Sun ILOM 3.0 Supplement for the Sun Fire X4640 Server

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Contents

Preface

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

Product Information Web Site

For information about the Sun Fire X4640 server, go to the following web site:

`http://www.oracle.com/goto/x86`

Click "Previous Products" from the left nav menu.

At that site, you can find links to the documentation, parts lists and downloads.

Related Books

The following is a list of documents related to your Oracle Sun Fire X4640 server. These and additional support documents are available on the web at:

`http://docs.sun.com/app/docs/prod/server.x64#hic`

Document Group	Document	Description
Sun Fire X4640 Server-Specific Documentation	Sun Fire X4640 Server Product Documentation	Integrated HTML version of all starred (*) documents, including Search and Index.
	Sun Fire X4640 Server Getting Started Guide	Pictorial setup quick reference.

Document Group	Document	Description
	"Installation Overview" in *Sun Fire X4640 Server Installation Guide**	How to install, rack, and configure the server up to initial power-on.
	"Overview of the Sun Fire X4640 Server Product Notes" in *Sun Fire X4640 Server Product Notes**	Important late-breaking information about the Sun Fire X4640 server.
	"Introduction to Sun Installation Assistant" in *Sun Installation Assistant 2.3 through 2.4 User's Guide for x64 Servers**	A Sun tool used to perform an assisted installation of a supported Windows or Linux OS, upgrade firmware (regardless of OS), and other tasks.
	Introduction to Solaris OS and OpenSolaris Installation*	How to install the Solaris OS on your server.
	"Introduction to Linux Installation" in *Sun Fire X4640 Server Linux Installation Guide**	How to install a supported Linux OS on your server.
	"Introduction to Windows Installation" in *Sun Fire X4640 Server Windows Installation Guide**	How to install supported versions of Microsoft Windows on your server.
	"Introduction to ESX Installation" in *Sun Fire X4640 Server ESX Installation Guide**	How to install supported versions of the ESX OS on your server.
	*Sun ILOM 3.0 Supplement for the Sun Fire X4640 Server**	Version-specific supplemental information for your server's *Integrated Lights Out Manager*.
	*Sun Fire X4640 Server Diagnostics Guide**	How to diagnose problems with your server.
	"Sun Fire X4640 Server Service Manual Overview" in *Sun Fire X4640 Server Service Manual**	How to service and maintain your server.
	Sun Fire X4640 Server Safety and Compliance Guide	Safety and compliance information about your server.
	4U Express Rail Rackmounting Kit Label	Pictorial label on racking your server
	Sun Fire X4640 System Overview Label	Pictorial label on servicing your server
	Sun Fire X4640 Top Cover Label	Pictorial label on removing components

Document Group	Document	Description
	Sun Fire X4640 CPU Matrix Label	Pictorial label on CPU module and fillers
Sun Integrated Controller Disk Management	*Sun x64 Server Disk Management Overview*	Information about managing your server's storage.
	Sun LSI 106x RAID Users Guide	Information about LSI RAID features
x64 Servers Applications and Utilities Reference Documentation	*Sun x64 Server Utilities Reference Manual*	How to use the available utilities included with your server.
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 on 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 on management protocols

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, appendices or section numbering.

We Welcome Your Comments

Oracle is interested in improving its documentation and welcomes your comments and suggestions. To share your comments, go to `http://docs.sun.com` and click Feedback.

Change History

The following changes have been made to the documentation set.

- October 2009, initial publication
- January 2010, two documents revised
  - Service Manual - Revised DIMM population rules and addressed illustration issues
  - Product Notes - Revised software information and fixed bugs
- April 2010, one document revised
  - Installation Guide - Revised power specifications
- December 2010, two documents revised
  - Service Manual - Revised motherboard FRUID update instructions
  - Product Notes - Revised software information and fixed bugs

Overview of the ILOM Supplement

Note – Before performing the procedures contained in this topic set, set up your hardware as shown in the *Sun Fire X4640 Server Installation Guide*.

This document describes server-specific features of the Oracle Integrated Lights Out Manager (ILOM) for the Sun Fire X4640 server. The following topics are covered:

Description	Link
Learn about managing the server with the Integrated Lights Out Manager (ILOM).	"ILOM Software Overview" on page 11
Connect to the ILOM or system console.	"Communicating With the ILOM and the System Console" on page 13
Update ILOM, BIOS, and HBA firmware.	"Updating Firmware" on page 27
View ILOM sensor information.	"Using ILOM to Monitor the Host" on page 41

Introduction to ILOM Software

This section contains information on the following topics:

ILOM Software Overview

Sun's Integrated Lights Out Manager (ILOM) provides advanced service processor hardware and software that you can use to manage and monitor your Sun servers. ILOM's dedicated hardware and software is preinstalled on a variety of Sun server platforms, including x64-based Sun Fire servers, Sun Blade modular chassis systems, Sun Blade server modules, as well as on SPARC-based servers. ILOM is a vital management tool in the data center and can be used to integrate with other data center management tools that are already installed on your systems.

Sun is currently transitioning many systems to support ILOM so that customers will have a single, consistent, and standards-based service processor (SP) across Sun's product lines.

For customers, this means you will have:

- Single, consistent system management interfaces for operators
- Rich protocol and standards support
- Broadening third-party management support
- System management functions integrated into Sun servers at no extra cost

What Does ILOM Do?

ILOM enables you to actively manage and monitor the server independently of the operating system state, providing you with a reliable Lights Out Management (LOM) system. With ILOM, you can proactively:

- 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
- 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

The ILOM service processor (SP) runs its own embedded operating system and has a dedicated Ethernet port, which together provide out-of-band management capability. In addition, you can access ILOM from the server's host operating system that Sun supports (Solaris, Linux, and Windows). Using ILOM, you can remotely manage your server as if you were using a locally attached keyboard, monitor, and mouse.

ILOM automatically initializes as soon as power is applied to your server. 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.

Communicating With the ILOM and the System Console

These topics provide instructions for connecting to the system service processor (SP) Integrated Lights Out Manager (ILOM) and the system console:

Server Connections

The following illustration shows the cabling locations on the rear panel of the server.

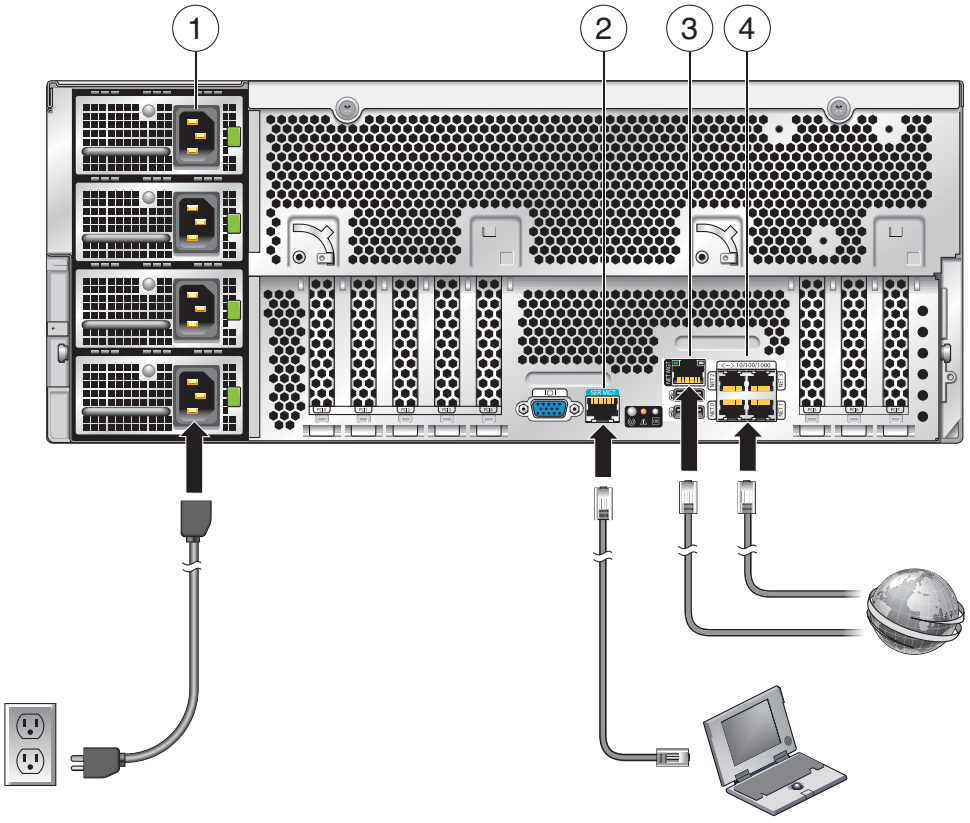


TABLE 1 Figure Legend

1	Connect power cable to power source.
2	Connect a serial cable between the SER MGT port and a terminal device or a PC. **Note –** You might need an adapter. The server comes with a DB9–to-RJ45 serial port adapter.
3	(Optional) Connect an Ethernet cable between the NET MGT port and the network to which future connections to the SP and the host will be made.
4	Connect an Ethernet cable between one of the NET ports and the network.

About ILOM SP IP Addresses and the ILOM Interfaces

The ILOM SP is assigned a DHCP IP address by default.

There are two requirements for DHCP IP address assignment to occur:

- Connection to your network must be through a NET MGT port.
- DHCP services must be present on your network infrastructure.

If a DHCP server cannot be reached after three DHCP requests, the ILOM SP is assigned a *static* IP address based on the network management port MAC address. This IP address is always in the format 192.168.xxx.xxx, where xxx.xxx is the remainder of the IP address.

You can choose from one of several ILOM SP interfaces to support system management on your server.

You can access SP firmware applications through the following ILOM SP interfaces:

- Serial port command-line interface (CLI) (local access)
- Secure shell (SSH) CLI (remote access over the network)
- Web browser user interface (remote access over the network)

Determining the SP IP Address

You need to determine the service processor (SP) IP (network) address to use the SP Integrated Lights Out Manager (ILOM) to manage the server.

You can determine the IP address through either one of these ways:

- "How to Get the SP IP Address Using the BIOS Setup Utility" on page 15
- "How to Get the SP IP Address By Using a Serial Connection and the CLI" on page 16

▼ How to Get the SP IP Address Using the BIOS Setup Utility

Before You Begin

- Complete the hardware setup as described in the hardware setup documentation.
- Apply standby power for your server by plugging an AC cord into the system power supply. See "Server Connections" on page 13 for the location of the power cord connectors.

1. **Reboot the server.**
2. **Press the F2 key when prompted, to access the BIOS Setup Utility.**
3. **In the BIOS Setup Utility, choose Advanced → IPMI 2.0 Configuration → Set LAN Configuration → IP address.**

   The IP address for the SP is displayed.

How to Get the SP IP Address By Using a Serial Connection and the CLI

Before You Begin

- Complete the hardware setup as described in the hardware setup documentation.
- Apply standby power for your server by plugging an AC cord into the system power supply. See "Server Connections" on page 13 for the location of the power cord connectors.

1. **Verify that your terminal, laptop, or terminal server is operational.**

2. **Configure the terminal device or the terminal emulation software running on a laptop or PC to the following settings:**

   - 8N1: eight data bits, no parity, one stop bit
   - 9600 baud
   - Disable hardware flow control (CTS/RTS)
   - Disable software flow control (XON/XOFF)

3. **Connect a serial cable from the RJ-45 SERIAL MGT port on the server's back panel to a terminal device.**

   See "Server Connections" on page 13 for the location of the RJ-45 SERIAL MGT port.

4. **Press Enter on the terminal device to establish a connection between that terminal device and the ILOM SP.**

   The SP eventually displays a login prompt, such as the following example:

   `SUNSP` 0111AP0-0814YT06B4 `login:`

   In this example login prompt:

   - The string SUNSP is the same for all SPs.
   - *0111AP0-0814YT06B4*is the product serial number by default. This value can also be the host name, which is assigned by the user or the DHCP server.

5. **Log in to the ILOM.**

   a. **Type the default user name: `root`.**

   b. **Type the default password: `changeme`.**

      Once you have successfully logged in, the SP displays its default command prompt:

      ```
      ->
      ```

      You can now run CLI commands to configure ILOM for the server's user accounts, network settings, access lists, alerts, and so on. For detailed instructions on CLI commands, see the *Sun Integrated Lights-Out Manager 3.0 CLI Procedures Guide.*

6 **To display the SP IP address, type:**

```
cd /SP/network
```

Note – You can switch back to the SP CLI from the serial console by entering the **`Esc (`** key sequence.

Connecting to the ILOM

This section describes three different procedures for connecting to the ILOM:

- "How to Connect to the Command-Line Interface Using SSH" on page 17
- "How to Connect to the ILOM Command-Line Interface Through the Serial Management Port" on page 17
- "How to Connect to the ILOM Web Interface" on page 19

▼ How to Connect to the Command-Line Interface Using SSH

Before You Begin

- Perform the hardware setup as described in the hardware setup documentation.
- Apply standby power to the server by connecting AC power to the system power supply. See "Server Connections" on page 13 for the location of the power connectors.

1 **Connect the server to the Internet with an Ethernet cable connected to the server's RJ-45 NET MGT Ethernet port.**

See "Server Connections" on page 13 for the location of the RJ-45 NET MGT port.

2 **Using a client system, access a command line and establish a Secure Shell (SSH) connection to the service processor's IP address with the following command:**

`ssh -l root` *sp_ip_address*

For example, to connect to the SP with the DHCP-assigned IP address of 129.144.82.20, type the following command:

```
ssh -l root 129.144.82.20
```

3 **Log in to the ILOM.**

The default user name is `root` and the default password is `changeme`.

▼ How to Connect to the ILOM Command-Line Interface Through the Serial Management Port

Use this procedure to establish a serial connection to the ILOM SP so that you can perform initial configuration of ILOM.

Before You Begin

- Perform the hardware setup as described in the hardware setup documentation.

- Apply standby power to the server by connecting AC power to the system power supply. See "Server Connections" on page 13 for the location of the power connectors.
- Verify that your terminal, laptop, or terminal server is operational.

1 Configure the terminal device or the terminal emulation software running on a laptop or PC to the following settings:

- 8N1: eight data bits, no parity, one stop bit
- 9600 baud
- Disable hardware flow control (CTS/RTS)
- Disable software flow control (XON/XOFF)

2 Connect a serial cable from the RJ-45 SERIAL MGT port on the server's back panel to a terminal device.

See "Server Connections" on page 13 for the location of the RJ-45 SERIAL MGT port.

3 Press Enter on the terminal device to establish a connection between that terminal device and the ILOM SP.

The SP eventually displays a login prompt, such as the following example:

`SUNSP`*`0111AP0-0814YT06B4`*`login:`

In this example login prompt:

- The string SUNSP is the same for all SPs.
- 0111AP0-0814YT06B4 is the product serial number by default. This value can also be the host name, which is assigned by the user or the DHCP server.

4 Log in to the ILOM.

a. Type the default user name: `root`.

b. Type the default password: `changeme`.

Once you have successfully logged in, the SP displays its default command prompt:

```
->
```

You can now run CLI commands to configure ILOM for the server's user accounts, network settings, access lists, alerts, and so on. For detailed instructions on CLI commands, see the *Sun Integrated Lights-Out Manager 3.0 CLI Procedures Guide.*

5 To start the serial console, type:

```
cd /SP/console
```

```
->start
```

Note – You can switch back to the SP CLI from the serial console by entering the **`Esc (`** key sequence.

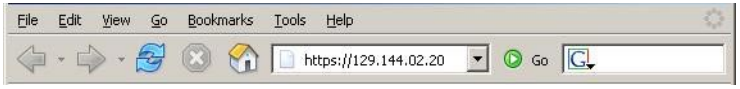
How to Connect to the ILOM Web Interface

Before You Begin

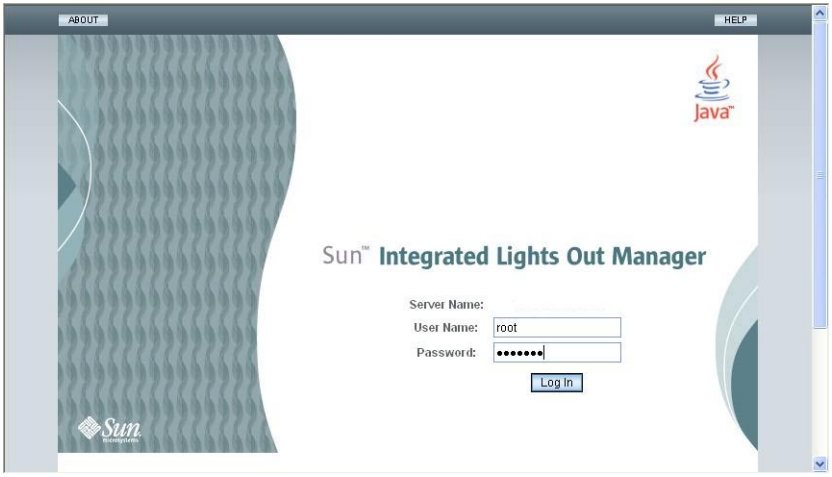
- Perform the hardware setup as described in the hardware setup documentation.
- Apply standby power to the server by connecting AC power to the system power supply. See "Server Connections" on page 13 for the location of the power connectors.

1. **Type the IP address of the ILOM SP in the browser locator box and press Enter.**

   For example, if the IP address for your ILOM SP is 129.144.02.20, you would enter it as shown here:



2. **Log in to the web interface using the default user name, `root`, and the default password, `changeme`.**



Connecting to the System Console

There are three different ways to connect to the system console.

- Physical console. See "How to Connect to the Server Locally (Physical Console)" on page 20
- Remote console through the ILOM web interface. See "How to Connect Remotely Using the ILOM Web Interface" on page 20
- Serial console through the ILOM command-line interface. See "How to Connect to the Serial Console Using the ILOM Command-Line Interface" on page 24

▼ How to Connect to the Server Locally (Physical Console)

If you plan to interact with the system console directly, make the connections described in this procedure. See "Server Connections" on page 13 the for the locations of the system connectors.

Before You Begin Perform the hardware setup as described in the hardware setup documentation.

1 Connect a mouse and a keyboard to the server USB connectors.

2 Connect a monitor to the server video connector.

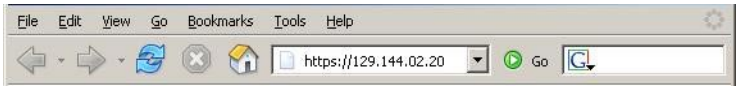
See Also For the locations of the USB connectors and the server video connector, see Sun Fire X4640 Server Front and Back Panel Features and Components.

▼ How to Connect Remotely Using the ILOM Web Interface

Before You Begin The requirements for the JavaRConsole (remote console) system are:

- Solaris, Linux, or Windows operating system is installed.
- The system must be connected to a network that has access to the server's Ethernet management port.
- Java Runtime Environment (JRE) 1.5 or later is installed.
- If the remote console system is running Solaris OS, volume management must be disabled for the remote console to access the physical floppy and CD/DVD-ROM drives.
- If the remote console system is running Windows, Internet Explorer Enhanced Security must be disabled.
- The remote console system and ILOM service processor must be set up according to the instructions in the *Sun Integrated Lights Out Manager (ILOM) Web Interface Procedures Guide*.

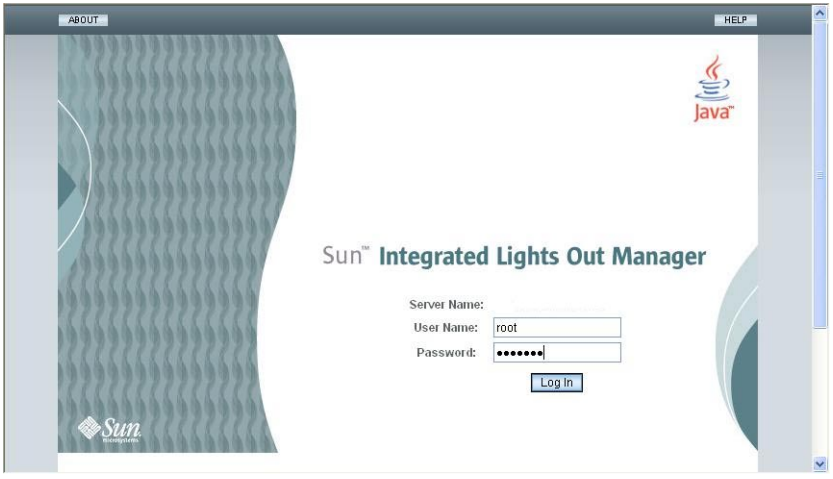
1 **Start the remote console application by typing the IP address of the ILOM service processor into a browser on the remote console system.**



The Security Alert dialog box is displayed.

2 **Click Yes.**

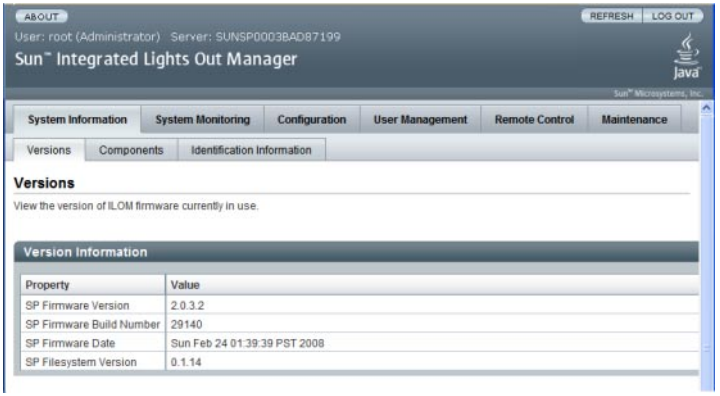
The ILOM login screen appears.



3 **Enter the user name and password and click Log In.**

The default user name is **`root`** and default password is **`changeme`**.

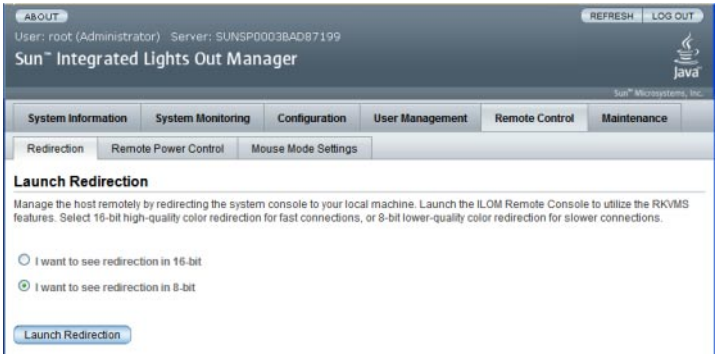
The ILOM Version Information screen appears.



4 Click the Remote Control tab in the ILOM Web interface.

The Launch Redirection screen appears.

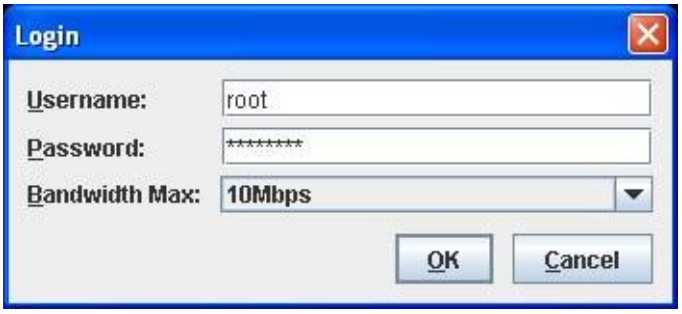
Note – Make sure that the mouse mode is set to Absolute mode in the Mouse Mode Settings tab.



5 Click 8-bit color or 16-bit color, and then click Launch Redirection.

Note – When using a Windows system for remote console redirection, an additional warning appears after clicking Launch Redirection. If the Hostname Mismatch dialog box is displayed, click the Yes button.

The Remote Control dialog box appears.



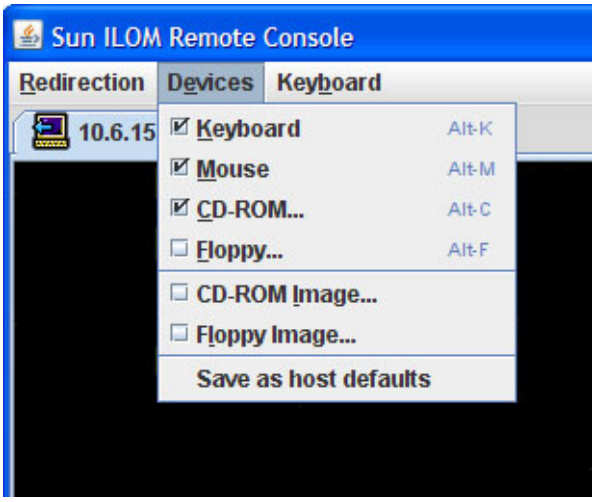
6 **In the Remote Control Login dialog box, enter your user name and password and click OK.**

Note – You must have administrator privileges.

The default user name is **root** and default password is **changeme**.

The JavaRConsole screen appears.

7 **From the Devices menu, select the appropriate item based on the delivery method you have chosen.**



- **Remote Physical Floppy Disk:** Select `Floppy` to redirect the server to the physical floppy drive attached to the remote console.
- **Remote Floppy Image:** Select `Floppy Image` to redirect the server to the floppy image file located on the remote console.
- **Remote Physical CD/DVD:** Select `CD-ROM` to redirect the server to the CD/DVD in the CD/DVD drive attached to the remote console.
- **Remote CD/DVD Image:** Select `CD-ROM Image` to redirect the server to the `.iso` image file located on the remote console.

Note – Using the CD-ROM Remote or CD-ROM Image options to install software on your server significantly increases the time necessary to perform the installation because the content is accessed over the network. The installation duration depends on the network connectivity and traffic.

▼ How to Connect to the Serial Console Using the ILOM Command-Line Interface

Before You Begin

- Connect the server to your network through an Ethernet cable. See "Server Connections" on page 13.
- If you have not already done so, determine the service processor's IP address. See "Determining the SP IP Address" on page 15.

1. **Using a client system, establish a Secure Shell (SSH) connection to the service processor's IP address:**

   `ssh -l root` *sp_ip_address*

2. **Log in to the service processor as an administrator.**

   The default user name is **`root`** and default password is **`changeme`**.

   Note – Only accounts with Administrator privileges are enabled to configure the SP serial port. See "Configuring Network Settings" in the *Sun Integrated Lights Out Manager (ILOM) 3.0 CLI Procedures Guide*.

   ---

3. **Start the ILOM console mode by typing the following:**

   ```
   start /SP/console
   ```

4. **If you have changed the SP Serial Port default settings, make sure you reset them to the default settings.**

Updating Firmware

Updates to the firmware for ILOM, system BIOS, and LSI HBA are periodically available on the server download site to provide additional features and bug fixes for the server. The firmware components must all be updated together for a given software update. The "Firmware Versions Worksheet" on page 27 can be used to keep track of the firmware versions needed for the upgrade process.

The firmware update process includes the procedures covered in the following topics. The procedures are listed in the recommended completion order.

Step	Description	Link
1	Verify the firmware versions that are currently running on the server.	"Determining Current Firmware Versions" on page 28
2	Determine the target firmware versions and download the firmware.	"Preparing for the Firmware Update" on page 32
3	Update the ILOM and system BIOS.	"Updating the ILOM and System BIOS" on page 33
4	Update the Embedded HBA BIOS.	"Updating the Embedded HBA BIOS" on page 38

Firmware Versions Worksheet

The following table is provided to help keep track of firmware versions that you will identify in the procedures described in this section.

Firmware Type	Current Version	Intermediate Version	Target Version
ILOM			
BIOS			
LSI HBA		n/a	

Determining Current Firmware Versions

The first three methods this section describe ways to determine current the ILOM and BIOS firmware versions. The fourth method describes how to determine the LSI HBA firmware version.

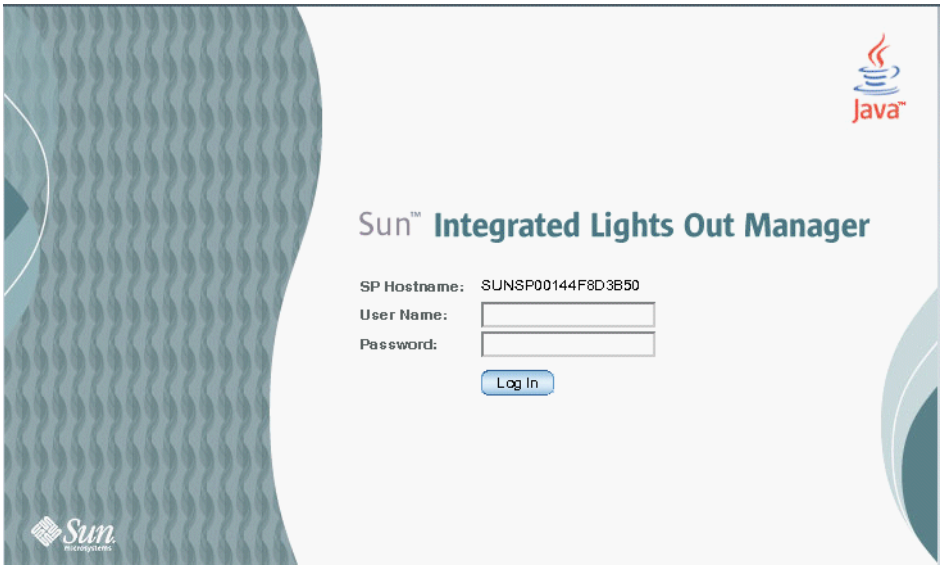
This section contains the following procedures:

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

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

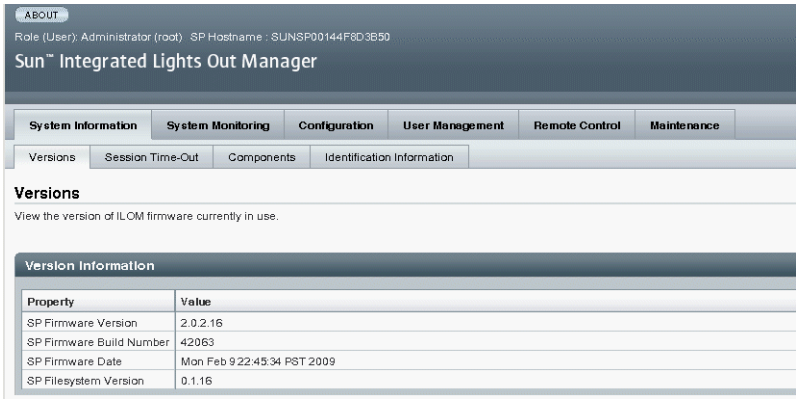
```
https://129.146.53.150
```

The ILOM login screen appears.



2 **Log in to the ILOM SP and type the default user name (root) with the default password (changeme).**

The first web page presented is the System Information —> Versions page, which includes the ILOM version and Build Number.

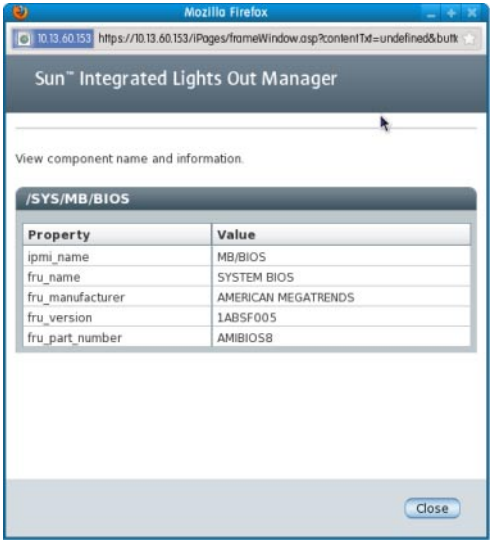


3 **Click on System Information —> Components.**

4 **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.



5 **Note the ILOM and BIOS versions on the "Firmware Versions Worksheet" on page 27.**

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

1. **Configure your terminal device or the terminal emulation software running on a laptop or PC to the following settings:**
   - 8N1: eight data bits, no parity, one stop bit
   - 9600 baud
   - Disable hardware flow control (CTS/RTS)
   - Disable software flow control (XON/XOFF)

2. **Connect a serial cable from the RJ-45 SER MGT port on your server's back panel to your terminal device or PC.**

3. **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 by default. This value can also be the host name, which is assigned by the user or the DHCP server.

4. **Log in to the ILOM SP and type the default user name (root) with the default password (`changeme`).**

   After you have successfully logged in, the SP displays its default command prompt:

   ```
   ->
   ```

5. **To view the ILOM version information, type:**

   ```
   version
   ```

   This command returns output similar to the following:

   ```
   SP firmware 2.0.2.16
   SP firmware build number: 42063
   SP firmware date: Mon Feb  9 22:45:34 PST 2009
   SP filesystem version: 0.1.16
   ```

6. **To view the BIOS version, type:**

   `show /SYS/MB/BIOS`

   The command returns output similar to the following:

   ```
   /SYS/MB/BIOS
      Targets:

      Properties:
      type = BIOS
   ```

```
ipmi_name = MB/BIOS
fru_name = SYSTEM BIOS
fru_manufacturer = AMERICAN MEGATRENDS
fru_version = 1ABSF005
fru_part_number = AMIBIOS8

Commands:
cd
show
```

The fru_version field contains the BIOS version number.

7 Note the ILOM and BIOS versions on the "Firmware Versions Worksheet" on page 27.

▼ How to Verify the ILOM and BIOS Firmware Versions Using the Command—Line Interface Through the Management Ethernet Port

1 Connect an RJ-45 Ethernet cable to the NET MGT Ethernet port on the back panel.

2 Establish an SSH connection using the following command, and then enter the default password (`changeme`) when you are prompted:

```
# ssh –l root sp_ip_address
```

```
changeme
```

After you have successfully logged in, the SP displays its default command prompt:

```
->
```

3 To view the ILOM version information, type:

```
version
```

This command returns input similar to the following:

```
SP firmware 2.0.2.16
SP firmware build number: 42063
SP firmware date: Mon Feb  9 22:45:34 PST 2009
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 = 0ABMN052
        fru_part_number = AMIBIOS8

    Commands:
        cd
        show
```

The fru_version field contains the BIOS version number.

5 **Note the ILOM and BIOS versions on the "Firmware Versions Worksheet" on page 27.**

▼ How to Verify the LSI HBA Firmware Version

1 **Reboot the server.**

2 **Note the LSI firmware version that is displayed during system boot.**

3 **Record the current LSI firmware version in the "Firmware Versions Worksheet" on page 27.**

Preparing for the Firmware Update

This section contains the following topics:

▼ How to Plan the Firmware Update

Firmware for the ILOM, BIOS, and LSI HBA must be updated together. Use the "Firmware Versions Worksheet" on page 27 to record intermediate and target firmware version identified in this procedure.

1 **View the Product Notes for information on all firmware versions available for the server, and select the software download version that contains the versions of the firmware that you want to download.**

Note – For some ILOM and BIOS updates, you need to update to an intermediate firmware version before you update to the final target ILOM version. Any needed intermediate firmware versions will be specified in the Product Notes.

---

2 **Record the intermediate and target firmware versions in the "Firmware Versions Worksheet" on page 27.**

3. **Navigate to the A-to-Z listing downloads page from the Servers and Storage Systems section of the Software download page:**

   `http://www.oracle.com/technology/software/index.html`

▼ How to Download Firmware Updates

1. **Determine which software update corresponds to the firmware that you want to download. See "Preparing for the Firmware Update" on page 32.**
2. **Click on Download in the row for the correct firmware update.**
3. **Choose Firmware from the Platform drop-down list.**
4. **Click the box to agree to the software license agreement.**
5. **Enter your Sun download center user name and password.**

   If you do not have a user name and password, you can register free of charge by clicking Register Now.
6. **Click the appropriate image file name: `ILOM-`*firmware_version*`.ima`.**

   For example: `ILOM-3_0_3_31-r42822.ima-Sun_Fire_X4640.ima`
7. **Select the files you want, and then click the "Download Selected with Sun Download Manager" (SDM) button to automatically install and use SDM.**

   Additional instructions for using SDM are available on the download site.

   Use of SDM is recommended but not required. Alternately, you can click directly on file names to download with your browser.

Updating the ILOM and System BIOS

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

- "How to Update the ILOM and System BIOS Using the Web Interface" on page 33
- "How to Update the ILOM and System BIOS Using the Command-Line Interface" on page 36

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

Before You Begin

- Identify the version of ILOM that is currently running on your system. See "Determining Current Firmware Versions" on page 28.

- Download the firmware image for your server or CMM from the Sun platform's product web site. See "How to Download Firmware Updates" on page 33.
- Copy the firmware image to the system on which the web browser is running, using a supported protocol (TFTP, FTP, HTTP, HTTPS).
- 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 takes about six minutes to complete. During this time, do not perform other ILOM tasks. When the firmware update is complete, the system will reboot.

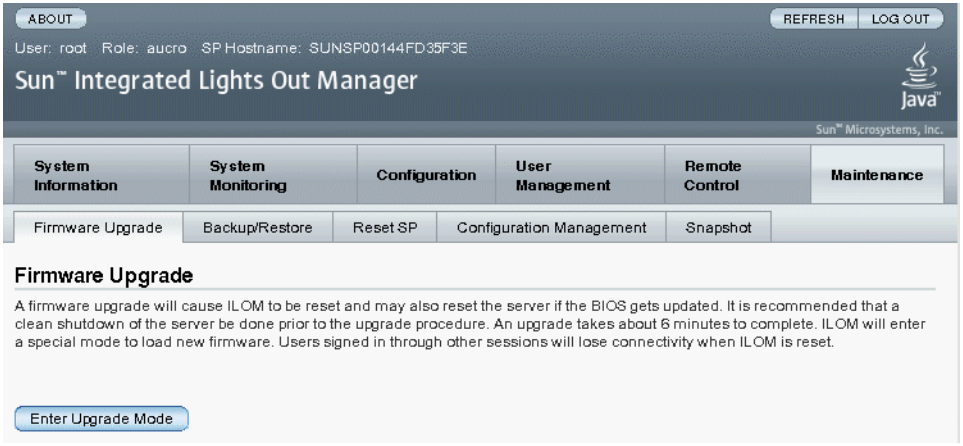
---

1 Log in to the ILOM web interface.

See "How to Connect to the ILOM Web Interface" on page 19.

2 Select Maintenance –> Firmware Upgrade.

The Firmware Upgrade page appears.

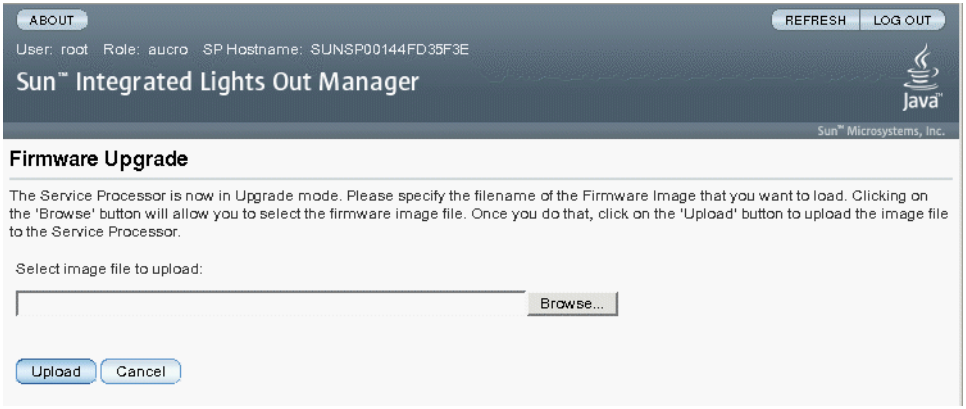


3 In the Firmware Upgrade page, click Enter Upgrade Mode.

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

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

You are prompted to select an image file to upload.



5 **Perform the following actions:**

a. **Specify the image location by performing one of the following:**

- **Click Browse to select the location of the firmware image you want to install.**
- **If supported on your system, click Specify URL. Then type into the text box the URL for the firmware image.**

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

Wait for the file to upload and validate.

The Firmware Verification page appears.

6 **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 reboots.**

7 **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.

8 **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.

9 **Log in to the SP ILOM web interface.**

10 **Select System Information –> Version to verify that the firmware version on the SP or CMM corresponds to the firmware image you installed.**

▼ How to Update the ILOM and System BIOS Using the Command-Line Interface

Before You Begin

- Identify the version of ILOM that is currently running on your system. See "Determining Current Firmware Versions" on page 28.
- Download the firmware image for your server from the Sun platform product web site. See "How to Download Firmware Updates" on page 33.
- Copy the firmware image to a local server using a supported protocol (TFTP, FTP, HTTP, HTTPS).

- 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, type -> **`show /SP/network`**.

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

---

1 Log in to the ILOM CLI.

See "Connecting to the ILOM" on page 17 for more info.

2 Type the following command to load the ILOM firmware image:

->**`load –source`** *supported_protocol*://*server_ip*/*path_to_firmware_image*/*filename*.**`ima`**

If your system has an ILOM 2.x version, you must use the TFTP protocol to load the firmware image. If your system has a ILOM 3.x version, you can use TFTP, FTP, HTTP, or HTTPS.

A note about the firmware update process is displayed, 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.

The prompt to preserve the configuration appears.

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

Type y to save your existing ILOM configuration and to restore that configuration when the update process is completed.

Typing n at this prompt advances you to another platform-specific prompt.

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.

Note – If you answer no (n) to the prompt, the system postpones the BIOS update until the next time the system reboots. If you answer yes (y) to the prompt, the system automatically updates the BIOS, if necessary, when updating the firmware.

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

6 Reconnect to the ILOM server SP or CMM using an SSH connection and using the same user name and password that you provided in Step 1 of this procedure.

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

7 **To ensure that the proper firmware version was installed, at the CLI prompt, type:**

```
-> version
```

Updating the Embedded HBA BIOS

To update the LSI firmware, you must boot the system from a special CD or CD image.

There are two ways you can do this:

- "How to Update the LSI Firmware Using the Remote Console Method" on page 38
- "How to Update the LSI Firmware Using the Local Method" on page 39

▼ How to Update the LSI Firmware Using the Remote Console Method

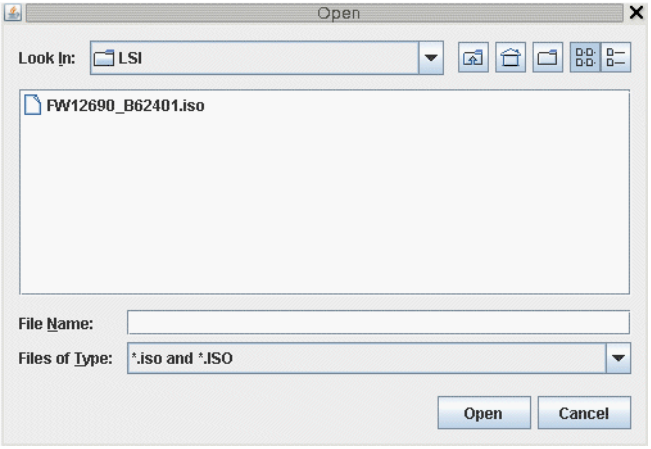
1 **Connect to the ILOM Remote Console, according to the instructions in "How to Connect Remotely Using the ILOM Web Interface" on page 20.**

2 **In the remote console window, select Devices.**

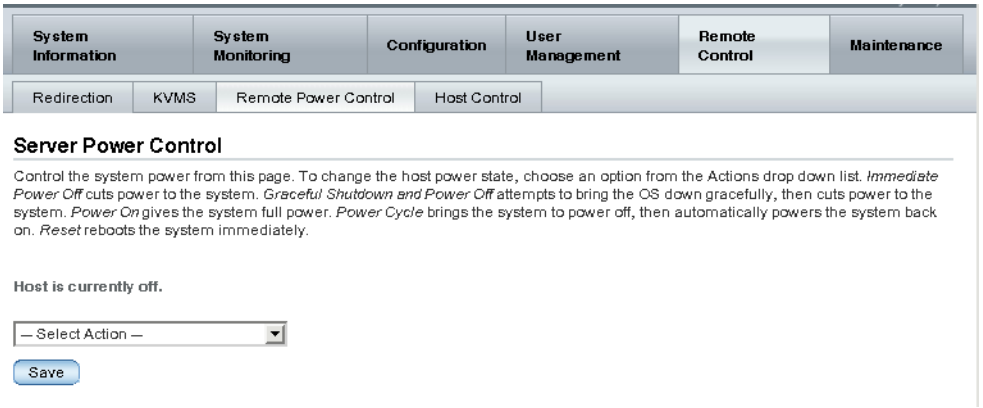
3 **At the pop-up screen, select the CD-ROM Image.**

A check mark is displayed on the drop-down menu selection.

4 **Browse to the LSI firmware update image .iso file, and select the correct .iso image file.**



5 **Select Remote Control -> Remote Power Control in the ILOM GUI.**



6 **Select Reset from the drop-down menu.**

7 **When the system reboots, select 1 (Perform the Update) from the remote console window.**

The update proceeds.

When complete, the console responds with a new prompt.

8 **In the remote console window, select Devices -> CDROM Image to detach the LSI firmware update .iso file.**

9 **Select Keyboard -> Control Alt Delete.**

The system boots, and the new LSI firmware version is displayed in the boot messages.

You will notice the new LSI firmware version.

▼ How to Update the LSI Firmware Using the Local Method

1 **Download the LSI firmware .iso file from the Sun Fire X64 servers web site and burn it to a bootable CD.**

Note – The bootable CD appear blanks when viewed using the operating system. This is expected behavior.

---

2 **Insert the bootable CD and reboot the server.**

The firmware is upgraded.

3 **Reboot the system.**

The new LSI firmware version is displayed in the boot messages.

Using ILOM to Monitor the Host

This section describes the sensors and indicators that can be accessed through the ILOM.

Sensors report physical information about the server, including voltages, temperatures, fan speeds, and installation and removal of components.

Indicators report important server conditions.

All sensors and indicators are IPMI-compliant.

TABLE 2 System ILOM Sensors

Name	Description
/SYS/DBP/HDD*X*/FAIL	HDD*X* Predictive Failure
/SYS/DBP/PRSNT	Disk Backplane Present
/SYS/FP/PRSNT	Front Panel Indicator Module Present
/SYS/FT*X*/FM*Y*/FZ/SPEED	Front Fan Board *X* Fan Module *Y* Fan *Z* Speed in RPMs
/SYS/FT*X*/FM*Y*/PRSNT	Front Fan Board X Fan Module Y Present
/SYS/INTSW	Intrusion Switch Tripped
/SYS/MB/T_AMB*X*	Motherboard Sensor *X* Ambient Temperature in Degrees Celsius
/SYS/MB/V_+12V	Motherboard 12V Main Input
/SYS/MB/V_+1V2	Motherboard 1.2V Core Input for Motherboard
/SYS/MB/V_+1V5	Motherboard 1.5V Core Input
/SYS/MB/V_+2V5	Motherboard 2.5V Core Input
/SYS/MB/V_+3V3	Motherboard 3.3V Main Input
/SYS/MB/V_+3V3AUX_R	Motherboard Standby Devices 3.3V Auxiliary Input
/SYS/MB/V_+5V	Motherboard 5V Main Input
/SYS/MB/V_-12V	Motherboard -12V Main Input
/SYS/MB/V_BAT	Motherboard Battery Voltage

TABLE 2 System ILOM Sensors *(Continued)*

Name	Description
/SYS/PS*X*/PRSNT	Power Supply *X* Present
/SYS/PS*X*/PWROK	Power Supply *X* Supplying Power
/SYS/PS*X*/VINOK	Power Supply *X* AC Input Available
/SYS/P*X*/CARDFAIL	CPU Module *X* Failure
/SYS/P*X*/PROCHOT	CPU Module *X* Overheating (split-plane modules only)
/SYS/P*X*/PRSNT	CPU Module *X* Present
/SYS/P*X*/T_AMB	CPU Module *X* Ambient Temperature in Degrees Celsius
/SYS/P*X*/T_CORE	CPU Module *X* Core Temperature in Degrees Celsius
/SYS/P*X*/V_+0V9VTT	CPU Module *X* 0.9V VTT Input
/SYS/P*X*/V_+12V	CPU Module *X* !2V Main Input
/SYS/P*X*/V_+1V2	CPU Module *X* 1.2V Core Input
/SYS/P*X*/V_+1V8	CPU Module *X* 1.8V Core Input
/SYS/P*X*/V_+2V5	CPU Module *X* 2.5V Core Input
/SYS/P*X*/V_+3V3AUX_R	CPU Module *X* 3.3V Auxiliary Input
/SYS/P*X*/V_CORE	CPU Module *X* Core Voltage
/SYS/P*X*/V_NB	CPU Module *X* 5V Main Input (split-plane modules only)

TABLE 3 System ILOM Indicators

Name	Description
/SYS/DBP/HDD*X*/SERVICE	Service LED for HDD *X* is lit.
/SYS/FT*X*/FM*Y*/SERVICE	Service LED for Front Fan Board *X* Fan Module *Y* is lit
/SYS/P*X*/CARD/SERVICE	Service LED for CPU Module *X* is lit
/SYS/P*X*/D*Y*/SERVICE	Service LED for CPU Module *X* DIMM *Y* is lit
/SYS/P*X*/SERVICE	Service LED for CPU on CPU Module *X* is lit
/SYS/FAN_FAULT	Fan Fault LED on Front Panel is lit
/SYS/LOCATE	Locate LEDs are lit
/SYS/POWER	Power LED is lit
/SYS/PSU_FAULT	PSU Fault Detected

TABLE 3 System ILOM Indicators *(Continued)*

Name	Description
/SYS/SERVICE	Front Panel Service LED is lit
/SYS/TEMP_FAULT	Temperature Fault Detected

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