# Sun Blade™ X6220 Server Module Installation Guide

Sun Microsystems, Inc.
www.sun.com

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# Contents

# Preface

This *Sun Blade™ X6220 Server Module Installation Guide* contains procedures for installing the server module in a chassis, 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.<br>Use ls -a to list all files.<br>% You have mail. |
| **AaBbCc123** | What you type, when contrasted with on-screen computer output | % **su**<br>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*.<br>These are called *class* options.<br>You *must* be superuser to do this.<br>To delete a file, type rm *filename*. |

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

# Related Documentation

For a description of the document set for the Sun Blade X6220 Server Module, see the *Where To Find Documentation* sheet that is packed with your system and also posted at the product's documentation site. Go to the following URL, then navigate to your product.

http://www.sun.com/documentation

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

For all Sun hardware documentation, go to the following URL:

http://www.sun.com/documentation

For Solaris and other software documentation, go to the following URL:

http://docs.sun.com

# Documentation, Support, and Training

| Sun Function | URL |
|---|---|
| Documentation | http://www.sun.com/documentation/ |
| Support | http://www.sun.com/support/ |
| Training | http://www.sun.com/training/ |

# Product Updates

For product updates that you can download for the Sun Blade X6220 Server Module, please visit the following web site:

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

Find the Hardware Drivers section and click X64 Servers & Workstations. The Sun Blade X6220 Server Module site contains updates for firmware and drivers, as well as CD-ROM `.iso` images.

# Third-Party Web Sites

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*Sun Blade X6220 Server Module Installation Guide*, part number 820-0044-10

CHAPTER 1

# Setting Up the Server Hardware

This chapter contains the following topics:



## Installation Overview and Terms

Note the following terms used in this book:

- The term *server module* refers to the blade or blade server hardware.
- The term *chassis* refers to the modular system hardware.

After unpacking your server module, perform the following tasks:

1. Insert the server module into the chassis.

   See "Inserting the Server Module" on page 2.

2. Connect all cables, peripherals, and power cords to the chassis.

   See the installation guide for your chassis.

3. Power on the server module.

   See "Powering On and Powering Off the Server Module" on page 4.

4. Connect to the server module through the service processor on the chassis or through the service processor on the server module itself.

   This book assumes that the service processor software on the chassis, called the CMM ILOM, is already configured. See Chapter 2, "Setting Up the Server Software" on page 9 of this guide.

5. Configure the preinstalled Solaris™ operating system or install a supported operating system of your choice.

   Refer to "Configuring the Preinstalled Solaris 10 Operating System" on page 34, See also the *Sun Blade X6220 Server Module Operating System Installation Guide* (820-0045) or the *Sun Blade X6220 Server Module Windows Operating System Installation Guide* (820-0188).

6. Customize your server, as needed.

   For more information, see the *Integrated Lights Out Manager (ILOM) Administration Guide for ILOM 1.1.1* (820-0280) and the *Integrated Lights Out Manager (ILOM) Supplement for Sun Blade X6220 Server Module* (820-0047) for details.

# Inserting the Server Module

**Caution –** Before handling components, attach an electrostatic discharge (ESD) wrist strap to bare metal on the chassis. Both the front and back of the chassis have grounded locations. The system's printed circuit boards and hard disk drives contain components that are extremely sensitive to static electricity.

## ▼ To Insert the Server Module

1. **Locate the desired slot in the chassis.**
2. **(Optional) Remove the filler panel if applicable.**

   Pull the lever out and eject the filler panel.

   **Note –** Other filler panels should remain in any *unused* slots as they ensure the chassis complies with FCC limits on electromagnetic interference (EMI).

3. **Position the server module vertically so that the ejectors are on the right.**

   The following illustrations show the server module being inserted into the Sun Blade 6000 Modular System; your chassis might differ. See box 1 in FIGURE 1-1.

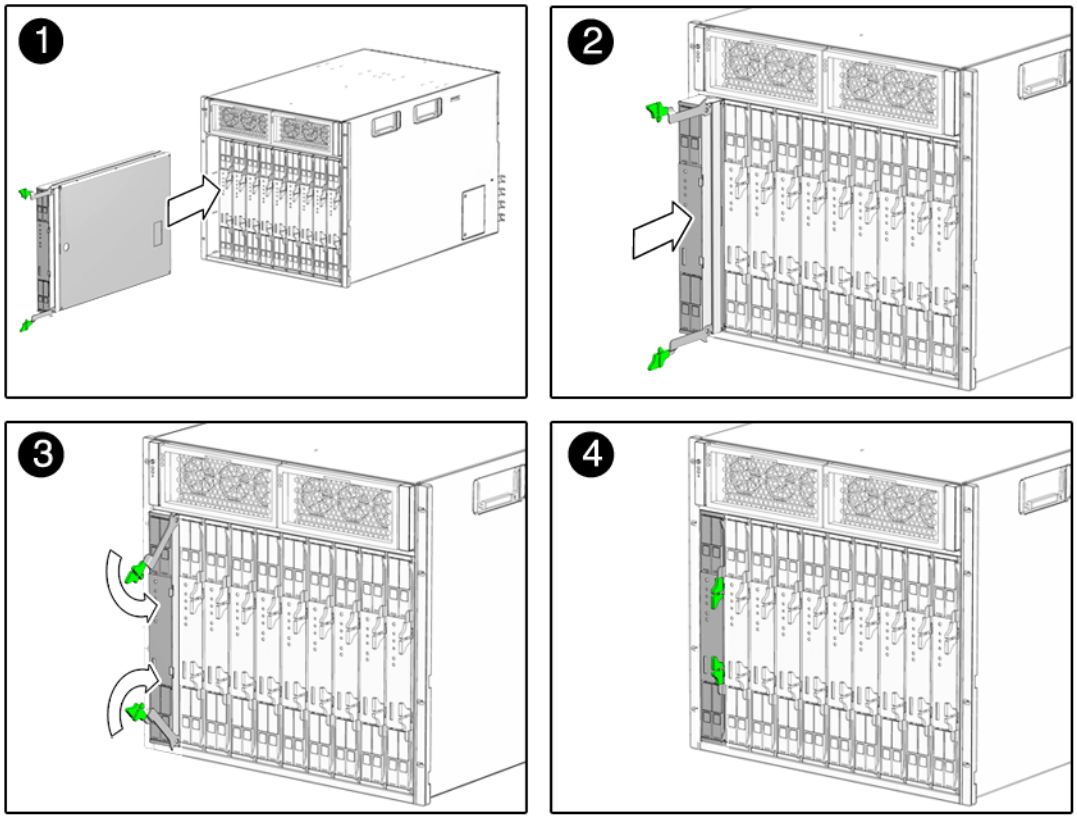


**FIGURE 1-1** Inserting the Server Module into the Chassis

4. **Push the server module into the slot until the server module stops.**

   See Box 2 in FIGURE 1-1.

5. **Rotate the ejectors down until they snap into place.**

   The server module is now flush with the chassis and the ejectors are locked. See Boxes 3 and 4 in FIGURE 1-1.

# Powering On and Powering Off the Server Module

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

## ▼ To Apply Standby Power for Initial Service Processor Configuration

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

1. **Connect grounded AC power cords to the AC power connectors on the back panel of the chassis and to grounded AC power outlets. For details, see your chassis documentation.**

   In standby power mode, the Power/OK LED on the front panel of the server flashes, indicating that the SP is working. See FIGURE 1-2 for the LED location.

   ---

   **Note –** At this point, standby power is supplied only to the Graphics Redirect and Service Processor (GRASP) board and power supply fans.

   ---

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

## ▼ To Power on Main Power for All Server Components

1. **Verify that standby power is on.**

   In standby power mode, the Power/OK LED on the front panel flashes. See FIGURE 1-2.

2. **Use a pointed object or 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 above the Power button lights and remains lit.

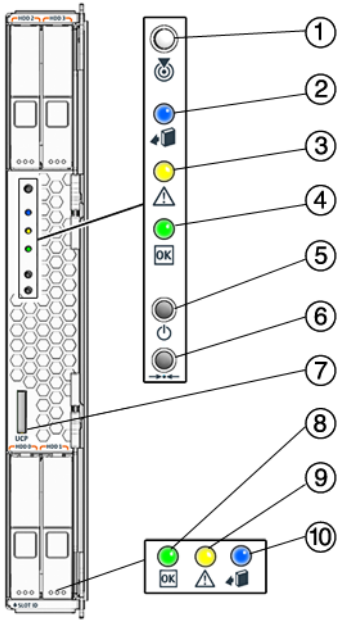


**FIGURE 1-2** Sun Blade X6220 Server Module Front Panel

### Legend

| | |
|---|---|
| 1 | White LED - Locate |
| 2 | Blue LED - Ready to Remove |
| 3 | Amber LED - Service Action Required |
| 4 | Green LED - Power |
| 5 | Power on button/standby |
| 6 | Non-Maskable Interrupt (NMI) button (Service only) |
| 7 | UCP (universal connector port), used for dongle cable |
| 8 | Green LED - Disk OK |
| 9 | Amber LED - Disk service action required |
| 10 | Blue LED - Disk ready to remove |

## ▼ To Shut Down Main Power Mode

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

- **Graceful shutdown.** Use a ballpoint pen or other 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 main power is off, the Power/OK LED on the front panel will begin flashing, indicating that the server is in standby power mode.

---

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

---

# Using a Dongle Cable for Testing

Your chassis ships with a dongle cable as well as a DB9 to RJ-45 serial adapter. The dongle enables you to plug devices directly into the front of the server for testing. The DB9 to RJ-45 serial adapter gives you an RJ-45 adapter to attach to the DB9 for added flexibility.

## ▼ To Use a Dongle Cable for Testing

1. **Insert the dongle cable into the universal connector port (UCP) on the server module front panel. See** FIGURE 1-3**.**
2. **Connect the dongle cable connections as appropriate.**

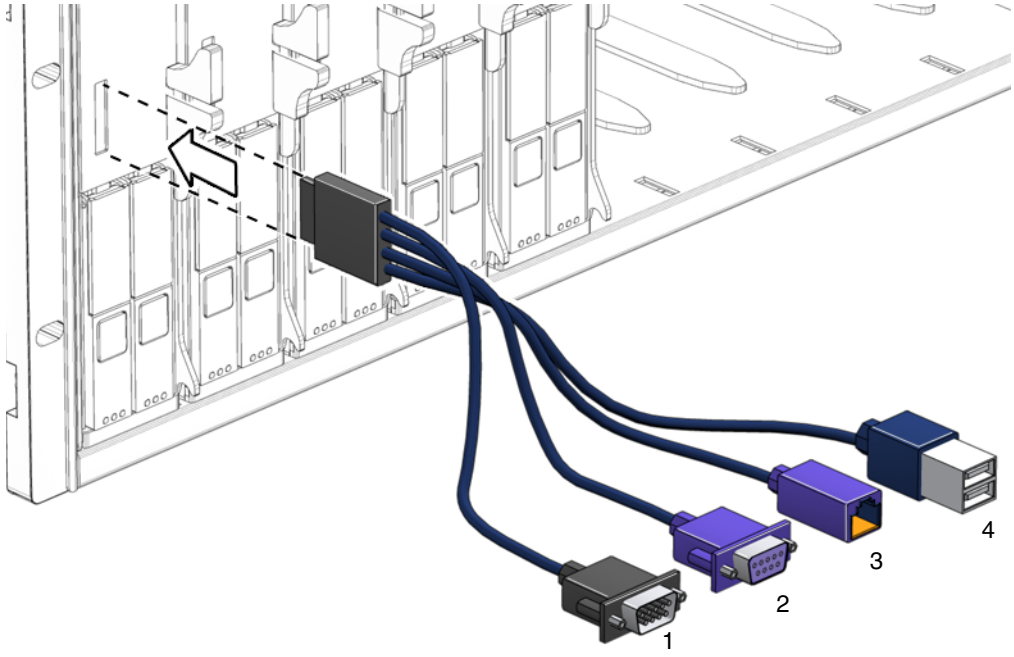


**FIGURE 1-3** Dongle Cable Connections

## Legend

| | Connector | Status |
|---|---|---|
| 1 | DB9 serial console to server module ILOM | Used |
| 2 | VGA video connector | Used |
| 3 | 10/100 Mbit Ethernet | **Not supported. Use the Ethernet port on the chassis.** |
| 4 | Dual USB connectors | Used |

CHAPTER 2

# Setting Up the Server Software

This chapter describes how to configure and access the Sun™ Integrated Lights Out Manager software, and how to set up the platform operating system and driver software.

This chapter contains these topics:



## Integrated Lights Out Manager

The Integrated Lights Out Manager (ILOM) is a built-in system management software that enables you to monitor and manage the components installed in your chassis and server modules. In ILOM, you can configure network information, view and edit hardware configurations, monitor vital system information and manage user accounts.

You can access ILOM through several interfaces, such as web browsers, command-line interface (CLI), SNMP interface, as well as IPMI interface.

**Note –** This chapter describes how to access the ILOM through the command line interface and web browsers. For other methods, see the *Integrated Lights Out Manager Administration Guide*.

# What is a Service Processor?

A service processor is a board that operates independently of the other hardware in the system. It has its own IP address and MAC address and is capable of operating regardless of the state of the other system hardware. In a server module, the service processor can operate whether the server module is fully operational, powered down, or somewhere in between.

The chassis and every server module in the chassis has its own service processor.

Note the following terms used in this book:

- The term Chassis Management Module (CMM) refers to the hardware module on the chassis.
- The CMM ILOM refers to the ILOM software on the CMM.
- The server module SP (service processor) refers to the server module's SP hardware.
- The server module ILOM refers to the ILOM software on the server module SP.

Note that other server modules might have different service processors.

# About the Preconfigured Administrator Account

The server module is shipped with a preconfigured administrator account:

**User name: `root`**

**Password: `changeme`**

The preconfigured Administrator account, known as `root`, cannot be deleted or changed, other than changing its password. This account offers built-in administrative privileges (read and write access) to all service processor features and commands.

**Note –** The CMM ILOM is shipped with an identical preconfigured administrator account, with user name `root` and the default password set to `changeme`.

# Connection Overview

FIGURE 2-1 shows the connections to the server module ILOM.

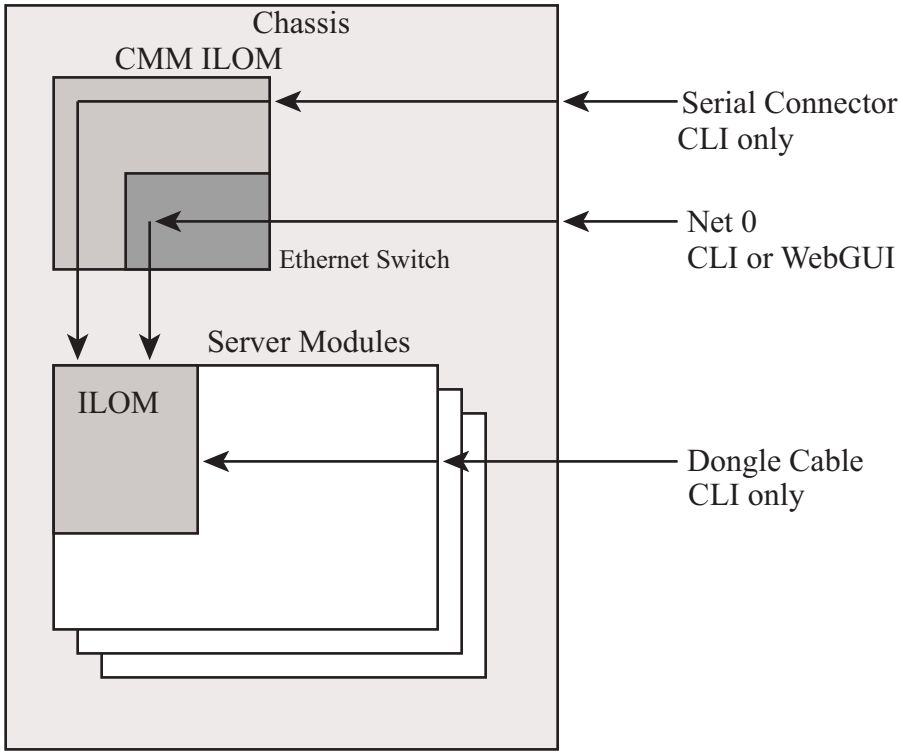


**FIGURE 2-1** ILOM Connection Options

# Connecting to the Server Module ILOM

Before you continue installing the server module, you must ensure that you can connect to the ILOM.

You can connect to the server module ILOM using one of several methods listed below and described in the corresponding sections.

**Note –** Option 1 and option 2 allow you to connect to the ILOM without knowing the ILOM's IP address. They provide access to the ILOM's Command Line Interface (CLI) only. Option 3 requires you to know the ILOM's IP address, but supports CLI and WebGUI access. Most users configure the ILOM' s IP address, then connect to it using Option 3.

Instructions for configuring the ILOM's IP address are in "Configuring the ILOM IP Address" on page 21.

- Option 1: Use the serial connector on the chassis to connect to the CMM ILOM. Then use the CMM ILOM to navigate to the server module ILOM. See "Option 1: Connecting to ILOM Through the Chassis Serial Connector" on page 12.
- Option 2: Use a dongle cable to establish a serial connection directly to the server module ILOM. See "Option 2: Connecting to ILOM Through a Dongle Cable" on page 16.
- Option 3: Connect through the Ethernet. This supports both CLI and WebGUI access. See "Option 3: Connecting to ILOM Through the Ethernet Port" on page 18.

The following sections describe each of these methods.

## Option 1: Connecting to ILOM Through the Chassis Serial Connector

The chassis serial connector connects to the CMM ILOM, which provides a command to connect to the server module ILOM.

### *To Connect Through the Chassis Serial Connector*

You can access the CMM ILOM at any time by connecting a terminal or a PC running terminal emulation software to the RJ-45 serial port on the chassis. The CMM ILOM's Command Line Interface (CLI) allows you to connect to the server module ILOM.

Before completing this connection, the server module must be installed in the chassis.

1. **Verify that your terminal, laptop, or terminal server is operational.**
2. **Configure that terminal device or the terminal emulation software to use the following settings:**
   - 8N1: eight data bits, no parity, one stop bit
   - 9600 baud (default, can be set to any standard rate up to 57600)

- Disable hardware flow control (CTS/RTS)

3. **Connect a serial cable from the serial port on the chassis to a terminal device.**

   Refer to the chassis documentation for the location of the serial port.

---

**Note –** The serial port requires the following pin assignments. Note that these are the same as the serial cable connector for the Sun Advanced Lights Out Manager (ALOM) or Remote System Control (RSC). See TABLE 2-1.

---

**TABLE 2-1** Serial Management Port Pinouts

| Pin | Signal Description |
|---|---|
| 1 | Request To Send (RTS) |
| 2 | Data Terminal Ready (DTR) |
| 3 | Transmit Data (TXD) |
| 4 | Ground |
| 5 | Ground |
| 6 | Receive Data (RXD) |
| 7 | Data Carrier Detect (DCD) |
| 8 | Clear To Send (CTS) |

4. **Press Enter on the terminal device.**

   This establishes the connection between the terminal device and the CMM ILOM.

---

**Note –** If you connect a terminal or emulator to the serial port before it has been powered up or during its power up sequence, you will see bootup messages.

---

When the system has booted, the CMM ILOM displays its login prompt:

`SUNCMM`*`nnnnnnnnnn`* `login:`

The first string in the prompt is the default host name. It consists of the prefix SUNCMM and the CMM ILOM's MAC address. The MAC address for each service processor is unique.

5. **Log in to the CLI:**

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

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

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

   ```
   ->
   ```

   You are now connected to the CMM ILOM CLI.

6. **Navigate to the server module ILOM by typing this command:**

   ```
   -> cd /CH/BLn/SP/cli
   ```

   Where *n* is 0 through 9 for server modules 0 through 9 respectively.

7. **Enter the command `start`.**

   A prompt appears.

8. **Enter `y` to continue or `n` to cancel.**

   If you entered y, the server module ILOM prompts for its password.

---

**Note –** The CMM ILOM logs on to the server module ILOM using the username in the `user` target under `/CH/BLn/SP/cli` (where *n* is the server module number).

---

9. **Enter the password when prompted.**

   The default is **`changeme`**.

   The server module ILOM prompt appears.

10. **When you are done, type `exit`.**

    The server module ILOM exits and the CMM CLI prompt appears.

The following display shows an example of the login screen:

```
 -> cd /CH/BL2/SP/cli
/CH/BL2/SP/cli

-> start
Are you sure you want to start /CH/BL2/SP/cli (y/n)? y
Password:          Type the password to the server module ILOM.

Sun(TM) Integrated Lights Out Manager

Version 1.1.1

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Use is subject to license terms.

Warning: password is set to factory default.

-> exit            Type this command to exit the server module ILOM and return to the
CMM ILOM.
Connection to 10.6.153.33 closed.
```

## Option 2: Connecting to ILOM Through a Dongle Cable

A dongle cable allows you to connect a terminal directly to the ILOM. FIGURE 2-2 shows a dongle cable connected to a server module. TABLE 2-2 shows the dongle cable pinouts.

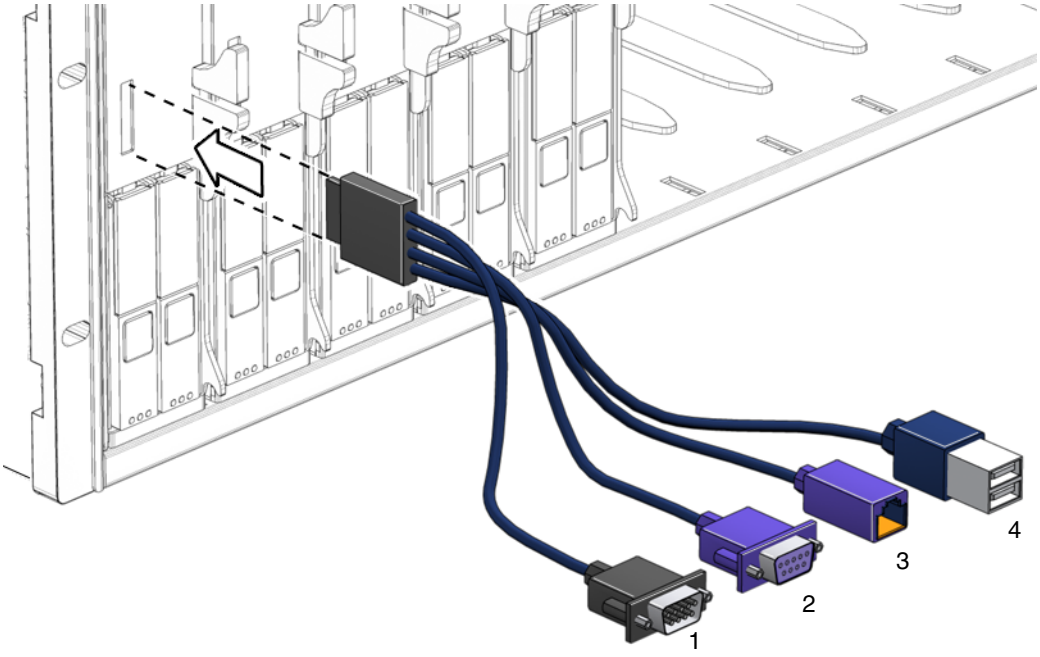


**FIGURE 2-2** Dongle Cable

**Legend**

| | Connector | Status |
|---|---|---|
| 1 | DB9 serial console to server module ILOM | Used |
| 2 | VGA video connector | Used |
| 3 | 10/100 Mbit Ethernet | **Not supported. Use the Ethernet port on the chassis.** |
| 4 | Dual USB connectors | Used |

The following table shows the DB9 dongle pinout.

**TABLE 2-2** DB9 Port Pinouts

| Pin | Signal Description | Status |
|---|---|---|
| 6 | COM DSR | Not supported |
| 2 | COM SIN | |
| 7 | COM RTS | |
| 3 | COM SOUT | |
| 8 | COM CTS | |
| 4 | COM DTR | |
| 1 | COM DCD | |
| 9 | COM RI | Not supported |

### *To Connect to the ILOM Using a Dongle Cable*

1. **Connect a dongle cable to the server module.**
2. **Connect a terminal or terminal emulator to the DB9 connector (labeled as 2 in the figure) on the dongle cable.**

---

**Tip –** The chassis ships with both a dongle cable and a DB9 to RJ-45 serial adapter for your convenience.

---

The ILOM login prompt appears.

3. **Enter the user name and password when prompted.**

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

   The server module ILOM prompt appears.

4. **When you are done, exit the ILOM by typing:**

   **`-> exit`**

## Option 3: Connecting to ILOM Through the Ethernet Port

The chassis ethernet ports provide the most robust method of connecting to the ILOM. This connection supports both the CLI and the WebGUI.

You can connect to the ILOM through either the RJ-45 NET MGT 0 Ethernet port or the corresponding Network Express Module (NEM) port.

Before you can use the Ethernet connection, you must know the ILOM's IP address.

---

**Note –** To configure the ILOM IP address, see "Configuring the ILOM IP Address" on page 21.

---

### *Logging In and Out of the CLI*

The ILOM supports SSH access to the CLI over the Ethernet.

1. **Start an SSH client.**
2. **To log in to the ILOM, type:**

   $ **ssh root@***ipaddress*
3. **Type your password when prompted.**

---

**Note –** The default user name is **root**, and the default password is **changeme**.

---

For example:

```
$ ssh root@192.168.25.25
root@192.168.25.25's password:
Sun Integrated Lights Out Manager
Version 1.0
Copyright 2006 Sun Microsystems, Inc. All rights reserved.
Warning: password is set to factory default.
->
```

4. **To log out, type exit.**

### *Logging In and Out of the WebGUI*

1. **To log in to the WebGUI, type the IP address of the ILOM into your web browser.**

   The login screen appears.

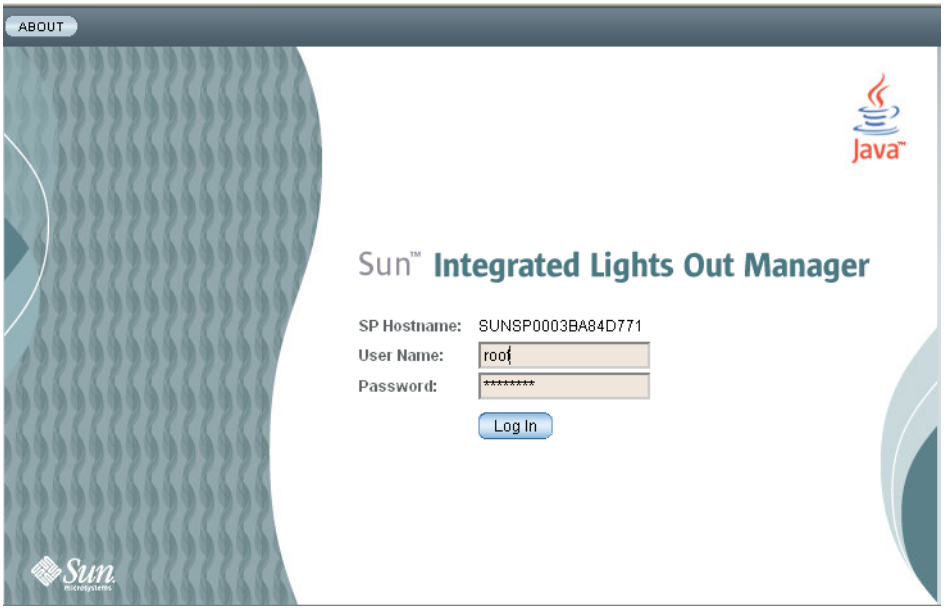


**FIGURE 2-3** WebGUI Login Screen

2. **Type your user name and password.**

   When you first try to access the WebGUI, it prompts you to type the default user name and password. The default user name and password are:

   - Default user name – `root`
   - Default password – `changeme`

   The default user name and password are in lowercase characters.

3. **Click Log In.**

   The WebGUI appears.

4. **To log out of the WebGUI, click the Log Out button at the top right of the WebGUI.**

   The log out screen appears.

**Caution –** Do not use the Log Out button in your web browser to log out from the WebGUI.

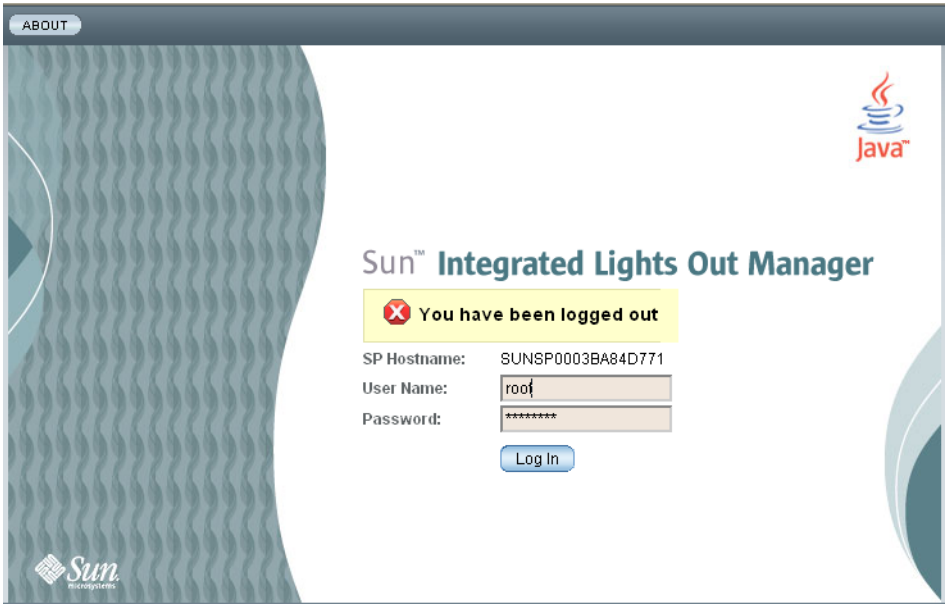


**FIGURE 2-4** WebGUI Log Out Screen

# Configuring the ILOM IP Address

This section describes how to view and set the ILOM IP Address. It includes the following sections:



## Viewing the ILOM's IP Address

1. **Log on to the ILOM CLI using any of the methods described in** "Connecting to the Server Module ILOM" on page 11.

   To use the Ethernet SSH connection, you must already know the IP address.

2. **Type these commands from the *root* directory.**

   a. **To see all the IP address-related information, type:**

   ```
   -> show /SP/network
   ```

   b. **To see only the IP address, type:**

   ```
   -> show /SP/network/ipaddress
   ```

## Configuring the ILOM IP Address Using BIOS Setup Utility

The BIOS Setup Utility allows you to set the ILOM IP address. It allows you to configure it manually or use DHCP to configure it.

1. **Verify the following:**
   - Your DHCP server is configured to accept new media access control (MAC) addresses.
   - Your DHCP server is connected to either the corresponding NEM port or the RJ-45 NET MGT Ethernet port.

2. **Start the BIOS Setup Utility.**

   a. **Boot the system.**

   b. **Watch the boot messages. You will see a line that says you can press F2 to enter BIOS setup.**

   c. **After you see the message, press F2.**

   After some messages and screen changes, the BIOS Setup Utility appears.

3. **Select the Advanced tab.**

   The Advanced page appears.

4. **Highlight IPMI 2.0 Configuration in the list, then select Enter.**

   The IPMI 2.0 Configuration page appears.

5. **Highlight LAN Configuration then select Enter.**

   The LAN Configuration page appears.

6. **On the LAN Configuration page, under IP Assignment, select DHCP or Static.**

   If you selected Static, fill in the IP address, subnet mask and default gateway at the bottom of the page.

7. **Select Commit to save your changes.**

   The BIOS utility automatically updates the address fields.

   - If you selected Static, you are done.
   - If you selected DHCP, the DHCP server assigns an IP address to the server module ILOM. Continue to Step 8.

---

**Caution –** You must select Commit to save the changes on this page. Using F10 will not save your changes.

---

8. **To find the IP address that DHCP assigned to the server module ILOM, either:**

   - Log on to the ILOM using option 1 or option 2 and enter the command **`show /SP/network.`**
   - Look in the 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.

---

   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 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 WebGUI and the remote console.

## Configuring the ILOM IP Address Using DHCP

This procedure uses DHCP to assign the ILOM an IP address.

1. **Verify that your DHCP server is configured to accept new media access control (MAC) addresses.**

2. **Obtain the server module ILOM MAC address from one of the following locations:**

   MAC addresses are 12-digit hexadecimal strings in the format *xx:xx:xx:xx:xx:xx* where x represents a single hexadecimal letter (0–9, A–F, a–f). Write down the address for future reference.

   - The server module ILOM has a serial port to which you can attach a terminal device. If you log into the ILOM and type the command **`show /SP/network`**, the ILOM displays the current MAC address. See "Option 2: Connecting to ILOM Through a Dongle Cable" on page 16.
   - The CMM ILOM has a serial port to which you can attach a terminal device. If you log into the CMM ILOM and type the command **`show /CH/BL`***n*`/SP/network`**, the CMM ILOM displays the current MAC address. See "Option 3: Connecting to ILOM Through the Ethernet Port" on page 18.
   - The label attached to the GRASP board has the MAC address. You need to pull the server module out of its slot to view this label.
   - The Customer Information Sheet shipped with your server module lists the MAC address.
   - You can get the MAC address from the system BIOS Setup screen. Choose Advanced - IPMI 2.0 Configuration - Set LAN Configuration - MAC address.

3. **Connect an Ethernet cable to the NEM port corresponding to the server module.**

   Refer to your chassis documentation for the location of the NEM port.

---

**Note –** DHCP requires a connection to the server module through the NEM before it can assign an IP address to the server module ILOM.

DHCP cannot automatically assign an address to the server module ILOM if it is only connected to the RJ-45 NET MGT Ethernet port.

---

4. **Reset the server module ILOM.**

   a. **Log into the server module ILOM as described in** "Option 1: Connecting to ILOM Through the Chassis Serial Connector" on page 12 **or** "Option 3: Connecting to ILOM Through the Ethernet Port" on page 18**.**

**b. Enter the reset command:**

```
-> reset /SP
```

DHCP automatically assigns the ILOM an IP address when it restarts.

**5. Find the IP address that DHCP assigned to the server module ILOM.**

See Step 8 in "Configuring the ILOM IP Address Using BIOS Setup Utility" on page 21.

## Configuring the ILOM IP Address Using the CLI

This procedure allows you to manually configure the ILOM IP address using the CLI.

**1. Connect to the server module ILOM using one of the following methods:**

- Connect to the server module ILOM using the chassis serial connector as described in "Option 1: Connecting to ILOM Through the Chassis Serial Connector" on page 12.
- Connect to the server module ILOM using a dongle cable as described in "Option 2: Connecting to ILOM Through a Dongle Cable" on page 16.
- Connect to the server module ILOM using SSH as described in "Option 3: Connecting to ILOM Through the Ethernet Port" on page 18.

**2. To see the IP address, type `show /SP/network/ipaddress` (optional).**

```
-> show /SP/network/ipaddress

 /SP/network
    Targets:

    Properties:
        ipaddress = 10.6.153.148

    Commands:
        show

->
```

**3. Navigate to /SP/network by typing the following command:**

```
cd /SP/network
```

**4. Type the following commands:**

- To configure a static Ethernet configuration:

  **set pendingipdiscovery=static**

  **set pendingipaddress=***xxx.xxx.xx.xx*

  **set pendingipnetmask=***yyy.yyy.yyy.y*

  **set pendingipgateway=**zzz.zzz.zz.zzz

  **set commitpending=true**

  where *xxx.xxx.xx.xx*, *yyy.yyy.yyy.y* and zzz.zzz.zz.zzz are the IP address, netmask, and gateway for your ILOM and network configuration. To determine these addresses, see your system administrator.

- To configure a dynamic Ethernet configuration:

  **set pendingipdiscovery=dhcp**

  **set commitpending=true**

5. **When you are done, exit the ILOM by typing `exit`.**

   If you connected to the server module ILOM through the CMM ILOM, you will be returned to the CMM ILOM.

   If you connected to the ILOM using SSH, you will be disconnected automatically, because you logged in under a different IP address.

   The following display shows a typical session where the user looks at static settings, configures them to be dynamic, then looks at the new settings.

```
-> cd /SP/network

-> show

/SP/network
   Targets:

   Properties:
       commitpending = (Cannot show property)
       ipaddress = 10.6.42.42
       ipdiscovery = static
       ipgateway = 10.6.42.1
       ipnetmask = 255.255.255.0
       macaddress = 00:14:4F:3A:26:74
       pendingipaddress = 10.6.42.42
       pendingipdiscovery = static
       pendingipgateway = 10.6.42.1
       pendingipnetmask = 255.255.255.0

   Commands:
       cd
       set
       show


-> set pendingipdiscovery=dhcp
Set 'pendingipdiscovery' to 'dhcp'

-> set commitpending=true
Set 'commitpending' to 'true'          if you logged in using SSH, you will be
                                       disconnected here.

-> show

/SP/network
   Targets:

   Properties:
       commitpending = (Cannot show property)
       ipaddress = 10.6.42.191
       ipdiscovery = dhcp
       ipgateway = 10.6.42.1
       ipnetmask = 255.255.255.0
       macaddress = 00:14:4F:3A:26:74
       pendingipaddress = 10.6.42.191
       pendingipdiscovery = dhcp
       pendingipgateway = 10.6.42.1
       pendingipnetmask = 255.255.255.0

   Commands:
       cd
       set
       show
```

# Setting Up Platform Operating System and Driver Software

After configuring the server module ILOM network settings, you can configure the preinstalled Solaris 10 operating system or install a supported Linux or Windows platform operating system and drivers.

- If you want to use the preinstalled Solaris 10 operating system, refer to "Configuring the Preinstalled Solaris 10 Operating System" on page 29.
- For details about installing a supported Linux or Solaris OS and the required drivers, refer to *Sun Blade X6220 Server Module Operating System Installation Guide*.
- For details about installing a supported Windows OS and the required drivers, refer to *Sun Blade X6220 Server Module Windows Operating System Installation Guide*.
- For additional OS considerations specific to this server, also refer to the *Sun Blade X6220 Server Module Product Notes*.

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 factory-installed version is Solaris 10 11/06 or later.

**Note –** 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. You will see the BIOS Power-On Self Test (POST) and other boot information output.

The server ships with its console redirected to the *serial* port.

You can choose an option to send the output to VGA (video port). For more information, see "To Redirect the Console Output to the Video Port (Optional)" on page 36.

## Before You Begin

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

- Perform initial configuration of the server's ILOM and determine the server's network settings, as described in "Connecting to the Server Module ILOM" on page 11.
- Gather the information that you will need for the configuration, as listed in "Installation Worksheet" on page 30. Note that default values are indicated by an asterisk (*).

**Tip –** To find the server module, PCI Express Module, and SP MAC addresses, see the customer information sheet included with the system box or the server, PCI EM, and SP MAC addresses printed on their respective labels.

# Installation Worksheet

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

**TABLE 3-1** Worksheet for Installation

| Information for Installation | | Description or Example | Your Answers: Defaults (*) |
|---|---|---|---|
| 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. | |
| 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<br>• Non-networked* |
| DHCP | | Can the system use Dynamic Host Configuration Protocol (DHCP) to configure its network interfaces? | • Yes<br>• 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.<br>Example: `129.200.9.1` | |
| | Subnet | If you are not using DHCP, is the system part of a subnet?<br>If yes, what is the netmask of the subnet?<br>Example: `255.255.0.0` | 255.255.0.0* |
| | IPv6 | Do you want to enable IPv6 on this machine? | • Yes<br>• No* |
| Host name | | A host name that you choose for the system. | |
| Kerberos | | Do you want to configure Kerberos security on this machine?<br>If yes, gather this information:<br>Default Realm:<br>Administration Server:<br>First KDC:<br>(Optional) Additional KDCs: | • Yes<br>• No* |

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

| Information for Installation | | Description or Example | Your Answers: Defaults (*) |
|---|---|---|---|
| Name service | Name service | If applicable, which name service should this system use? | • NIS+<br>• NIS<br>• DNS<br>• LDAP<br>• 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<br>• 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.<br><br>You can also enter a list of domains to search when a DNS query is made.<br>Search Domain:<br>Search Domain:<br>Search Domain: | |
| | LDAP | Provide the following information about your LDAP profile:<br>Profile name:<br>Profile server:<br>If you specify a proxy credential level in your LDAP profile, gather the following information:<br>Proxy-Bind Distinguished Name:<br>Proxy-Bind Password: | |

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

| Information for Installation | Description or Example | Your Answers: Defaults (*) |
|---|---|---|
| Default route | Do you want to specify a default route IP address, or let the Solaris installation program find one?<br>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.<br>You have the following choices:<br>• 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.<br>• 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 Internet Control Message Protocol (ICMP) router discovery protocol. If you are using the command-line interface, the software detects an IP address when the system is booted.<br>• 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<br>• Detect One<br>• None* |
| Time zone | How do you want to specify your default time zone? | • Geographic region*<br>• Offset from GM<br>• Time zone file |
| Root password | Choose a root password for the system. | |

# 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 "Connecting to the Server Module ILOM" on page 11.

Use the information that you gathered in "Installation Worksheet" on page 30 as you perform the configuration.

After configuring the server module ILOM, you can configure the preinstalled Solaris 10 operating system (OS) by using the service processor to connect to the system console.

## ▼ To Connect to the System Console Through the Service Processor

You can connect to the service processor using a serial terminal, or the Ethernet, as described in "Connecting to the Server Module ILOM" on page 11.

If you connect to the service processor using a serial terminal, you can use one of the following options:

- To capture the serial port output, 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.

1. **Connect and login to the service processor using one of the methods described in** "Connecting to the Server Module ILOM" on page 11**.**

   The server module ILOM prompt appears.

   ->

2. **Make sure the communication properties of the service processor are set to the defaults. For example:**

```
-> show /SP/serial/host
/SP/serial/host
    Targets:

    Properties:
        commitpending = (Cannot show property)
        pendingspeed = 9600
        speed = 9600

    Commands:
       cd
       show
```

3. **If the speed is anything other than 9600, change it by using the command:**

   -> **set /SP/serial/host pendingspeed=9600 commitpending=true**

4. **Start the serial console mode by entering the following:**

   ```
   -> start /SP/console
   ```

   Only accounts with Administrator privileges are enabled to configure the SP serial port.

5. **When the prompt appears, type y:**

   ```
   Are you sure you want to start /SP/console (y/n)? y
   ```

6. **Power on main power to the server by using a pointed object or stylus to press the recessed Power button on the front panel.**

   POST messages appear on your screen as the OS boots up.

7. **Follow the Solaris 10 preinstallation onscreen prompts.**

8. **Use the information gathered in "Installation Worksheet" on page 30 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.

## ▼ To Redirect the Console Output to the Video Port (Optional)

The server module's console is automatically directed to the serial port. GRUB, the open source boot loader, is the default boot loader in the Solaris OS for X86- or X64-based systems. The boot loader is the first software program that runs after you power on a system.

Use a cable to connect the serial port of the host server (either through the chassis SER MGT port or through a dongle's serial port) to the video port of the client system.

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

```
**************************************************************************
* Solaris 10 11/06 s10x_u2wos_09a X86                                    *
* Solaris failsafe                                                       *
* Solaris 10 11/06 s10x_u2wos_09a X86 (VGA)                              *
*                                                                        *
*                                                                        *
```

```
*                                                                    *
*                                                                    *
*                                                                    *
```

To display output to the video port, for example, choose the `Solaris 10 11/06 s10x_u2wos_09a X86 (VGA) option.`

## Solaris 10 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

## 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, go to:

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

# Using the Solaris Installation Program

The documentation listed in this section provides instructions for using the Solaris Installation program and is available at the following web site:

http://docs.sun.com/

Make sure you follow the instructions for *x86-based* systems, not *SPARC-based* systems. For more information, see the Solaris 10 Release and Installation Collection for the version of the Solaris 10 operating system you have installed. This documentation is available at:

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

# During Installation

After you configure the preinstalled Solaris OS, the Solaris Installation program reboots the system and prompts you to log in. The system displays the message of the day, indicating the preloaded software that comes with your system:

- Sun Java™ Enterprise System (Java ES)
- Sun™ Studio 11

## Sun Java Enterprise System

Sun Java Enterprise System (Java ES) is a set of software components that provide services needed to support enterprise-strength applications distributed across a network or Internet environment.

## Sun Studio 11

Sun Studio 11 includes high-performance, optimizing C, C++, and Fortran compilers for the Solaris OS on SPARC and x86/x64 platforms. It also includes command-line tools and a NetBeans-based Integrated Development Environment (IDE) for application performance analysis and debugging of mixed source language applications. The tools offer multi-platform support, compatible with gcc, Visual C++, C99, OpenMP, and Fortran 2003.

# Reinstalling the Solaris Operating System

If you want to reinstall Solaris or to install a different version of Solaris, you can install the OS in one of several ways, including by DVD and network (using Preboot eXecution Environment (PXE)).

For step-by-step procedures, see *Solaris 10 Installation Guide: Basic Installations.*

## Downloading Software

If you need to reinstall software, you can download the software from the following sites:

- To download the Solaris 10 operating system, go to:

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

- To download patches, go to:

  `http://sunsolve.sun.com/pub-cgi/show.pl?target=home`

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