Sun Fire™ X2250 Server Installation Guide

Sun Microsystems, Inc.
www.sun.com

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Contents

Preface

This *Sun Fire X2250 Server Installation Guide* contains procedures for installing the server into a rack, connecting to the service processor, and configuring the preinstalled Solaris™ Operating System.

Using UNIX Commands

This document might not contain information about basic UNIX® commands and procedures such as shutting down the system, booting the system, and configuring devices. Refer to the following for this information:

- Software documentation that you received with your system
- Solaris™ Operating System documentation, which is at:

  `http://docs.sun.com`

Shell Prompts

Shell	Prompt
C shell	*machine-name*`%`
C shell superuser	*machine-name*`#`
Bourne shell and Korn shell	`$`
Bourne shell and Korn shell superuser	`#`

Typographic Conventions

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

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

Related Documentation

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

http://docs.sun.com

At that site, search for the Sun Fire™ X2250 Server.

Note – The last two digits of the documentation part number identify the latest version of the product documentation that is available for download (or viewing online). For example: 820-xxxx-**XX**.

Title	Content	Part Number	Format
Sun Fire X2250 Server Product Notes	Late-breaking information about the server.	820-4594	PDF HTML
Sun Fire X2250 Server Getting Started Guide	Basic installation information for setting up the server.	820-4590	PDF Print
Sun Fire X2250 Server Installation Guide	Detailed installation information for setting up the server.	820-4591	PDF HTML Print option
Sun Fire X2250 Server Operating System Installation Guide	Installation instructions for the Solaris, Linux, and Windows Server operating systems.	820-4592	PDF HTML
Sun Installation Assistant for Windows and Linux User's Guide	Installation instructions using the Sun Installation Assistant for the Linux and Windows Server operating systems.	820-3357	PDF HTML
Sun Fire X2250 Server Service Manual	Information and procedures for maintaining and upgrading the server.	820-4593	PDF HTML
Sun Integrated Lights Out Manager 2.0 User's Guide	ILOM features and tasks that are common to servers and server modules that support ILOM.	820-1188	PDF HTML

Title	Content	Part Number	Format
Sun Integrated Lights Out Manager Supplement for Sun Fire X2250 Server	ILOM information that is specific to the server.	820-4596	PDF HTML
Sun Fire X2250 Server Safety and Compliance Manual	Hardware safety and compliance information for the server.	820-4595	PDF
Important Safety Information for Sun Hardware Systems	Multilingual hardware safety and compliance information for all Sun hardware systems.	816-7190	Print

Support and Training

Sun Function	URL
Support	http://www.sun.com/support/
Training	http://www.sun.com/training/

Product Updates

For product updates that you can download for the Sun Fire X2250 server, visit the following web site:

http://www.sun.com/download/

Find the Hardware Drivers section and click x64 Servers & Workstations. The Sun Fire X2250 server site contains updates for firmware and drivers, as well as CD-ROM `.iso` images.

Third-Party Web Sites

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Include the title and part number of your document with your feedback:

Sun Fire X2250 Server Installation Guide, part number 820-4591-10

CHAPTER 1

Setting Up the Sun Fire X2250 Server Hardware

This chapter describes how to set up the Sun Fire X2250 server hardware. It includes the following topics:

Safety and Compliance Information

Refer to the following documents for safety information regarding the Sun Fire X2250 server:

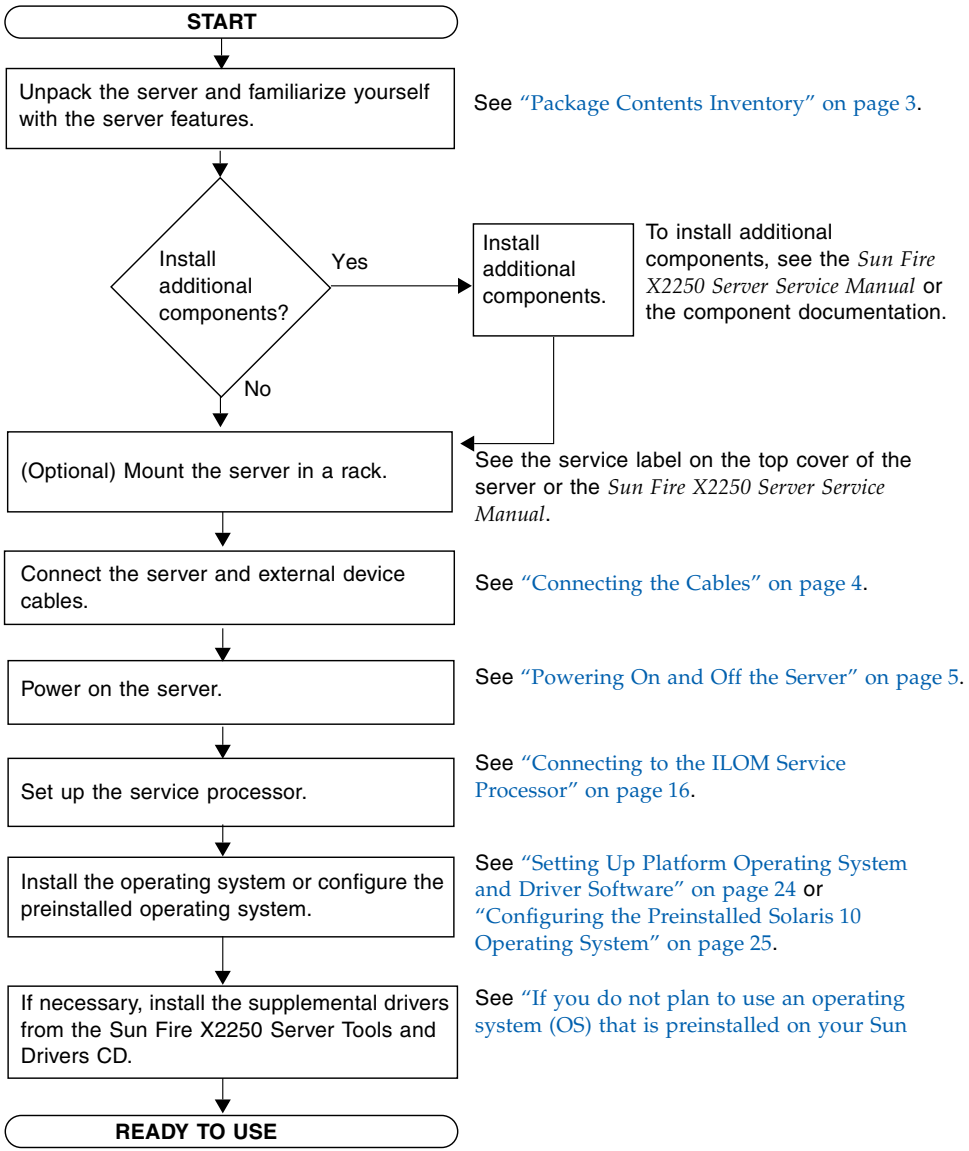
- *Important Safety Information for Sun Hardware Systems*, 816-7190: printed document included in the ship kit.
- *Sun Fire X2250 Server Safety and Compliance Manual* (820-4595): available online by navigating to the Sun Fire X2250 server document page from the following URL:

  `http://docs.sun.com/`

Planning the Installation Process

Use the flowchart in FIGURE 1-1 to assist you with the server installation process.

FIGURE 1-1 Sun Fire X2250 Server Installation Process



Package Contents Inventory

Carefully unpack all server components from the packing cartons. The following items should be packaged with the Sun Fire X2250 server:

- Sun Fire X2250 server
- Sun Fire X2250 server accessory kit (*optional*), including the following:
  - *Sun Fire X2250 Server Installation Guide* (820-4591)
  - Additional license, safety, and registration documentation
  - Sun Fire X2250 Server Tools & Drivers CD (includes drivers and additional software)
- Optional rackmount and/or cable management kit

Installing the Server Into a Rack With Optional Slide Rails

The service label on the top cover of the Sun Fire X2250 server contains instructions for installing your server into a four-post rack using the orderable slide-rail and cable management arm options. Detailed instructions can also be found online in the *Sun Fire X2250 Server Service Manual* (820-4593) at the following URL:

`http://docs.sun.com`

The slide rails for the Sun Fire X2250 server are compatible with a wide range of equipment racks that meet the following standards:

- Four-post structure (mounting at both front and rear). Two-post racks are not compatible.
- Rack horizontal opening and unit vertical pitch conforming to ANSI/EIA 310-D-1992 or IEC 60927 standards.
- Distance between front and rear mounting planes of 610 mm and 915 mm (24 inches to 36 inches).
- Clearance depth (to front cabinet door) in front of front rack mounting plane at least 25.4 mm (1 inch).
- Clearance depth (to rear cabinet door) behind front rack mounting plane at least 800 mm (31.5 inches) with the cable management arm, or 700 mm (27.5 inches), without the cable management arm.

- Clearance width (between structural supports and cable troughs) between front and rear mounting planes at least 456 mm (18 inches).

Caution – Always load equipment into a rack from the bottom up so that the rack will not become top-heavy and tip over. Deploy your rack's anti-tilt bar to prevent the rack from tipping during equipment installation.

Caution – Ensure that the temperature in the rack does not exceed the server's maximum ambient rated temperatures. Consider the total airflow requirements of all equipment installed in the rack, to ensure that the equipment is operated within its specified temperature range.

Connecting the Cables

See FIGURE 1-2 and TABLE 1-1 for the locations of the connectors.

▼ To Connect the Cables

Connect the server and external devices as follows:

1. **Connect a serial null modem cable to the serial port.**

   The default serial port speed is 9600 baud with no flow control.

2. **Connect Ethernet cables to the RJ-45 LAN Gigabit Ethernet connectors as needed (see FIGURE 1-2).**

   Note the following guidelines regarding the Ethernet (LAN) ports:

- The Network Management (NET MGT) Ethernet port or the Serial Management / RS-232-F RJ-45 serial port can be used for server management and network access.

  See "Setting Up the Sun Fire X2250 Server Software" on page 13 for additional information about setting up the service processor for remote system management.

- The two Gigabit Ethernet ports (LAN-0 and LAN-1) are the primary network interface controllers (NICs) and should be used for network installation of the operating system and drivers.

3. **Connect any additional external devices to the server's other connectors.**

FIGURE 1-2 Back Panel

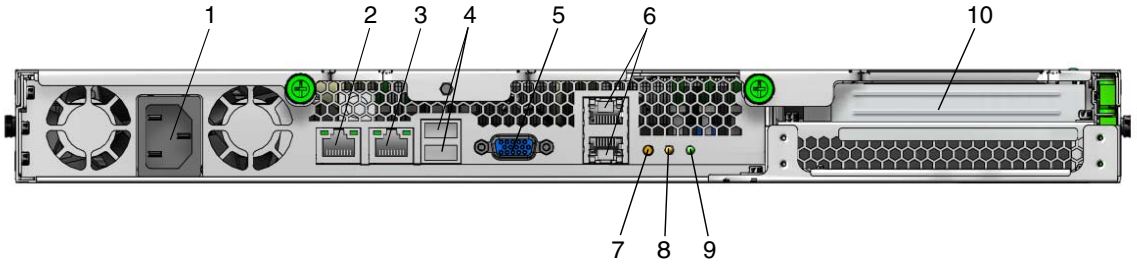


TABLE 1-1 Back Panel

Label	Connector/Slot	Label	Connector/Slot
1	AC Power connector	6	Gigabit Ethernet ports (LAN-0 top, LAN-1 bottom)
2	Network Management (NET MGT) Ethernet port	7	Locate LED
3	Serial Management (SER MGT) / RS-232-F RJ-45 serial port	8	Fault LED
4	USB 2.0 connectors (2)	9	Power LED
5	On-board HD15 video connector	10	PCI Express slot

Powering On and Off the Server

You only need to apply standby power to the server at this point so that you can perform initial configuration of the service processor. Procedures for powering on to main power mode and for shutting down from main power mode are also included in this section, for your reference.

▼ To Apply Standby Power for Initial Service Processor Configuration

Use this procedure to apply standby power to the service processor (SP) before initial configuration.

Caution – Do not operate the server without all fans, component heatsinks, air baffles, and the cover installed. Severe damage to server components can occur if operated without adequate cooling mechanisms.

1. **Connect a grounded AC power cord to the AC power connector on the back panel of the server and to a grounded AC power outlet.**

   In standby power mode, the Power/OK LED on the front panel flashes, indicating that the SP is receiving power. See FIGURE 1-3 and TABLE 1-2.

FIGURE 1-3 Front Panel

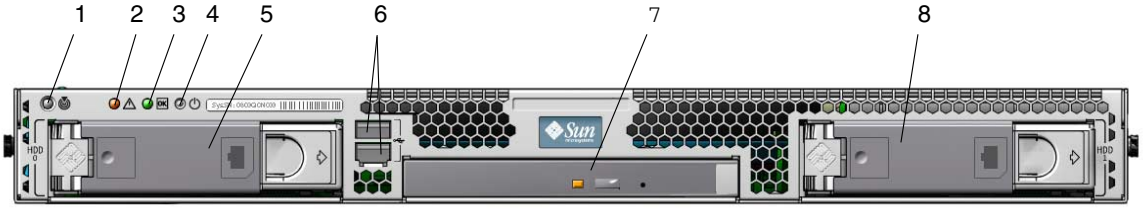


TABLE 1-2 Front Panel

Label	Button/LED/Port	Label	Button/LED/Port
1	Locate LED	5	Optional SATA hard disk drive 0
2	Fault LED	6	USB 2.0 connectors (2)
3	Power/OK LED	7	Optional DVD drive
4	Power button	8	Optional SATA hard disk drive 1

2. **Continue with initial software setup tasks, as described in Chapter 2.**

Note – At this point, standby power is supplied only to the service processor and power supply fans. You can proceed to Chapter 2 of this guide to begin initial configuration. Do not apply main power to the rest of the server until you are ready to install a platform operating system.

▼ To Power On Main Power Mode

To power on main power for all server components:

1. **Verify that the power cord has been connected and that standby power is on.**

   In standby power mode, the Power/OK LED on the front panel flashes. See FIGURE 1-3.

2. **Use a non-metallic stylus to press and release the recessed Power button on the server front panel.**

   When main power is applied to the full server, the Power/OK LED next to the Power button lights and remains lit.

Note – The first time the server powers on, the power-on self-test (POST) can take up to a minute to complete.

▼ To Power Off Main Power Mode

To power off the server from main power mode, use one of the following two methods:

- **Graceful shutdown:** Use a non-metallic stylus to press and release the Power button on the front panel. This causes Advanced Configuration and Power Interface (ACPI) enabled operating systems to perform an orderly shutdown of the operating system. Servers not running ACPI-enabled operating systems will shut down to standby power mode immediately.
- **Emergency shutdown:** Press and hold the Power button for four seconds to force main power off and enter standby power mode. When the main power is off, the Power/OK LED on the front panel will begin flashing, indicating that the server is in standby power mode.

Caution – To completely power off the server, you must disconnect the AC power cords from the back panel of the server.

Setup Troubleshooting and Support

This section contains information to help you troubleshoot minor server problems. It includes the following topics:

Troubleshooting the Sun Fire X2250 Server Setup

If you experience problems while setting up your server, refer to the troubleshooting information in TABLE 1-3.

TABLE 1-3 Troubleshooting Procedures

Problem	Possible Solution
Server powers on, but the monitor does not.	• Is the Power button for the monitor turned on? • Is the monitor power cord connected to a wall outlet? • Does the wall outlet have power? Test by plugging in another device.
CD or DVD does not eject from the media tray when you press the Eject button.	• Move the mouse or press any key on the keyboard. The drive might be in low power mode. • Use the utility software installed on your server to eject the CD. • Ensure that the media in the device is not in use and is not mounted by the operating system.
No video is displayed on the monitor screen.	• Is the monitor cable attached to the video connector? • Does the monitor work when connected to another system? • If you have another monitor, does it work when connected to the original system? • If, after POST and BIOS complete, you no longer see video output on your monitor and only see a flashing cursor, check the configuration of the operating system to determine whether it is configured to redirect its output exclusively over the serial line.

TABLE 1-3 Troubleshooting Procedures *(Continued)*

Problem	Possible Solution
Server does not power on when the front panel Power button is pressed.	Keep notes on the following situations in case you need to call Sun service: • Is the Power/OK LED illuminated on the front of the system? (Ensure that the power cord is connected to the system and to a grounded power receptacle.) • Does the wall outlet have power? Test by plugging in another device. • Does the monitor sync within five minutes after power on? (The green LED on the monitor stops flashing and remains illuminated.)
Keyboard or mouse does not respond to actions.	• Verify that the mouse and keyboard cables are connected to the on-board USB 2.0 connectors on the server. • Verify that the server is powered on and the front Power/OK LED is illuminated.
Server appears to be in low power mode, but the Power/OK LED does not blink.	The Power/OK LED only blinks when all server components are in low power mode. A tape drive might be connected to your server. Because tape drives do not enter low power mode, the Power/OK LED does not blink.
Server is hung or frozen: No response from mouse or keyboard or any application.	Try to access your system from a different server on the network: 1. On another system, type **`ping`** *IP_address_of_X2250* 2. If a response is returned, then try logging in to the Sun Fire X2250 server using either `telnet`, `ssh` or `rlogin`. 3. If you successfully log in, list the running processes using the **`ps`** command. 4. Kill any processes that appear unresponsive or should not be running, by using the **`kill`** *process_ID* command. 5. Check the responsiveness of the Sun Fire X2250 server after each process is killed. If the above procedure does not work, power cycle the server: 1. Press the Power button to power off the server and wait 20 to 30 seconds. 2. Press the Power button again to power on the system.

Note – For additional troubleshooting information, see the *Sun Fire X2250 Server Service Manual* (820-4593).

Contacting Support

If the troubleshooting procedures in this chapter fail to solve your problem, use TABLE 1-4 to collect information that you might need to communicate to the support personnel. TABLE 1-5 lists the Sun web sites and telephone numbers for additional technical support.

TABLE 1-4 System Information Needed for Support

System Configuration Information Needed	Your Information
Sun service contract number	
System model	
Operating environment	
System serial number	
Peripherals attached to the system	
Email address and phone number for you and a secondary contact Street address where the system is located	
Superuser password	
Summary of the problem and the work being done when the problem occurred	
Other Useful Information	
IP address	
Server name (system host name)	
Network or internet domain name	
Proxy server configuration	

TABLE 1-5 Sun Technical Support Contacts

Server Documents and Support Resources	URL or Telephone Number
PDF files for all the current Sun Fire X2250 server documents.	`http://docs.sun.com`
Solaris™ 10 and other software documents. This web site has full search capabilities.	`http://docs.sun.com/documentation/`
Discussion and troubleshooting forums.	`http://supportforum.sun.com/`

TABLE 1-5 Sun Technical Support Contacts *(Continued)*

Server Documents and Support Resources	URL or Telephone Number
Support, diagnostic tools, and alerts for all Sun products.	http://www.sun.com/bigadmin/
SunSolve℠ web site. Contains links to software patches. Lists some system specifications, troubleshooting and maintenance information, and other tools.	http://www.sunsolve.sun.com/handbook_pub/
SunService℠ support phone numbers.	1-800-872-4786 (1-800-USA-4Sun), select Option 1
International telephone numbers for SunService support.	http://www.sun.com/service/contacting/solution.html
Warranty and contract support contacts. Links to other service tools.	http://www.sun.com/service/warrantiescontracts/
Warranties for every Sun product.	http://www.sun.com/service/support/warranty

CHAPTER 2

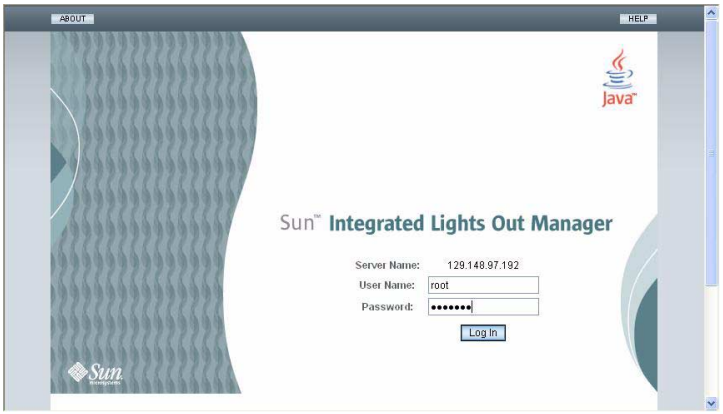
Setting Up the Sun Fire X2250 Server Software

This chapter describes the tasks for initial setup of the server's service processor and Integrated Lights Out Manager software. This chapter contains these topics:

Introduction to the Integrated Lights Out Manager

The Integrated Lights Out Manager (ILOM) provides powerful tools for managing your server.

FIGURE 2-1 Integrated Lights Out Manager Login Page



ILOM consists of four components, three of which are on your host server and one that is on the client system that accesses your host server. The four components are as follows:

- **ILOM SP hardware.** Your server is equipped with a service processor that performs the following functions:
  - Monitors the status and configuration of field-replaceable components of your server, such as fans, disk drives, and power supplies.
  - Provides serial and Ethernet connections to external terminals or local area networks (LANs).
- **ILOM SP firmware.** A library of system management firmware applications that is preinstalled on the SP. This ILOM firmware is operating system independent. These firmware applications provide the following system management interfaces into your server:
  - A web-based graphical interface
  - A Secure Shell (SSH) command-line interface
  - An IPMI v2.0 command interface
  - A Simple Network Management Protocol (SNMP) v1, v2c, or v3 interface

  These interfaces call the same underlying system management functions on your service processor, so you can choose to work with one or more of these ILOM interfaces to integrate with the other management interfaces running in your data center.
- **Remote Console application.** The Remote Console application enables remote clients to view the graphical console of your host server as though they were directly attached to its video connector. The Remote Console is a mirror of the 1024x768 output from the server's VGA video connector. The remote keyboard, mouse, CD drive, or diskette drive will appear as standard USB devices.

Note – The Remote Console application is not required on the client systems, but a web browser and Sun Java™ runtime environment version 5.0 or later are required on the client systems. You can download Java free from http://java.sun.com.

- **Client-side Secure Shell application.** To access the ILOM SP through a remote Secure Shell (SSH), you must install a Secure Shell communications application on the remote client system (server, workstation, or laptop). Many Secure Shell communications applications are available from commercial or open-source distribution. Refer to http://www.openssh.org for information about open-source client-side SSH applications.

Sun Microsystems™ has configured the ILOM hardware and firmware on your server to reflect the most common default settings used in the field. It is unlikely that you will need to change these defaults.

Connecting to the ILOM Service Processor

There are two methods for connecting to the ILOM SP to perform initial setup and configuration. Use the procedure that you prefer:

- "To Connect to ILOM Using a Serial Connection" on page 16
- "Connecting to ILOM Using an Ethernet Connection" on page 18

▼ To Connect to ILOM Using a Serial Connection

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

Note – This procedure assumes that you have already completed the hardware setup and have applied standby power to your server, as described in Chapter 1.

---

1. **Verify that your terminal, laptop, or terminal server is operational.**
2. **Configure that 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 SER MGT port on the server's back panel to a terminal device.** See FIGURE 1-2 for the location of this 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`*`0003BA84D777`* `login:`

   In this example login prompt:

- The string `SUNSP` is the same for all SPs.
- *0003BA84D777* is the Ethernet MAC address of the particular SP. This will be different for each server.

5. **Log in to 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 other parameters. For detailed instructions on CLI commands, see the *Sun Integrated Lights Out Manager 2.0 User's Guide* (820-1188).

   For instructions on configuring static network settings using the CLI, see "Configuring ILOM Using Static Ethernet Settings" on page 21.

6. **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.

---

7. **After configuring the server, continue with** "Setting Up Platform Operating System and Driver Software" on page 24**.**

Connecting to ILOM Using an Ethernet Connection

To access the full range of ILOM functionality such as the graphical user interface (GUI), you must connect the server's Ethernet port to your local area network (LAN) and configure your Ethernet connection.

ILOM supports Dynamic Host Configuration Protocol (DHCP) and static IP addressing.

- To configure the Ethernet connection using DHCP, see "To Configure ILOM Ethernet Settings Using DHCP" on page 18.
- To configure the Ethernet connection using a static IP address, see "Configuring ILOM Using Static Ethernet Settings" on page 21.

Configuring ILOM Using Dynamic Ethernet Settings

You can configure the Ethernet settings using DHCP.

▼ To Configure ILOM Ethernet Settings Using DHCP

Note – This procedure assumes that you have already completed the hardware setup and have applied standby power for your server, as described in Chapter 1.

---

1. **Verify that your DHCP server is configured to accept new media access control (MAC) addresses by checking with your system administrator.**
2. **Connect an Ethernet cable to the server's RJ-45 NET MGT Ethernet port.** See FIGURE 1-2.

   If the ILOM SP is *not* using static IP addresses, it broadcasts a DHCPDISCOVER packet with the ID of its MAC address. A DHCP server on your LAN returns a DHCPOFFER packet containing an IP address and other information. The ILOM SP then manages its "lease" of the IP address that was assigned to it by the DHCP server.
3. **Obtain the ILOM SP IP address from one of the following locations. Record the IP address for future reference.**

- **CLI commands**. The SP has a serial port to which you can attach a terminal device. If you log in to the SP and enter the CLI command **`show /SP/network`**, the SP displays the current IP address. Continue with Step 4.

- **System BIOS Setup screen**. Press F2 during during the server power-on, then choose Advanced → IPMI 2.0 Configuration → Set LAN Configuration → IP address. Continue with Step 4.
- **DHCP server log files**. If you use this method, use Step a through Step c below. Otherwise, skip to Step 4.

  a. **Identify the MAC address of the ILOM SP from one of the following locations. Record the MAC address for future reference.**

  - **CLI commands**. The SP has a serial port to which you can attach a terminal device. If you log in to the SP and type the CLI command **`show /SP/network`**, the SP displays the current MAC address.
  - **Customer Information Sheet**. This document is shipped with your server.
  - **System BIOS Setup screen**. Press F2 during power-on, then choose Advanced → IPMI 2.0 Configuration → Set LAN Configuration → MAC address.

  b. **Log in to your DHCP server and view its DHCP log file.**

Note – Different DHCP server applications running on different operating systems store these log files in different locations. Consult your DHCP system administrator to locate the correct path to the log file.

---

  c. **Identify the IP address in the log file that corresponds to the MAC address of your ILOM SP.**

  Typically, DHCP log file entries are individual lines with the following comma-separated fields:

  ID, Date, Time, Description, IP Address, Host Name, MAC Address

  Locate the MAC address of your ILOM SP in the MAC Address (seventh) field of the correct DHCP file entry and record the corresponding value of the IP Address (fifth) field. This is the IP address that you must use to access the system management firmware applications on your ILOM SP.

4. **Open a session to the ILOM SP using the IP address that you obtained in Step 3.**

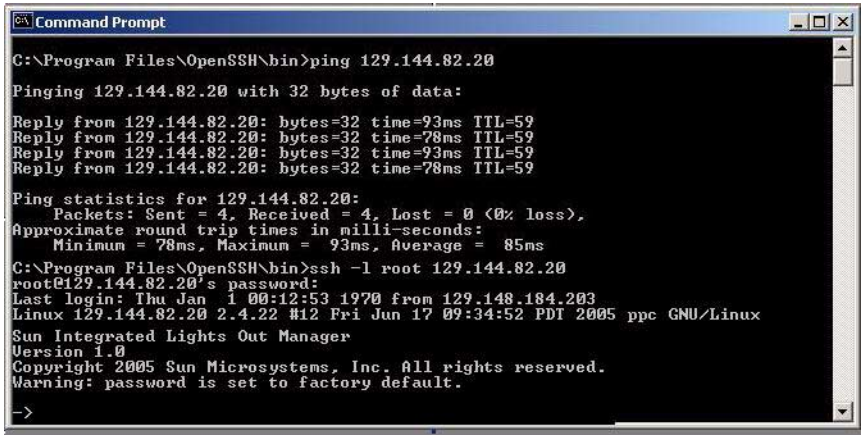
   You can use the CLI or the GUI interface.

- To establish a Secure Shell (SSH) connection to the ILOM SP CLI, type the appropriate connection command in the SSH application. 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
  ```

  The default user name is **`root`**, which was included in the `ssh` command. When you are prompted, enter the default password for the SP, **`changeme`**. You can then enter commands to manage user accounts or to monitor the status of devices on your server. See the example in FIGURE 2-2.

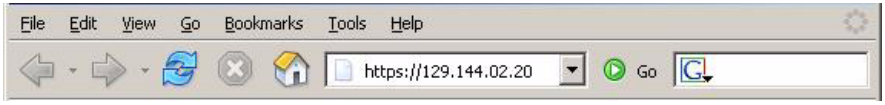
FIGURE 2-2 Opening a Session With an SSH Command-Line Interface



- To establish a connection to the ILOM SP web interface, 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 was 129.144.02.20, you would enter it as shown in FIGURE 2-3. The first web page prompts you for the default username, **root**, and the default password, **changeme**.

FIGURE 2-3 Opening a Session With a Web Interface



5. **After you have entered the user name and password in either the CLI or web interface, you can use the interface to configure your ILOM SP.**

   For detailed instructions on configuring your system, see the *Sun Integrated Lights Out Manager 2.0 User's Guide* (820-1188).

6. **Continue with** "Setting Up Platform Operating System and Driver Software" on page 24**.**

Configuring ILOM Using Static Ethernet Settings

As an alternative to having your DHCP server assign an IP address to your ILOM SP, you can also assign a static IP address to it. You can do this by using the web interface, by using the CLI over the network or serial port, or by using the server's BIOS Setup utility. Use the procedure you prefer.

- "To Configure Static IP Addresses Using the Web Interface" on page 21
- "To Configure Static IP Addresses Using the CLI" on page 22
- "To Configure Static IP Addresses Using the BIOS Setup Utility" on page 23

▼ To Configure Static IP Addresses Using the Web Interface

1. **Determine the current IP address of the ILOM SP from one of the following locations:**

- **CLI command**. The SP has a serial port to which you can attach a terminal device. If you log in to the SP and enter the CLI command **`show /SP/network`**, the SP displays the current IP address.
- **System BIOS Setup screen**. Press F2 during power-on, then choose Advanced → IPMI 2.0 Configuration → Set LAN Configuration → IP address.

2. **Connect to the ILOM SP through a web browser running on a remote system.**

   To establish a connection to the ILOM SP web interface, type the IP address of the ILOM SP in the browser locator box and press **Enter**. See FIGURE 2-3 for an example.

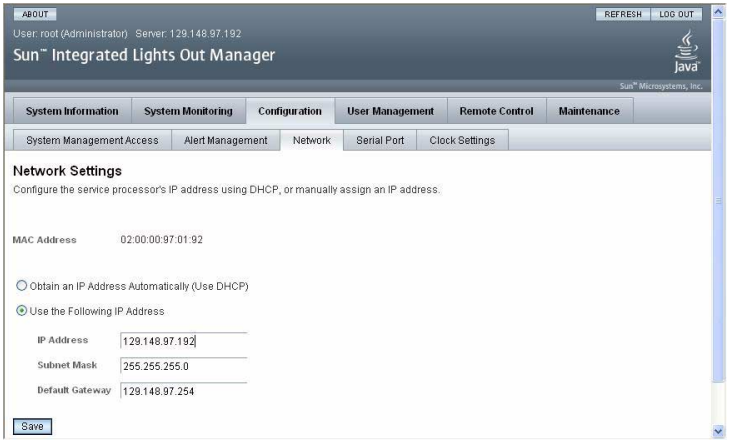
   The ILOM web interface Login screen appears.

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

4. **Choose the Configuration tab and its Network tab to display information about the current network configuration of your ILOM SP. See FIGURE 2-4.**

5. **Select the Use the Following IP Address option and type your static IP address information. See the example in** FIGURE 2-4**.**

FIGURE 2-4 Integrated Lights Out Manager Network Settings Page



▼ To Configure Static IP Addresses Using the CLI

1. **Log into the CLI using SSH or by connecting to the serial port.**

   To establish a Secure Shell (SSH) connection to the ILOM CLI, type the appropriate connection command in the SSH application. For example, to connect to the SP with the DHCP-assigned IP address of 129.144.82.20, you would type the following command:

   ```
   # ssh -l root 129.144.82.20
   ```

   See the example in FIGURE 2-2.

2. **Type the following commands, using your own addresses in place of the examples below:**

   The addresses shown in the commands below are examples.

   ```
   cd /SP/network
   set pendingipaddress=129.144.82.26
   set pendingipnetmask=255.255.255.0
   set pendingipgateway=129.144.82.254
   set pendingipdiscovery=static
   set commitpending=true
   ```

▼ To Configure Static IP Addresses Using the BIOS Setup Utility

1. **Enter the BIOS Setup utility by pressing the F2 key while the system is powering on and performing the power-on self-test (POST).**
2. **When the BIOS Main menu screen is displayed, select** `Advanced`**.**
3. **From the Advanced menu screen, select** `IPMI 2.0 Configuration`**.**
4. **From the IPMI 2.0 Configuration screen, select** `LAN Configuration`**.**
5. **From the LAN Configuration screen, select** `IP Address`**.**
6. **From the IP Address screen, select** `IP Address Mode`**.**
7. **On the IP Address Mode screen, select** `Static`**.**
8. **Type the static IP address in the** `IP Address` **field.**

   Click **ESC** to go back and enter the subnet mask and default gateway settings in their respective fields.
9. **Select** `Commit` **and press Enter to commit the changes.**
10. **Select** `Refresh` **and press Enter to see your new static IP settings displayed in the** `Current IP address in BMC` **field.**
11. **Press and release the right arrow key until the Exit menu screen is displayed.**
12. **Follow the instructions on the Exit menu screen to save your changes and exit the BIOS Setup utility.**

Setting Up Platform Operating System and Driver Software

After configuring the ILOM SP with network settings, you can configure a preinstalled operating system or install a supported Solaris, Linux or Windows platform operating system and drivers.

- If your server contains the preinstalled Solaris 10 Operating System, refer to "Configuring the Preinstalled Solaris 10 Operating System" on page 25 for instructions on configuring the Solaris OS on your server.
- For details about installing a supported Solaris, Windows or Linux OS and the required drivers, refer to *Sun Fire X2250 Server Operating System Installation Guide* (820-4592), or the *Sun Installation Assistant for Windows and Linux User's Guide* (820-3357).
  - Refer to the *Sun Fire X2250 Server Operating System Installation Guide* for information to manually install and configure a supported Solaris, Windows, or Linux OS on your server.
  - Refer to the *Sun Installation Assistant for Windows and Linux User's Guide* for information on using the Sun Installation Assistant (SIA) to install and configure a supported Windows or Linux OS on your server. With SIA, you can install the OS, the appropriate drviers, and if necessary, additional system software by simply booting the SIA media and following the prompts.
- For additional OS considerations specific to this server, refer to the *Sun Fire X2250 Server Product Notes* (820-4594).

If you do not plan to use an operating system (OS) that is preinstalled on your Sun Fire X2250 server, install your preferred OS at this time. If the Solaris 10 OS is preinstalled on the primary boot drive, you will need to remove the OS using the Erase Primary Boot Disk utility on the Tools & Drivers CD.

See the *Sun Fire X2250 Server Operating System Installation Guide* (820-4592) for more information on erasing the primary boot disk and installing an operating system onto the server.

CHAPTER 3

Configuring the Preinstalled Solaris 10 Operating System

This chapter explains the steps for configuring the Solaris™ 10 Operating System (OS) that has been preinstalled on your server. The preinstalled version is Solaris 10 8/07 or later.

Before You Begin

Before you begin configuring the preinstalled OS, you need to do the following:

1. Perform initial configuration of the server's Integrated Lights Out Manager (ILOM) service processor (SP) and determine the server's network settings, as described in "Connecting to the ILOM Service Processor" on page 16.
2. Gather the information that you will need for the configuration, as listed in "Installation Worksheet" on page 26.
3. Select your console output. For details, see "Selecting Your Console Output" on page 29.

Installation Worksheet

Use the worksheet in TABLE 3-1 to gather the information you need to configure the preinstalled Solaris 10 OS. You need to collect only the information that applies to your application.

TABLE 3-1 Worksheet for Installation

Information for Installation		Description or Example	Your Answers: Defaults are noted with an asterisk. (*)
Language		Choose from the list of available languages for the Solaris 10 software.	English*
Locale		Choose your geographic region from the list of available locales.	English (C - 7-bit ASCII)*
Terminal		Choose the type of terminal that you are using from the list of available terminal types.	
Network connection		Is the system connected to a network?	• Networked • Non-networked*
DHCP		Can the system use Dynamic Host Configuration Protocol (DHCP) to configure its network interfaces?	• Yes • No*
If you are not using DHCP, note the network address:	IP address	If you are not using DHCP, supply the IP address for the system. Example: `129.200.9.1`	
	Subnet	If you are not using DHCP, is the system part of a subnet? If yes, what is the netmask of the subnet? Example: `255.255.0.0`	255.255.0.0*
	IPv6	Do you want to enable IPv6 on this machine?	• Yes • No*
Host name		A host name that you choose for the system.	
Kerberos		Do you want to configure Kerberos security on this machine? If yes, gather the following information: Default Realm: Administration Server: First KDC: (Optional) Additional KDCs:	• Yes • No*

TABLE 3-1 Worksheet for Installation *(Continued)*

Information for Installation		Description or Example	Your Answers: Defaults are noted with an asterisk. (*)
Name service: if the system uses a name service, provide the following information.	Name service	Which name service should this system use?	• NIS+ • NIS • DNS • LDAP • None*
	Domain name	Provide the name of the domain in which the system resides.	
	NIS+ and NIS	Do you want to specify a name server or let the installation program find one?	• Specify One • Find One*
	DNS	Provide IP addresses for the DNS server. You must enter at least one IP address, but you can enter up to three addresses. You can also enter a list of domains to search when a DNS query is made. Search Domain: Search Domain: Search Domain:	
	LDAP	Provide the following information about your LDAP profile: Profile name: Profile server: If you specify a proxy credential level in your LDAP profile, gather this information: Proxy-Bind Distinguished Name: Proxy-Bind Password:	

TABLE 3-1 Worksheet for Installation *(Continued)*

Information for Installation	Description or Example	Your Answers: Defaults are noted with an asterisk. (*)
Default route	Do you want to specify a default route IP address or let the Solaris installation program find one? The default route provides a bridge that forwards traffic between two physical networks. An IP address is a unique number that identifies each host on a network. You have the following choices: • You can specify the IP address. An `/etc/defaultrouter` file is created with the specified IP address. When the system is rebooted, the specified IP address becomes the default route. • You can let the Solaris installation program detect an IP address. However, the system must be on a subnet that has a router that advertises itself by using the ICMP router discovery protocol. If you are using the command-line interface, the software detects an IP address when the system is booted. • You can choose None if you do not have a router or do not want the software to detect an IP address at this time. The software automatically tries to detect an IP address on reboot.	• Specify One • Detect One • None*
Time zone	How do you want to specify your default time zone?	• Geographic region* • Offset from GM • Time zone file
Root password	Choose a root password for the system.	

Selecting Your Console Output

Unlike with SPARC® systems, you will *not* see the output of the preinstalled Solaris 10 image through a monitor when you power on the server. Instead, the output of the preinstalled image is directed to a *serial console*.

GRUB, the open source boot loader, is the default boot loader. The boot loader is the first software program that runs after you power on a system.

From the GRUB menu, you have the option of displaying the installation process to a VGA connection (video port), as shown below.

```
**************************************************************************
* Solaris 10 5/08 s10x_u5wos_10 X86  - Serial Port (ttya)          *
* Solaris 10 5/08 s10x_u5wos_10 X86  - Graphics Adapter            *
* Solaris failsafe                                                 *
*                                                                  *
*                                                                  *
*                                                                  *
*                                                                  *
*                                                                  *
**************************************************************************
```

Note – The first line of the above figure shows the default startup mode.

Example

To display output to the video port, choose the following option:

```
Solaris 10 5/08 s10x_u5wos_10 X86 - Graphics Adapter
```

Configuring the Preinstalled Solaris 10 Operating System

Note – Before you perform this procedure, you need to set up the service processor. If you have not done so, see "Before You Begin" on page 25.

Use the information that you gathered in "Installation Worksheet" on page 26 as you perform the configuration.

After configuring the ILOM SP, you can configure the preinstalled Solaris 10 Operating System (OS) by using another system to connect to the server, or install a Linux or Windows platform operating system. The possible ways to do this are described here:

- "To Connect to the Server Using the Service Processor's IP Address" on page 31

  If you use this method, you first need to determine the service processor's IP address and the server must be connected to the network.

- "To Connect to the Server Using a Terminal Program" on page 32

  If you use this method, you do *not* need to determine the service processor's IP address, but you will need to have a cable connection from the server to the serial port of a host system.

- If you want to install a supported Windows or Linux (and Solaris) OS and the required drivers, refer to the *Sun Fire X2250 Server Operating System Installation Guide* (820-4592).
- For additional OS considerations specific to this server, refer to the *Sun Fire X2250 Server Product Notes* (820-4594)

▼ To Connect to the Server Using the Service Processor's IP Address

---

Note – This procedure assumes that you have connected the server to your network through an Ethernet cable.

---

1. **Verify that the communication properties of the serial port of the system are set to the defaults.**

   The default settings are 9600 baud, 8N1 (eight data bits, no parity, one stop bit), disable flow control.

2. **If you have not already done so, determine the service processor's IP address:**

   a. **Power on main power to the server by using a non-metallic stylus to press the recessed Power button on the front panel.**

      Power-on self-test (POST) messages appear on your screen as the OS boots.

   b. **Initialize the BIOS Setup utility by pressing the F2 key while the system is performing the power-on self-test (POST).**

   c. **When the main BIOS screen is displayed, select Advanced.**

   d. **When the Advanced screen is displayed, select IPMI 2.0 Configuration.**

   e. **When the IPMI 2.0 Configuration screen is displayed, select the LAN Configuration menu item.**

   f. **Select the IP Address menu item.**

      The service processor's IP address is displayed using the following format:
      `Current IP address in BMC: xxx.xxx.xxx.xxx`

3. **Using a client system, establish a Secure Shell (SSH) connection to the service processor's IP address and log in as an Administrator.**

   `ssh -l root` *sp_ip_address*

   `password:` **`changeme`**

   You may connect to the ILOM service processor CLI, using the serial management port on the rear of the server, or by using SSH over the network.

4. **To access the server serial port, you must connect to the ILOM service processor CLI. Type:**

   `start /SP/console`

   A message appears prompting you to confirm that you want to start the SP console.

5. **Continue the operation for starting the SP console by typing `y` (yes) and pressing Enter.**

   The GRUB boot loader menu appears.

6. **Power on main power to the server by using a non-metallic stylus to press the recessed Power button on the front panel.**

   POST messages appear on your screen as the OS boots.

7. **To make Solaris output appear on the server VGA (video port), you must select the video port from the GRUB boot loader menu, as shown on** "Selecting Your Console Output" on page 29**.**

8. **If you have changed the SP serial port default settings, make sure you reset them to the default settings.**

9. **Follow the Solaris 10 on-screen prompts.**

   Use the information gathered in "Installation Worksheet" on page 26 to help you enter the system and network information as you are prompted.

The screens that are displayed will vary, depending on the method that you chose for assigning network information to the server (DHCP or static IP address).

After you have entered the system-configuration information, the server completes the boot process and displays the Solaris login prompt. Refer to the *Sun Fire X2250 Operating Systems Installation Guide* (820-4592) for information about configuring the Solaris OS.

▼ To Connect to the Server Using a Terminal Program

1. **Use a cable to connect the serial port of the server to the serial port of the host system.**

2. **Verify that the communication properties of the serial port of the system are set to the defaults.**

   The default settings are 9600 baud, 8N1 (eight data bits, no parity, one stop bit), disable flow control.

3. **Start a terminal session to capture the serial port output by doing one of the following:**

   - On a client running Solaris OS, type:

     $**`tip -9600 /dev/ttya`**

   - On a client running Windows, start a program such as Hyperterminal.

- On a client running Linux, start a program such as Minicom, a text-based serial communication program that is included in the Linux distributions. For more information, see the man pages included in the Linux distribution.

4. **Log in to the service processor as an Administrator, for example:**

   ```
   login: root
   password: changeme
   ```

5. **Start the ILOM SP CLI by entering the following:**

   ```
   start /SP/console
   ```

6. **Power on main power to the server by using a non-metallic stylus to press the recessed Power button on the front panel.**

   POST messages appear on your screen as the OS boots.

7. **Follow the Solaris 10 preinstallation on-screen prompts.**

   Use the information gathered in "Installation Worksheet" on page 26 to help you enter the system and network information as you are prompted.

The screens that are displayed will vary, depending on the method that you chose for assigning network information to the server (DHCP or static IP address).

After you have entered the system-configuration information, the server completes the boot process and displays the Solaris login prompt. Refer to the *Sun Fire X2250 Operating Systems Installation Guide* (820-4592) for information about configuring the Solaris OS.

Solaris 10 Operating System User Information

This section provides pointers to information about the Solaris 10 operating system.

Accessing Solaris 10 OS User Documentation

You can access the various collections of the Solaris 10 OS user documentation at:

http://docs.sun.com/app/docs/prod/solaris.10

Specifically, you can access the Solaris 10 OS Release and Installation collection at:

http://docs.sun.com/app/docs/coll/1236.1

Downloading Solaris 10 OS Software

If you need to install the Solaris 10 OS or reinstall the OS after removing it, you can download the CD or DVD image from the following URL:

http://www.sun.com/software/solaris/get.jsp

See the *Sun Fire X2250 Server Operating System Installation Guide* (820-4592) for specific instructions on Solaris 10 OS installation.

Solaris 10 OS Training

Sun provides flexible training options that accommodate your personal schedule and learning style. The training options include instructor-led, web-based online, CD-ROM, and Live Virtual Class. For Solaris 10 Training and Certification options at a glance, please visit:

http://www.sun.com/training/catalog/solaris10.html