The serial port can be configured to connect to the server's ILOM service processor (SP) or to the host console. The serial port is configured to the SP by default.

You can change this setting using ILOM or the preboot menu.

- If a network connection is available, use the procedure in "Switching the Default Serial Port Output Between SP and Host Console" on page 29 to configure the serial port connection to the SP.
- If a network connection is unavailable, use the procedure in"How to Use the Preboot Menu to Restore Access to the Serial Console" on page 59 to restore ILOM access to the serial console.

Next Steps

▼ How to Use the Preboot Menu to Restore Access to the Serial Console

1 Access the preboot menu.

For more information, refer to "Accessing the Preboot Menu" on page 51.

2 At the preboot prompt, enter the command:

```
Preboot> edit
```

The preboot menu enters edit mode.

In edit mode, the preboot menu displays its selections one-by-one, offering you a chance to change each one.

- To change a setting, type the new value, then press Enter.
- To skip to the next setting, press Enter.

3 Press Enter to move through the settings until the `serial_is_host` setting appears.

To change the serial_is_host setting, type **0**, and then press Enter.

The preboot menu redisplays the serial_is_host setting with the new value.

4 Press Enter.

The next setting appears.

5   **Press Enter to scroll through the settings until the preboot menu asks you to confirm your changes.**

```
Enter "y[es]' to commit changes: [no]
```

6   **Enter y to confirm your change.**

The preboot menu displays this message:

```
Summary: Changed 1 settings.
Preboot>
```

Recovering the SP Firmware Image

The preboot menu provides the ability to recover the ILOM firmware image by updating (flashing) the SP firmware.

Normally, if the host is running, you can update the SP using the ILOM CLI or the web interface.

If the host is powered off and the SP firmware image becomes corrupted (making the node SP inaccessible using ILOM), you can use the following procedure to update it using the preboot menu.

■ "How to Recover the SP Firmware Image" on page 60

▼ How to Recover the SP Firmware Image

Before You Begin   You must have a valid .flash SP firmware image file on a tftp server. In addition, the tftp server must be accessible over a network connection to your server's SP. This file is available on the tools and drivers DVD (under the sp_firmware directory) , and on the Oracle download site: http://www.oracle.com/goto/blades

---

Note – Updating the SP firmware using the preboot menu requires a .flash file instead of the .pkg file used to update the SP from ILOM.

---

1   **Access the Preboot Menu.**

For more information, refer to "Accessing the Preboot Menu" on page 51.

2   **At the preboot prompt, enter the command:**

Preboot> **net dhcp**

This configures a DHCP network. You need to be network connected to access to your tftp server.

3   **Enter the command:**

Preboot> **net ping** *tftpIPaddress*

Where *tftpIPaddress* is the IP address of a tftp server.

This checks to see if the tftp server is accessible over the network.

4   Enter the command:

Preboot> **net flash** *tftpIPaddress path*/**ILOM-***version***-Sun_Blade_X6275M2.flash**

Where:

- *tftpIPaddress* is the IP address of a tftp server
- *path* is the path to the file relative to /tftpboot
- *version* is the version of SP firmware

For example:

Preboot> **net flash 10.8.173.25 images/ILOM-3_0_10_15_r58871-Sun_Blade_X6275M2.flash**

This downloads and flashes the firmware image. After a series of messages, the preboot prompt appears.

5   Restart the SP by entering the command:

Preboot> **reset**

The preboot menu exits and service processor reboots.

Indicators, Sensors, and Traps

This section describes the ILOM sensors and indicators, and the SNMP and PET traps.

- Indicators report the state of system indicators such as LEDs.
- Sensors report physical information about the server, including voltages, temperatures, fan speeds, and installation and removal of components.
- SNMP and PET traps send information about events to the event log and an IPMI baseboard management controller.

Topics in this section include:

Indicators

These report the state of the system indicators, including LEDs.

See the *Sun Blade X6275 M2 Installation Guide* for descriptions of the LEDs and indicators.

Path	Indicator	Values
/SYS/OK	Green OK LED	On/Fast Blink/Slow Blink/Standby Blink
/SYS/OK2RM	Blue OK to Remove LED	Off/On
/SYS/SERVICE	Amber Service LED	Off/On
/SYS/LOCATE	White Locate LED	Off/On

Path	Indicator	Values
/SYS/MB/P0/SERVICE	CPU error condition	Off/On
/SYS/MB/P0/D0/SERVICE	DIMM error condition	Off/On
/SYS/MB/P0/D1/SERVICE	DIMM error condition	Off/On
/SYS/MB/P0/D2/SERVICE	DIMM error condition	Off/On
/SYS/MB/P0/D3/SERVICE	DIMM error condition	Off/On
/SYS/MB/P0/D4/SERVICE	DIMM error condition	Off/On
/SYS/MB/P0/D5/SERVICE	DIMM error condition	Off/On

Temperature and Power Sensors

Sensors report the state of the sensors located throughout the server's components.

These sensors report on the temperature sensors and the power consumption.

Name	Sensor Type	Value
/SYS/MB/T_AMB_FRONT	Temperature	24.000 degrees C (example)
/SYS/MB/T_AMB_REAR	Temperature	55.000 degrees C (example)
/SYS/HOT	Temperature	State Deasserted/Asserted
/SYS/VPS	System power unit (watts)	102.000 Watts (example)

Chassis Fan Failure Sensors

These sensors assert predictive failure when a fan is expected to fail. Normally, they should read "Predictive Failure Deasserted."

Name	Sensor Type	Values
/SYS/FM0/ERR	Fan	Predictive Failure Deasserted/Asserted
/SYS/FM1/ERR	Fan	Predictive Failure Deasserted/Asserted
/SYS/FM2/ERR	Fan	Predictive Failure Deasserted/Asserted

Name	Sensor Type	Values
/SYS/FM3/ERR	Fan	Predictive Failure Deasserted/Asserted
/SYS/FM4/ERR	Fan	Predictive Failure Deasserted/Asserted
/SYS/FM5/ERR	Fan	Predictive Failure Deasserted/Asserted

Chassis Fan Speed Sensors

These sensors indicate the speed of the chassis fans. The chassis fans are divided into six modules (FM0 through FM5) with two fans each (F0 and F1).

Name	Sensor Type	Value
/SYS/FM0/F0/TACH	Fan	5400.000 RPM (example)
/SYS/FM0/F1/TACH	Fan	5300.000 RPM (example)
/SYS/FM1/F0/TACH	Fan	5300.000 RPM (example)
/SYS/FM1/F1/TACH	Fan	5400.000 RPM (example)
/SYS/FM2/F0/TACH	Fan	5300.000 RPM (example)
/SYS/FM2/F1/TACH	Fan	5400.000 RPM (example)
/SYS/FM3/F0/TACH	Fan	5400.000 RPM (example)
/SYS/FM3/F1/TACH	Fan	5400.000 RPM (example)
/SYS/FM4/F0/TACH	Fan	5300.000 RPM (example)
/SYS/FM4/F1/TACH	Fan	5300.000 RPM (example)
/SYS/FM5/F0/TACH	Fan	5300.000 RPM (example)
/SYS/FM5/F1/TACH	Fan	5400.000 RPM (example)

Entity Presence Sensors

These sensors report the presence or absence of system components.

- P0 and P1 represent CPU 0 and CPU 1
- D0 through D5 represent DIMMs 0 through 5.

Name	Sensor Type	Values
/SYS/HOSTPOWER	EntityPresence	Present/Absent
/SYS/NODEID	OEM	Server module node # (0 or 1)
/SYS/SLOTID	OEM	Server module chassis slot # (0 to 9)
/SYS/CMM/PRSNT	CMM Presence	Present/Absent
/SYS/PEM/PRSNT	PEM Presence	Present/Absent
/SYS/MB/P0/PRSNT	Entity Presence	Present/Absent
/SYS/MB/P1/PRSNT	Entity Presence	Present/Absent
/SYS/MB/P0/D0/PRSNT	DIMM Presence	Present/Absent
/SYS/MB/P0/D1/PRSNT	DIMM Presence	Present/Absent
/SYS/MB/P0/D2/PRSNT	DIMM Presence	Present/Absent
/SYS/MB/P0/D3/PRSNT	DIMM Presence	Present/Absent
/SYS/MB/P0/D4/PRSNT	DIMM Presence	Present/Absent
/SYS/MB/P0/D5/PRSNT	DIMM Presence	Present/Absent
/SYS/MB/P1/D0/PRSNT	DIMM Presence	Present/Absent
/SYS/MB/P1/D1/PRSNT	DIMM Presence	Present/Absent
/SYS/MB/P1/D2/PRSNT	DIMM Presence	Present/Absent
/SYS/MB/P1/D3/PRSNT	DIMM Presence	Present/Absent
/SYS/MB/P1/D4/PRSNT	DIMM Presence	Present/Absent
/SYS/MB/P1/D5/PRSNT	DIMM Presence	Present/Absent

NEM and Blade Presence Sensors

These sensors indicate whether there are NEMs in NEM slots 0 and 1, and whether any blades are in slots 0 through 9.

Name	Sensor Type	Values
/SYS/NEM0/PRSNT	Entity Presence	Present/Absent
/SYS/NEM1/PRSNT	Entity Presence	Present/Absent
/SYS/NEM0/ERR	OEM	Predictive Failure Deasserted/Asserted

Name	Sensor Type	Values
/SYS/NEM1/ERR	OEM	Predictive Failure Deasserted/Asserted
/SYS/NEM0/STATE	Module	Running/Not Running
/SYS/NEM1/STATE	Module	Running/Not Running
/SYS/BL0/PRSNT	Entity Presence	Present/Absent
/SYS/BL0/ERR	OEM	Predictive Failure Deasserted/Asserted
/SYS/BL0/STATE	Module	Not Readable
/SYS/BL1/PRSNT	Entity Presence	Present/Absent
/SYS/BL1/ERR	OEM	Predictive Failure Deasserted/Asserted
/SYS/BL1/STATE	Module	Not Readable
/SYS/BL2/PRSNT	Entity Presence	Present/Absent
/SYS/BL2/ERR	OEM	Predictive Failure Deasserted/Asserted
/SYS/BL2/STATE	Module	Not Readable
/SYS/BL3/PRSNT	Entity Presence	Present/Absent
/SYS/BL3/ERR	OEM	Predictive Failure Deasserted/Asserted
/SYS/BL3/STATE	Module	Not Readable
/SYS/BL4/PRSNT	Entity Presence	Present/Absent
/SYS/BL4/ERR	OEM	Predictive Failure Deasserted/Asserted
/SYS/BL4/STATE	Module	Not Readable
/SYS/BL5/PRSNT	Entity Presence	Present/Absent
/SYS/BL5/ERR	OEM	Predictive Failure Deasserted/Asserted
/SYS/BL5/STATE	Module	Not Readable
/SYS/BL6/PRSNT	Entity Presence	Present/Absent
/SYS/BL6/ERR	OEM	Predictive Failure Deasserted/Asserted

Name	Sensor Type	Values
/SYS/BL6/STATE	Module	Not Readable
/SYS/BL7/PRSNT	Entity Presence	Present/Absent
/SYS/BL7/ERR	OEM	Predictive Failure Deasserted/Asserted
/SYS/BL7/STATE	Module	Not Readable
/SYS/BL8/PRSNT	Entity Presence	Present/Absent
/SYS/BL8/ERR	OEM	Predictive Failure Deasserted/Asserted
/SYS/BL8/STATE	Module	Not Readable
/SYS/BL9/PRSNT	Entity Presence	Present/Absent
/SYS/BL9/ERR	OEM	Predictive Failure Deasserted/Asserted
/SYS/BL9/STATE	Module	Not Readable

Voltage Sensors

These readings are asserted when the voltage is OK and deasserted when the designated power supply generates a fault.

Name	Type	Values
/SYS/FMOD0/V_FMOD_CAP	Voltage	4.84 Volts
/SYS/MB/P0/V_DIMM	Voltage	1.5 Volts
/SYS/MB/P1/V_DIMM	Voltage	1.5 Volts
/SYS/PS0/S0/V_IN_ERR	Voltage	Predictive Failure Deasserted/Asserted
/SYS/PS0/S0/V_OUT_OK	Voltage	State Asserted/Deasserted
/SYS/PS0/S1/V_IN_ERR	Voltage	Predictive Failure Deasserted/Asserted
/SYS/PS0/S1/V_OUT_OK	Voltage	State Asserted/Deasserted
/SYS/PS1/S0/V_IN_ERR	Voltage	Predictive Failure Deasserted/Asserted
/SYS/PS1/S0/V_OUT_OK	Voltage	State Asserted/Deasserted

Name	Type	Values
/SYS/PS1/S1/V_IN_ERR	Voltage	Predictive Failure Deasserted/Asserted
/SYS/PS1/S1/V_OUT_OK	Voltage	State Asserted/Deasserted

SNMP Traps

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

The MIBs are available on the tools and drivers CD and can be downloaded from http://www.oracle.com/goto/blades.

The following tables list SNMP traps for each sensor.

Memory Events

SNMP Trap Message	ILOM Event Message	Description	Sensor Name
sunHwTrapMemoryFault	fault.memory.channel. misconfigured	Major; A memory component is suspected of causing a fault	/SYS/MB/P/D
sunHwTrapMemoryFault Cleared	fault.memory.channel. misconfigured	Informational; A memory component fault has been cleared	/SYS/MB/P/D
sunHwTrapComponentFault	fault.memory.intel.dimm.none fault.memory.conroller. inputinvalid fault.memory.controller. initfailed fault.memory.intel.dimm. population-invalid	Major; A memory component is suspected of causing a fault	/SYS/MB
sunHwTrapComponentFault Cleared	fault.memory.intel.dimm.none fault.memory.conroller. inputinvalid fault.memory.controller. initfailed fault.memory.intel.dimm. population-invalid	Informational; A memory component fault has been cleared	/SYS/MB

SNMP Trap Message	ILOM Event Message	Description	Sensor Name
sunHwTrapMemoryFault	fault.memory.intel.dimm. incompatible fault.memory.intel.dimm. incompatible-maxranks fault.memory.intel.dimm. incompatible-quadrank	Major; A memory component is suspected of causing a fault	/SYS/MB/P/D
sunHwTrapMemoryFault Cleared	fault.memory.intel.dimm. incompatible fault.memory.intel.dimm. incompatible-maxranks fault.memory.intel.dimm. incompatible-quadrank	Informational; A memory component fault has been cleared	/SYS/MB/P/D

Environmental Events

SNMP Trap Message	ILOM Event Message	Description	Sensor Name
sunHwTrapPowerSupplyFault	fault.chassis.env.power.loss	Major; A power supply component is suspected of causing a fault	/SYS/MB/PS
sunHwTrapPowerSupplyFault Cleared	fault.chassis.env.power.loss	Informational; A power supply component fault has been cleared	/SYS/MB/PS
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/
sunHwTrapTempCritThreshold Exceeded	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_AMB_FRONT /SYS/MB/T_AMB_REAR
sunHwTrapTempCritThreshold Deasserted	Lower critical threshold no longer exceeded	Informational; A temperature sensor has reported that its value is in the normal operating range	/SYS/MB/T_AMB_FRONT /SYS/MB/T_AMB_REAR

SNMP Trap Message	ILOM Event Message	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_AMB_FRONT /SYS/MB/T_AMB_REAR
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_FRONT /SYS/MB/T_AMB_REAR
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_AMB_FRONT /SYS/MB/T_AMB_REAR
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_AMB_FRONT /SYS/MB/T_AMB_REAR
sunHwTrapTempFatal ThresholdExceeded	Upper 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/T_AMB
sunHwTrapTempCritThreshold Exceeded	Upper 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/T_AMB
sunHwTrapTempCritThreshold Deasserted	Upper critical threshold no longer exceeded	Informational; A temperature sensor has reported that its value is in the normal operating range	/SYS/T_AMB
sunHwTrapTempFatal ThresholdDeasserted	Upper 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/T_AMB
sunHwTrapComponentError	Assert	Major; A power supply sensor has detected an error	/SYS/HOT /SYS/PS*n*/S*n*/V_OUT_OK

SNMP Trap Message	ILOM Event Message	Description	Sensor Name
sunHwTrapComponentOk	Deassert	Informational; A power supply sensor has returned to its normal state	/SYS/HOT /SYS/PSn/Sn/V_OUT_OK

Device Events

SNMP Trap Message	ILOM Event Message	Description	Sensor Name
sunHwTrapComponentFault	fault.chassis.device.missing	Major; A major component is suspected of causing a fault	/SYS/
sunHwTrapComponentFault Cleared	fault.chassis.device.missing	Informational; A component fault has been cleared	/SYS/
sunHwTrapComponentFault	fault.chassis.device.fail	Major; A component is suspected of causing a fault	/SYS/CMM
sunHwTrapComponentFault Cleared	fault.chassis.device.fail	Informational; A component fault has been cleared	/SYS/CMM
sunHwTrapIOFault	fault.chassis.device.fails	Major; A component in the IO subsystem is suspected of causing a fault	/SYS/NEM
sunHwTrapIOFault Cleared	fault.chassis.device.fails	Informational; An IO subsystem component fault has been cleared	/SYS/NEM

Power Supply Events

SNMP Trap Message	ILOM Event Message	Description	Sensor Name
sunHwTrapPowerSupplyError	Assert	Major; A power supply sensor has detected an error	/SYS/PWRBS
SunHwTrapPowerSupplyOk	Deassert	Informational; A power supply sensor has returned to its normal state	/SYS/PWRBS
sunHwTrapPowerSupplyFault	fault.chassis.env.power.loss	Major; A power supply component is suspected of causing a fault	/SYS/PS
sunHwTrapPowerSupplyFault Cleared	fault.chassis.env.power.loss	Informational; A power supply component fault has been cleared	/SYS/PS

PET Event Messages

Platform Event Trap (PET) events 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.

System Power Events

PET Trap Message	ILOM Event Message	Description	Sensor Name
petTrapPowerUnitState DeassertedAssert	PowerSupply sensor ASSERT	Critical; A run-time power fault has occurred	/SYS/PWRBS
petTrapPowerSupplyState AssertedAssert	PowerSupply sensor DEASSERT	Informational; Power supply is connected to AC Power	/SYS/PWRBS

Entity Present Events

PET Trap Message	ILOM Event Message	Description	Sensor Name
petTrapProcessorPresence DetectedDeassert	EntityPresence Insert	Critical; A processor is absent or has been removed	/SYS/HOSTPOWER /SYS/CMM/PRSNT /SYS/MB/Pn/PRSNT /SYS/PEMn/PRSNT /SYS/MB/Pn/Dn/PRSNT /SYS/NEMn/PRSNT /SYS/BLn/PRSNT /SYS/PSn/PRSNT
petTrapEntityPresenceDevice Inserted Assert	EntityPresence Remove	Informational; A device is present or has been inserted	/SYS/HOSTPOWER /SYS/CMM/PRSNT /SYS/MB/Pn/PRSNT /SYS/PEMn/PRSNT /SYS/MB/Pn/Dn/PRSNT /SYS/NEMn/PRSNT /SYS/BLn/PRSNT

Environmental Events

PET Trap Message	ILOM Event Message	Description	Sensor Name
petTrapTemperatureState DeassertedDeassert	Temperature sensor ASSERT	Informational; Temperature event occurred	/SYS/HOT
petTrapTemperatureState DeassertedDeassert	Temperature sensor DEASSERT	Critical; Temperature event occurred	/SYS/HOT
petTrapTemperatureUpperNon RecoverableGoingLowDeassert	Temperature Upper non-critical threshold has been exceeded	Major; Temperature has decreased below upper non-recoverable threshold	/SYS/MB/T_AMB_FRONT /SYS/MB/T_AMB_REAR
petTrapTemperatureState AssertedAssert	Temperature Upper non-critical threshold no longer exceeded	Critical; Temperature event occured. Possible cause: CPU is too hot	/SYS/MB/T_AMB_FRONT /SYS/MB/T_AMB_REAR
petTrapTemperatureUpper CriticalGoingHigh	Temperature Lower fatal threshold has been exceeded	Major; Temperature has increased above upper critical threshold	/SYS/MB/T_AMB_FRONT /SYS/MB/T_AMB_REAR
petTrapTemperatureUpper CriticalGoingLowDeassert	Temperature Lower fatal threshold no longer exceeded	Warning; Temperature has decreased below upper critical threshold	/SYS/MB/T_AMB_FRONT /SYS/MB/T_AMB_REAR
petTrapTemperatureLower NonCriticalGoingLow	Temperature Lower critical threshold has been exceeded	Warning; Temperature has decreased below lower non-critical threshold	/SYS/MB/T_AMB_FRONT /SYS/MB/T_AMB_REAR
petTrapTemperatureLower NonCriticalGoingHighDeassert	Temperature Lower critical threshold no longer exceeded	Informational; Temperature has returned to normal	/SYS/MB/T_AMB_FRONT /SYS/MB/T_AMB_REAR
petTrapTemperatureUpper NonCriticalGoingHigh	Temperature Upper critical threshold has been exceeded	Warning; Temperature has increased above upper non-critical threshold	/SYS/MB/T_AMB_FRONT /SYS/MB/T_AMB_REAR
petTrapTemperatureUpper NonCriticalGoingLowDeassert	Temperature Upper critical threshold no longer exceeded	Informational; Temperature has returned to normal	/SYS/MB/T_AMB_FRONT /SYS/MB/T_AMB_REAR
petTrapTemperatureLower CriticalGoingLow	Temperature Lower fatal threshold has been exceeded	Major; Temperature has decreased below lower critical threshold	/SYS/MB/T_AMB_FRONT /SYS/MB/T_AMB_REAR
petTrapTemperatureLower CriticalGoingHighDeassert	Temperature Lower fatal threshold no longer exceeded	Warning; Temperature has increased above lower critical threshold	/SYS/MB/T_AMB_FRONT /SYS/MB/T_AMB_REAR
petTrapTemperatureLower NonRecoverableGoingHigh Deassert	Temperature Lower non-critical threshold has been exceeded	Major; Temperature has increased above lower non-recoverable threshold	/SYS/MB/T_AMB_FRONT /SYS/MB/T_AMB_REAR

PET Trap Message	ILOM Event Message	Description	Sensor Name
petTrapTemperatureUpper NonRecoverableGoingHigh	Temperature Lower non-critical threshold no longer exceeded	Critical; Temperature has increased above upper non-recoverable threshold	/SYS/MB/T_AMB_FRONT /SYS/MB/T_AMB_REAR

Component, Device, and Firmware Events

PET Trap Message	ILOM Event Message	Description	Sensor Name
petTrapOEMPredictiveFailure Deasserted	OEMReserved reporting Predictive Failure	Informational; OEM Predictive Failure Deasserted	/SYS/CMM/ERR /SYS/NEM*n*/ERR /SYS/BL*n*/ERR
petTrapSystemFirmwareError	OEMReserved Return to normal	Informational; System Firmware Error reported	/SYS/CMM/ERR /SYS/NEM*n*/ERR /SYS/BL*n*/ERR
petTrapModuleBoardTransition ToRunningAssert	Module Transition to Running assert	Informational	/SYS/NEM*n*/ERR /SYS/BL*n*/ERR
petTrapModuleBoardTransition ToInTestAssert	Module Transition to In Test assert	Informational	/SYS/NEM*n*/ERR /SYS/BL*n*/ERR
petTrapModuleBoardTransition ToPowerOffAssert	Module Transition to Power Off assert	Informational	/SYS/NEM*n*/ERR /SYS/BL*n*/ERR
petTrapModuleBoardTransition ToOnLineAssert	Module Transition to On Line assert	Informational	/SYS/NEM*n*/ERR /SYS/BL*n*/ERR
Undocumented PET 1378820	Module Transition to Off Line assert	Informational	/SYS/NEM*n*/ERR /SYS/BL*n*/ERR
petTrapModuleBoardTransition ToOffDutyAssert	Module Transition to Off Duty assert	Informational	/SYS/NEM*n*/ERR /SYS/BL*n*/ERR
petTrapModuleBoardTransition ToDegradedAssert	Module Transition to Degraded assert	Informational	/SYS/NEM*n*/ERR /SYS/BL*n*/ERR
petTrapModuleBoardTransition ToPowerSaveAssert	Module Transition to Power Save assert	Informational	/SYS/NEM*n*/ERR /SYS/BL*n*/ERR

PET Trap Message	ILOM Event Message	Description	Sensor Name
petTrapModuleBoardInstall ErrorAssert	Module Install Error assert	Informational	/SYS/NEMn/ERR /SYS/BLn/ERR

Power Supply Events

PET Trap Message	ILOM Event Message	Description	Sensor Name
petTrapVoltageStateDeasserted Deassert	Voltage sensor ASSERT	Informational; Voltage event occurred	/SYS/PSn/V_OUT_OK
petTrapVoltageStateAsserted Deassert	Voltage sensor DEASSERT	Informational; Voltage event occurred	/SYS/PSn/V_OUT_OK
Undocumented PET 132097	Voltage reporting Predictive Failure	Informational	/SYS/PSn/V_IN_ERR
Undocumented PET 132096	Voltage Return to normal	Informational	/SYS/PSn/V_IN_ERR

Fan Events

PET Trap Message	ILOM Event Message	Description	Sensor Name
petTrapFanPredictiveFailure Deasserted	Fan reporting Predictive Failure	Informational; Fan Predictive Failure state has been cleared	/SYS/FMn/ERR
petTrapFanLowerNon RecoverableGoingLow	Fan Return to normal	Critical; Fan speed has decreased below lower non-recoverable threshold. Fan failed or removed	/SYS//FMn/ERR

Index