



Sun Blade™ X6240 Server Module Installation Guide

Sun Microsystems, Inc.
www.sun.com

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Preface

This *Sun Blade X6240 Server Module Installation Guide* contains procedures for installing the server module in a chassis, connecting to the service processor, and configuring either the preinstalled Solaris™ Operating System, or OpenSolaris™ 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	<i>machine-name%</i>
C shell superuser	<i>machine-name#</i>
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 <code>.login</code> file. Use <code>ls -a</code> to list all files. <code>% You have mail.</code>
AaBbCc123	What you type, when contrasted with on-screen computer output	<code>% su</code> Password:
<i>AaBbCc123</i>	Book titles, new words or terms, words to be emphasized. Replace command-line variables with real names or values.	Read Chapter 6 in the <i>User's Guide</i> . These are called <i>class</i> options. You <i>must</i> be superuser to do this. To delete a file, type <code>rm filename</code> .

* 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 Blade™ X6240 Server Module.

Title	Content	Part Number	Format
<i>Sun Blade X6240 Server Module Product Notes</i>	Late-breaking information about the server module.	820-3972	PDF HTML
<i>Sun Blade X6240 Server Module Getting Started Guide</i>	Basic installation information for setting up the server module.	820-3975	PDF Print
<i>Sun Blade X6240 Server Module Installation Guide</i>	Detailed installation information for setting up the server module.	820-3968	PDF HTML Print option
<i>Sun Blade X6240 Server Module Operating System Installation Guide</i>	Installation instructions for the Solaris and Linux operating systems.	820-3969	PDF HTML
<i>Sun Blade X6240 Server Module Windows Operating System Installation Guide</i>	Installation instructions for the Windows Server operating system.	820-3970	PDF HTML
<i>Sun Blade X6240 Server Module Service Manual</i>	Information and procedures for maintaining and upgrading the server module.	820-3971	PDF HTML
<i>x64 Servers Utilities Reference Manual</i>	Information for using applications and utilities common to x64 servers and server modules.	820-1120	PDF HTML
<i>Sun Integrated Lights Out Manager 2.0 User's Guide</i>	ILOM features and tasks that are common to servers and server modules that support ILOM.	820-1188	PDF HTML
<i>Sun Integrated Lights Out Manager Supplement for Sun Blade X6240 Server Module</i>	ILOM information that is specific to the server module.	820-3974	PDF HTML
<i>Sun Blade X6240 Server Module Safety and Compliance Manual</i>	Hardware safety and compliance information for the server module.	820-4411	PDF
<i>Important Safety Information for Sun Hardware Systems</i>	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 Blade X6240 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 X6240 server module site contains updates for firmware and drivers, as well as CD-ROM .iso images.

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Please include the title and part number of your document with your feedback:

Sun Blade X6240 Server Module Installation Guide, part number 820-3968-11

Setting Up the Server Hardware

This chapter describes how to insert the Sun Blade X6240 server module into the chassis, how to power on and power off the server module, and how to connect the dongle cable to the server module.

This chapter contains the following topics:

- [“Terms Used in This Guide” on page 1](#)
 - [“Inserting the Server Module” on page 3](#)
 - [“Powering On and Powering Off the Server Module” on page 5](#)
 - [“Using a Dongle Cable for Testing” on page 8](#)
-

Terms Used in This Guide

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.
- The term *Integrated Lights Out Manager (ILOM)* refers to the built-in system management software that enables the monitoring and managing of installed components in the chassis and server module.
- The term *service processor (SP)* refers to the hardware portion of the ILOM. The SP is capable of functioning independently of the server operating system as well as in power off situations.
- The term *chassis management module (CMM)* refers to the chassis-level ILOM.

Installation Overview

After unpacking your server module, perform the following tasks:

1. Insert the server module into the chassis.
See [“Inserting the Server Module” on page 3](#).
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 5](#).
4. Connect to the server module through the service processor on the chassis management module 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 11](#) of this guide.
5. Configure either the preinstalled Solaris or OpenSolaris Operating System, or install a supported operating system of your choice.
Refer to [“Configuring the Preinstalled Solaris 10 Operating System” on page 36](#) or [“Configuring the Preinstalled OpenSolaris Operating System” on page 52](#). See also the *Sun Blade X6240 Server Module Operating System Installation Guide* (820-3969).
6. Customize your server, as needed.
For more information, see the Sun ILOM documentation:
 - *Sun Integrated Lights Out Manager 2.0 User’s Guide* (820-1188)
 - *Sun Integrated Lights Out Manager (ILOM) Supplement for Sun Blade X6240 Server Module* (820-3974)
 - *Addendum to the Sun Integrated Lights Out Manager 2.0 User’s Guide* (820-4198)

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

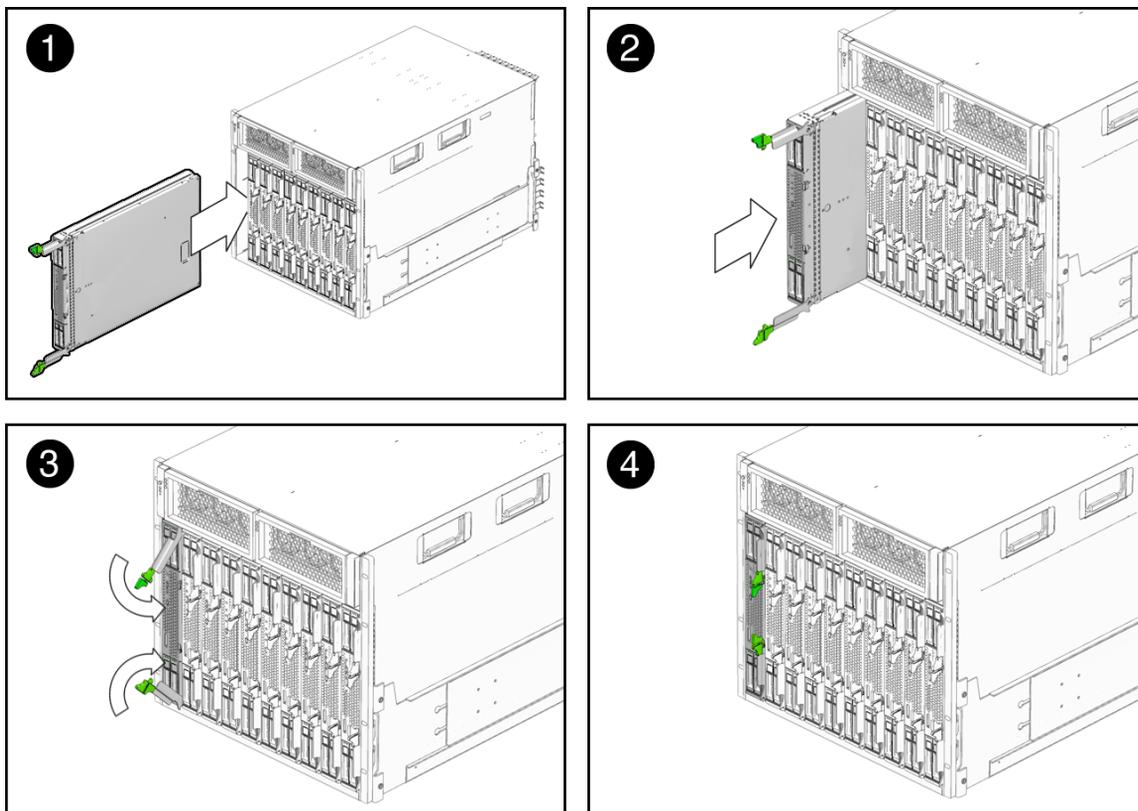
1. **Locate the desired server module slot in the chassis.**
2. **(Optional) Remove the slot filler panel, if applicable.**
Pull the lever out and eject the filler panel.

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 and extended outwardly.**

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 module 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 blue (Ready to Remove) LED is illuminated, 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 service processor 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 Module Components

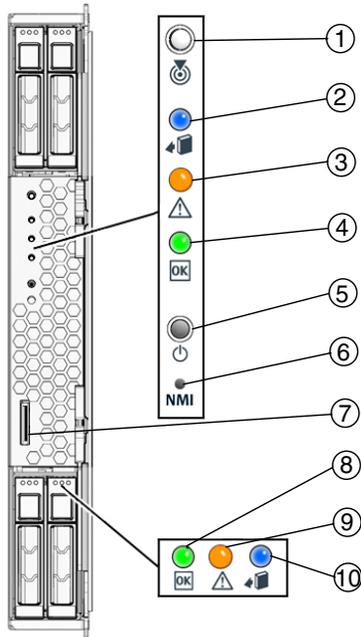
1. **Verify that standby power is on.**

In standby power mode, the blue (Ready to Remove) LED is illuminated. See [FIGURE 1-2](#).

2. Use a pointed object or stylus to press and release the recessed Power button on the server module front panel.

When main power is applied to all server module components, the green Power LED above the Power button lights and remains lit.

FIGURE 1-2 Sun Blade X6240 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 button/standby |
| 6 | Non-Maskable Interrupt (NMI) button (Service only) |
| 7 | Universal Connector Port (UCP), 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 module 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 to enter standby power mode.

When main power is off, the blue (Ready to Remove) LED on the front panel will be illuminated, indicating that the server module is in standby power mode.

Note – To power off the server module completely, you must disconnect the AC power cords from the back panel of the chassis. This will remove power from all the blades in the chassis.

Using a Dongle Cable for Testing

Your chassis ships with a dongle cable. The dongle enables you to plug devices directly into the front of the server module for testing.



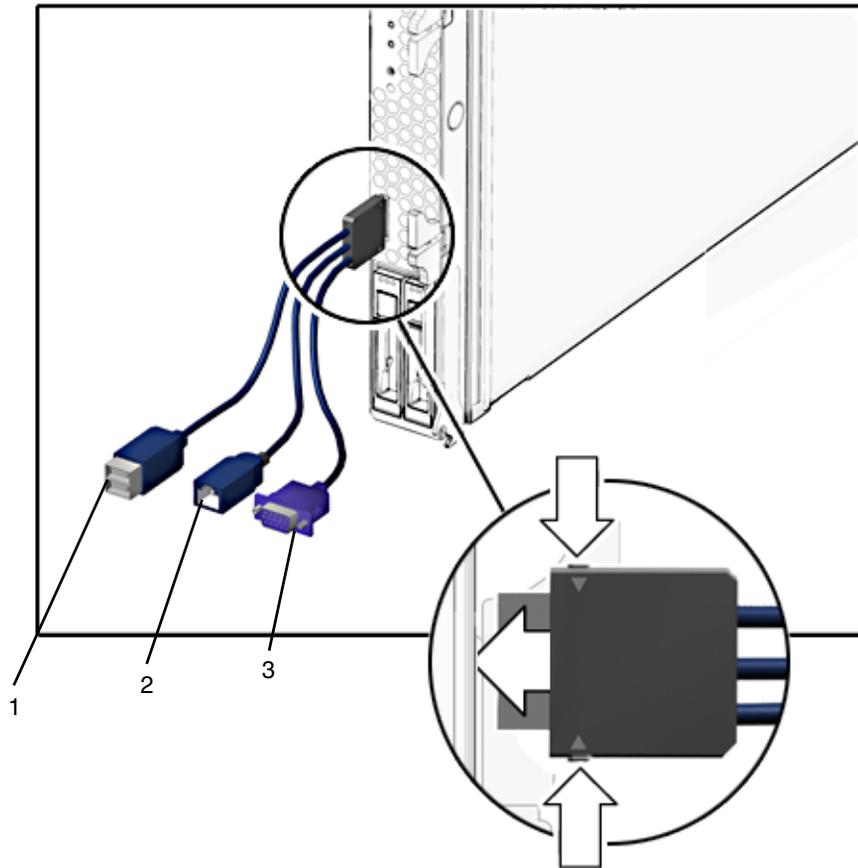
Caution – The dongle cable should be used only for configuration and service purposes. It should be disconnected from the server module when the configuration or servicing operation is completed.

If you have a dongle cable connected to a server module, it must be removed before closing the door of a rack cabinet. The dongle cable may be damaged if it is not removed before the cabinet door is closed.

▼ 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 device to the dongle cable connections, as appropriate.

FIGURE 1-3 Dongle Cable Connections



Legend

	Connector	Status
1	Dual USB 2.0 connectors	Used
2	Serial port connector	Used
3	VGA video connector	Used

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” on page 11](#)
 - [“What Is a Service Processor?” on page 12](#)
 - [“About the Preconfigured Administrator Account” on page 12](#)
 - [“ILOM Connection Overview” on page 13](#)
 - [“Connecting to the Server Module ILOM” on page 13](#)
 - [“Configuring the ILOM IP Address” on page 23](#)
- [“Setting Up Platform Operating System and Driver Software” on page 29](#)

Integrated Lights Out Manager

Sun Integrated Lights Out Manager (ILOM) is built-in system management software that enables you to control your system. Using ILOM, you can monitor and manage the components installed in your chassis and server modules, 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 the web browser interface, command-line interface (CLI), SNMP interface, as well as the IPMI interface.

Note – This chapter describes how to access ILOM through the command-line interface and web browsers. For other methods, see the *Sun Integrated Lights Out Manager 2.0 User's Guide* (820-1188).

What Is a Service Processor?

A service processor (SP) is a component, located on the server module's motherboard, that operates independently of the other hardware in the system. The SP 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 management module (CMM) 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 ILOM is shipped with a preconfigured Administrator account:

User name: `root`

Password: `changeme`

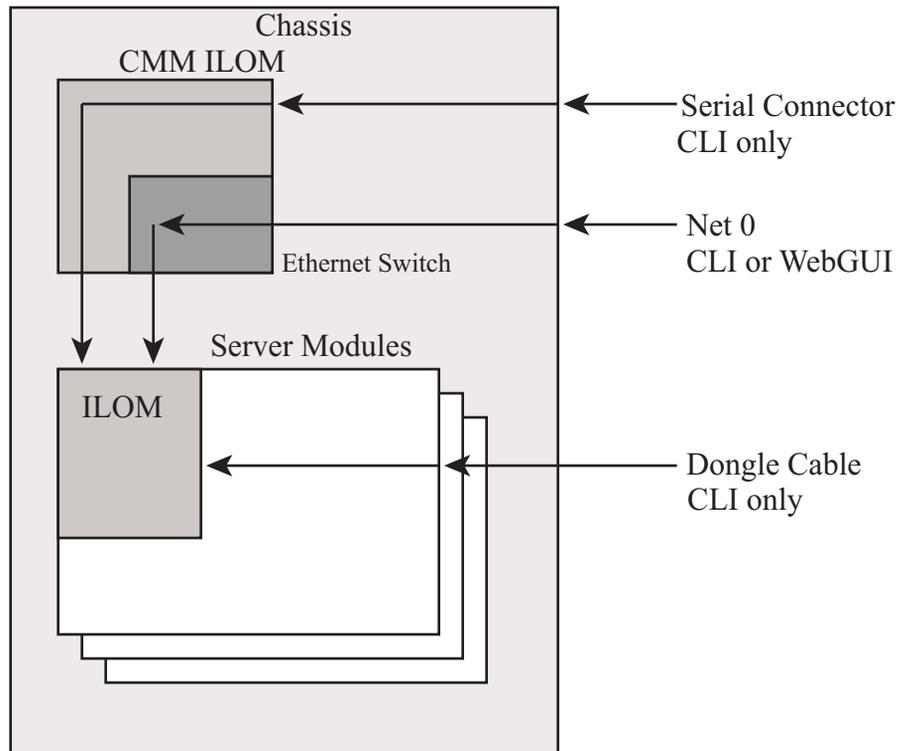
The preconfigured Administrator account, known as `root`, cannot be deleted or changed, other than changing its password. This account offers built-in administrative privileges (read and write access) to all service processor features and commands.

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

ILOM 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 ILOM.

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

Note – Option 1 and option 2 enable you to connect to ILOM without knowing ILOM’s IP address. These options provide access to ILOM’s command-line interface (CLI) only. Option 3 requires you to know ILOM’s IP address, but supports CLI and web GUI access. Most users configure ILOM’s IP address, then connect to it using Option 3.

Instructions for configuring ILOM’s IP address are in [“Configuring the ILOM IP Address” on page 23.](#)

- **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 14.](#)
- **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 18.](#)
- **Option 3.** Connect through the Ethernet. This connection supports both CLI and web GUI access. See [“Option 3: Connecting to ILOM Through the Ethernet Port” on page 19.](#)

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 to ILOM 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) enables 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 the 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:

```
SUNCMMnnnnnnnnnnnnnnnn 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. Type the command `start`.

A prompt appears.

8. Type `y` to continue or `n` to cancel.

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

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

9. When prompted, type the password.

The default password is `changeme`.

The server module ILOM prompt appears. You are now connected to the server module ILOM.

10. Type `exit` when you are done.

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 2.0.3.9

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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

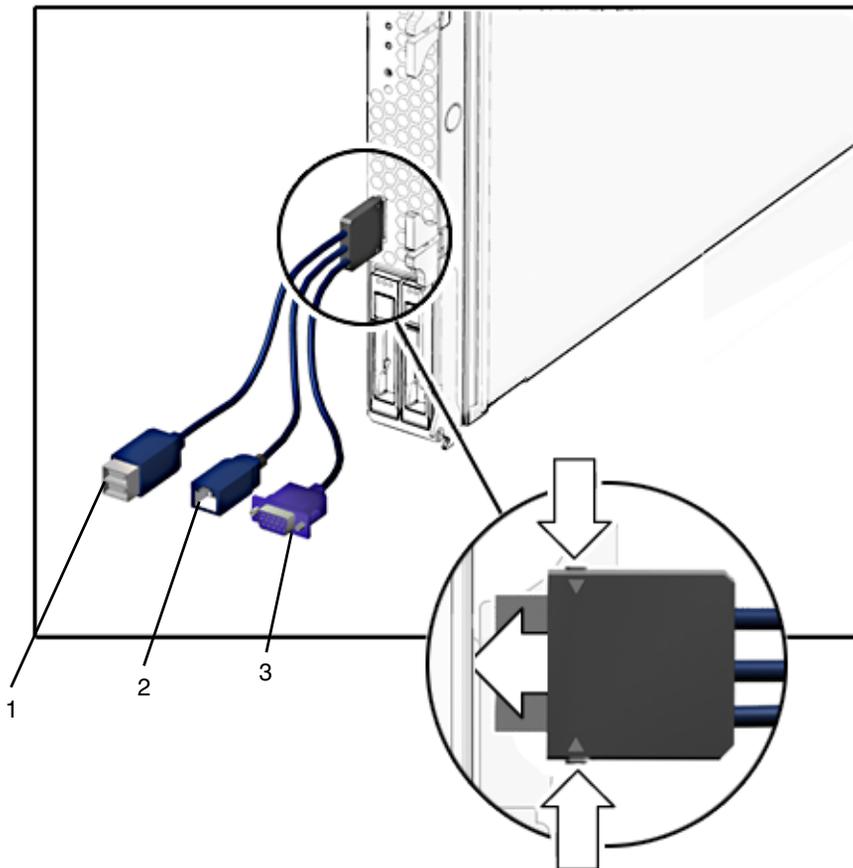
You can use the dongle cable to connect a terminal directly to the server module ILOM. [FIGURE 2-2](#) shows a dongle cable connected to a server module.



Caution – The dongle cable should be used only for configuration and service purposes. It should be disconnected from the server module when the configuration or servicing operation is completed.

If you have a dongle cable connected to a server module, it must be removed before closing the door of a rack cabinet. The dongle cable may be damaged if it is not removed before the cabinet door is closed.

FIGURE 2-2 Dongle Cable



Legend

	Connector	Status
1	Dual USB connectors	Used
2	Serial port connector	Used
3	VGA video connector	Used

▼ To Connect to ILOM Using a Dongle Cable

1. **Connect a dongle cable to the server module.**
2. **Connect a terminal or terminal emulator to the RJ-45 connector (labeled as 2 in the figure) on the dongle cable.**
The ILOM login prompt appears.
3. **Type the user name and password when prompted.**
The default user name is **root** and the default password is **changeme**.
The server module ILOM prompt appears.
4. **When you are done, exit 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 ILOM. This connection supports both the CLI and the web GUI.

You can connect to 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 ILOM's IP address.

Note – To configure the ILOM IP address, see [“Configuring the ILOM IP Address” on page 23](#).

Logging In and Out of ILOM

You can use either the ILOM command-line interface (CLI) or web GUI to access ILOM.

▼ To Log In and Out of the ILOM CLI

ILOM supports Secure Shell (SSH) access to the CLI over the Ethernet.

1. Start an SSH client.

2. To log in to ILOM CLI, type:

```
$ ssh root@ipaddress
```

Where *ipaddress* is the IP address of the server SP.

3. Type your password when prompted.

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 2.0.3.9
Copyright 2008 Sun Microsystems, Inc. All rights reserved.
Warning: password is set to factory default.
->
```

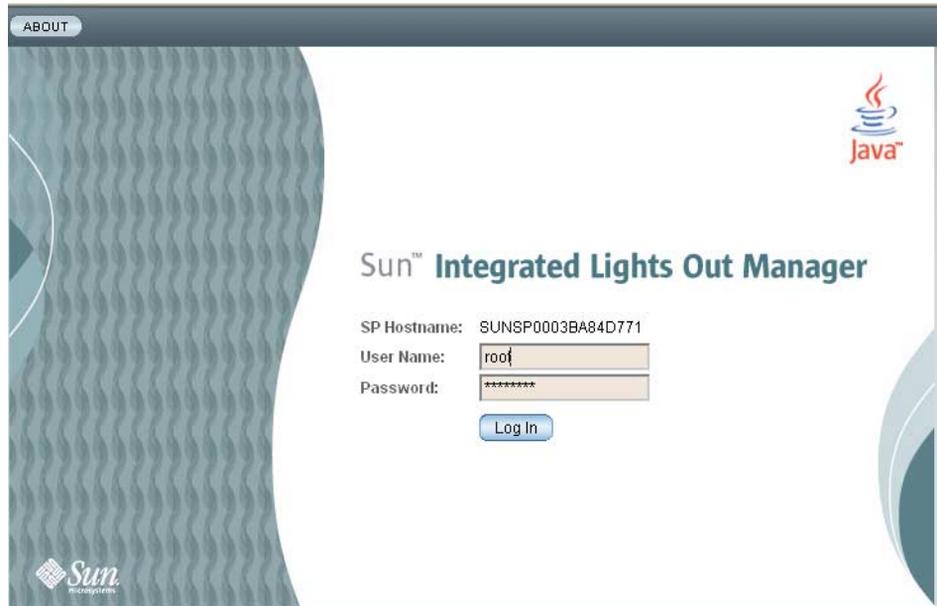
4. To log out of ILOM, type **exit**.

▼ To Log In and Out of the ILOM Web GUI

1. To log in to the ILOM web GUI, type the IP address of the ILOM service processor into your web browser.

The ILOM login screen appears.

FIGURE 2-3 Web GUI ILOM Login Screen



2. Type your user name and password.

When you first try to access the web GUI, 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 web GUI appears.

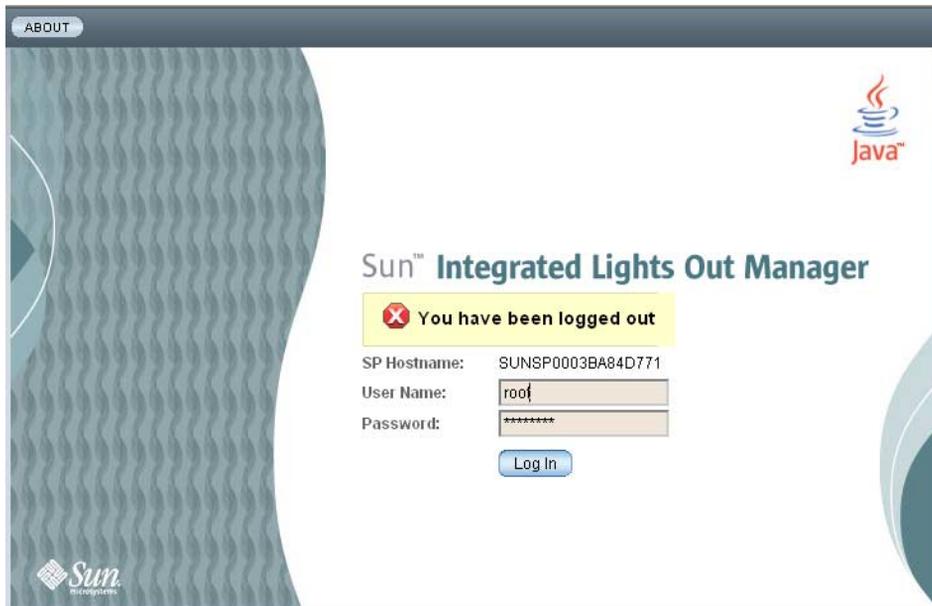
4. To log out of the web GUI, click the Log Out button at the top right of the web GUI.

The ILOM log out screen appears.



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

FIGURE 2-4 ILOM 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:

- [“To View the ILOM IP Address” on page 23](#)
- [“To Configure the ILOM IP Address Using BIOS Setup Utility” on page 23](#)
- [“To Configure the ILOM IP Address Using DHCP” on page 25](#)
- [“To Configure the ILOM IP Address Using the CLI” on page 26](#)

▼ To View the ILOM IP Address

1. **Log in to the ILOM CLI using any of the methods described in [“Connecting to the Server Module ILOM” on page 13](#).**

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
```

▼ To Configure the ILOM IP Address Using BIOS Setup Utility

The BIOS Setup Utility enables you to set the ILOM IP address. You can configure the IP address manually (static) 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 message 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 in to ILOM CLI using option 1 or option 2 (see [“Connecting to the Server Module ILOM” on page 13](#)) and enter this 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 web GUI and the ILOM Remote Console application.

▼ To Configure the ILOM IP Address Using DHCP

This procedure uses DHCP to assign 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 has a serial port to which you can attach a terminal device. If you log into ILOM and type the command `show /SP/network`, ILOM displays the current MAC address. See [“Option 2: Connecting to ILOM Through a Dongle Cable” on page 18](#).
- The CMM 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/BLn/SP/network`, the CMM ILOM displays the current MAC address. See [“Option 3: Connecting to ILOM Through the Ethernet Port” on page 19](#).
- 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 network express module (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 DHCP 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 in to the server module ILOM.** See [“Option 1: Connecting to ILOM Through the Chassis Serial Connector” on page 14](#) or [“Option 3: Connecting to ILOM Through the Ethernet Port” on page 19](#).

b. Type the reset command:

```
-> reset /SP
```

DHCP automatically assigns ILOM an IP address when the server module restarts.

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

See [Step 8](#) in [“To Configure the ILOM IP Address Using BIOS Setup Utility”](#) on page 23.

▼ To Configure the ILOM IP Address Using the CLI

This procedure describes how 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 14.
- Connect to the server module ILOM using a dongle cable as described in [“Option 2: Connecting to ILOM Through a Dongle Cable”](#) on page 18.
- Connect to the server module ILOM using SSH as described in [“Option 3: Connecting to ILOM Through the Ethernet Port”](#) on page 19.

2. To see the IP address, type `show /SP/network/ipaddress`.

The last string, `/ipaddress` is optional.

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

/SP/network
  Targets:

  Properties:
    ipaddress = 10.6.153.148

  Commands:
    show

->
```

3. To navigate to `/SP/network`, type:

```
-> cd /SP/network
```

4. Do one of the following:

- To configure a static Ethernet configuration, type the following commands:

```
-> 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, type the following commands:

```
-> set pendingipdiscovery=dhcp  
-> set commitpending=true
```

5. To log out of ILOM, type:

```
-> 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 ILOM using SSH, you will be disconnected automatically because you logged in under a different IP address. If it is taking a long time to be disconnected, you can force a disconnect by typing `~.` in the SSH window.

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 or OpenSolaris 2009.06 Operating System, or install a supported Windows or Linux 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 31.
- If you want to use the preinstalled OpenSolaris 2009.06 Operating System, refer to [“Configuring the Preinstalled OpenSolaris Operating System”](#) on page 47.
- For details about installing a supported Linux or Solaris OS and the required drivers, refer to *Sun Blade X6240 Server Module Operating System Installation Guide* (820-3969).
- For details about installing a supported Windows OS and the required drivers, refer to *Sun Blade X6240 Server Module Windows Operating System Installation Guide* (820-3970).
- For additional OS considerations specific to this server, also refer to the *Sun Blade X6240 Server Module Product Notes* (820-3972).

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, if ordered. The preinstalled version is Solaris 10 5/08 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 [“\(Optional\) To Redirect the Console Output to the Video Port”](#) on page 38.

This chapter includes the following topics:

- [“Before You Begin”](#) on page 32
- [“Configuring the Preinstalled Solaris 10 Operating System”](#) on page 36
- [“Configuring X6240 Server Module RAID Drives”](#) on page 39
- [“Mirroring the Preinstalled Solaris Operating System With LSI RAID”](#) on page 40
- [“Solaris 10 Operating System User Information”](#) on page 43
- [“Using the Solaris Installation Program”](#) on page 44
- [“Reinstalling the Solaris Operating System”](#) on page 45

Before You Begin

Before you begin configuring the preinstalled Solaris 10 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 13.
- Gather the information that you will need for the configuration, as listed in [“Installation Worksheet”](#) on page 32. 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 Solaris 10 Configuration

Information for Installation		Description or Example	Your Answers: Defaults (*)
Language		Select from the list of available languages for the Solaris 10 software.	English*
Locale		Select your geographic region from the list of available locales.	
Terminal		Select the type of terminal that you are using from the list of available terminal types.	
Network connection		Is the system connected to a network?	<ul style="list-style-type: none"> • Networked • Non-networked*
DHCP		Can the system use Dynamic Host Configuration Protocol (DHCP) to configure its network interfaces?	<ul style="list-style-type: none"> • 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?	<ul style="list-style-type: none"> • 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: <div style="text-align: right; margin-right: 50px;"> Default realm: Administration server: First KDC: (Optional) Additional KDCs: </div>	<ul style="list-style-type: none"> • Yes • No*

TABLE 3-1 Worksheet for Solaris 10 Configuration (*Continued*)

Information for Installation		Description or Example	Your Answers: Defaults (*)
Name service	Name service	If applicable, which name service should this system use?	<ul style="list-style-type: none"> • 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?	<ul style="list-style-type: none"> • Specify One • Find One*
	DNS	<p>Provide IP addresses for the DNS server. You must enter at least one IP address, but you can enter up to three addresses.</p> <p>You can also enter a list of domains to search when a DNS query is made.</p> <p style="text-align: right;">Search domain: Search domain: Search domain:</p>	
	LDAP	<p>Provide the following information about your LDAP profile:</p> <p style="text-align: right;">Profile name: Profile server:</p> <p>If you specify a proxy credential level in your LDAP profile, gather the following information:</p> <p style="text-align: right;">Proxy-bind distinguished name: Proxy-bind password:</p>	

TABLE 3-1 Worksheet for Solaris 10 Configuration (*Continued*)

Information for Installation	Description or Example	Your Answers: Defaults (*)
Default route	<p>Do you want to specify a default route IP address, or let the Solaris installation program find one?</p> <p>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.</p> <p>You have the following choices:</p> <ul style="list-style-type: none">• You can specify the IP address. An <code>/etc/defaultrouter</code> 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 Internet Control Message Protocol (ICMP) for router discovery. If you are using the command-line interface, the software detects an IP address when the system is booted.• You can select 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.	<ul style="list-style-type: none">• Specify One• Detect One• None*
Time zone	How do you want to specify your default time zone?	<ul style="list-style-type: none">• Geographic region*• Offset from GM• 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 [Chapter 2](#).

Use the information that you gathered in “[Installation Worksheet](#)” on page 32 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 Configure the Preinstalled Solaris 10 OS

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 13.

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 the Windows OS, start a program such as Hyperterminal.
- On a client running the Linux OS, 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 log in to the service processor using one of the methods described in “[Connecting to the Server Module ILOM](#)” on page 13.**

The server module ILOM CLI prompt appears:

```
->
```

2. Verify that 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.
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 module 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 on-screen prompts.
8. Use the information gathered in [“Installation Worksheet” on page 32](#) 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.

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

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-based or x64-based systems. The boot loader is the first software program that runs after you power on a system.

1. Use a cable to connect the serial port of the host server (either through the chassis SER MGT port or through a dongle cable's serial port) to the video port of the client system.
2. From the GRUB menu, you have the option of displaying the installation process to a VGA connection (video port) as shown here:

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

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

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

Configuring X6240 Server Module RAID Drives

After you configure the Solaris OS, you might need to configure the RAID drives.

RAID Drive Overview

The Sun Blade X6240 server module has two optional RAID expansion module (REM) cards. You can access RAID configuration through the REM card BIOS. To access the LSI REM card BIOS, press CTRL-C during the system boot. To access the Sun StorageTek REM card BIOS, press CTRL-A during the system boot.

TABLE 3-2 Sun Blade X6240 REM cards

REM cards	Press for BIOS
Sun StorageTek	CTRL-A
LSI 3081E	CTRL-C

The server module has the preinstalled OS on hard disk drive 0 (HDD0). When the Solaris OS installation is complete, the option to upgrade your single-disk OS to a mirrored RAID solution is available.

The configuration procedure is different for each supported REM card. For example, a Sun StorageTek REM card has many more options for RAID configuration than does an LSI REM card. Configure the RAID depending on your needs as shown in [TABLE 3-3](#).

Note – Configuring RAID for the Sun Blade X6240 server module is optional. By default the Solaris preinstalled image is configured in a non-RAID configuration. If anything other than a basic mirror RAID is required, it is recommended to perform a fresh installation of the Solaris Operating System (or other OS) in the desired RAID configuration.

RAID Drive Options

TABLE 3-3 shows the RAID drive options.

TABLE 3-3 RAID Drive Options

REM Card	Drives Supported	RAID Configurations Supported	Drive Usage
Sun StorageTek	Seagate 73GB SAS	Volume – 1 disk	
	Fujitsu 73GB SAS	RAID 0 – stripe – 2 disk minimum	No redundancy
	Seagate 146GB SAS	RAID 1 – mirror – 2 disk minimum	50%
	Fujitsu 146GB SAS	RAID 1E – 3 drive minimum	50%
	Hitachi 146GB SAS	RAID 5 – 3 drive minimum	67–94%
	Fujitsu 200GB SATA	RAID 5EE – 4 drive minimum	50–88%
		RAID 50 – 6 drive minimum	67–94%
		RAID 6 – 4 drive minimum	50–88%
		RAID 60 – 8 drive minimum	50–88%
		Spanned Volume – 2 drive minimum	100%
	RAID Volume – 4 drive minimum	50-100%	
LSI 3081E	Seagate 73GB SAS	IM (Integrated Mirror array) – 2 disk minimum, plus up to 2 hot spare disks.	Data on Primary disk might be merged.
	Fujitsu 73GB SAS		
	Seagate 146GB SAS	IME (Integrated Mirror Enhanced array) – 3 to 8 disks including up to 2 hot spares.	All data will be deleted during creation.
	Fujitsu 146GB SAS		
	Hitachi 146GB SAS	IS (Integrated Striping array) – 2 to 8 disks.	All data will be deleted during creation.
	Fujitsu 200GB SATA		

Mirroring the Preinstalled Solaris Operating System With LSI RAID

The Solaris OS supports hardware RAID and cannot be installed on an existing array if one has been created. Refer to the *Sun Blade X6240 Server Module OS Installation Guide* (820-3969) or a REM card product guide.

If you choose the preinstalled Solaris OS and want to make the OS part of a RAID set, and if you are using the LSI REM card only, perform the following procedure to update the preinstalled Solaris OS to a mirrored RAID set. As noted in [TABLE 3-3](#), only Integrated Mirror (IM) allows data on the primary hard disk drive (HDD) to be preserved or merged into an array of disks.

This procedure describes how to create a mirror image of the OS before or after the Solaris installation. The server module has two hard disk drives: HDD0 (with the OS) and HDD1 (which is blank).

▼ To Create a Mirror Image of the Preinstalled Solaris OS

To create a mirror image of the Solaris OS on HDD1:

1. **Power on your server module.**
2. **Press CTRL-C to access the LSI RAID Configuration Utility.**
3. **Select the REM card, then press Enter.**
4. **Choose RAID Properties.**
5. **Create an Integrated Mirror (IM) for the required disk configuration.**
6. **Select the hard disks to be used. Use the right arrow to move the cursor to the RAID column, and press the Space bar to include disks into RAID.**
7. **Because HDD0 contains data, select merge or delete:**
 - Choose **M** to merge data and start a sync operation.
 - Choose **D** to erase the Solaris PreInstall.
8. **Press C to create the RAID and start the sync operation.**
9. **Click Exit to save the configuration and close the menu.**
10. **Press Esc to exit the Configuration Utility.**
11. **Reboot the Solaris OS.**

Creating a RAID Set to Incorporate a Preinstalled OS Using the Sun StorageTek REM Card

The Sun StorageTek REM card enables you to choose from many RAID configurations. How you configure your system depends on your system requirements and the available hard disk drives in the system.

This procedure describes how to mirror the preinstalled Solaris OS. This is the better option, and all remaining disks (should there be more than 2) are incorporated into a DATA RAID set using the available options as shown in [TABLE 3-3](#).

You will need the *Sun Blade X6240 Server Module Tools & Drivers CD (707-0257)*.

▼ To Incorporate a Preinstalled Solaris OS Using the Sun StorageTek REM Card

Follow these steps to mirror your configured Solaris OS:

1. Using your Solaris server, log in and start Xserver.

This graphical user interface is required for StorageTek Software Management.

2. Make a new directory on your Solaris server, type:

```
mkdir /StorMan
```

3. Insert the supplied Tools & Drivers CD, and copy the StorMan.dss application, located in the /mount-point/RAIDmgmt/StorageTEK/Solaris directory, to the new directory you created on your Solaris server, for example, /StorMan.

4. Change the permissions of the new directory and StorMan application, by typing:

```
chmod 777 StormMan.dss
```

5. Type the following command to install the application:

```
pkgadd -d StorMan.dss
```

6. Choose to install all components when prompted.

7. To run the application, type the following:

```
sh /usr/StorMan/StorMan.sh
```

A split screen appears.

8. Click the screen to activate the Managed Systems List.

9. Double-click the local machine.

The local machine can be identified by the IP Address of the Primary ENET connection.

A prompt appears.

10. At the prompt, log in as root, using the OS password that was assigned during Solaris installation.

11. Click the SUN STK RAID Controller.

All attached hard disk drives on Enclosure 0 and 1 appear.

Tip – HDD0 (OS) should be Enclosure 0 Logical Volume 1.

12. To mirror the OS, right-click Logical Device 1 and choose Expand or Change Logical Device.

13. Choose the appropriate RAID option (in this example, RAID 1 for Mirror).

14. Choose a disk to mirror the OS with, from the physical disk list.

Select the hard disk drive that best fits your needs.

15. After you select the HDD, click Next, and then view the configuration summary.

16. Click Apply to start the mirroring process.

You can also click **Schedule** to perform the mirroring process at a later time.

17. In the confirmation screen, click Confirm to start the mirroring process.

The OS begins to mirror. Mirroring may take several hours, depending on the amount of data and the HDD size.

Solaris 10 Operating System User Information

This section provides pointers to information about the Solaris 10 Operating System.

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/>

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>

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 the Solaris OS or to install a different version of the Solaris OS, you can install the OS in one of several ways, including by using DVD and network (using the Jumpstart Enterprise Toolkit [JET]).

For step-by-step procedures, see the *Solaris 10 Installation Guide: Basic Installations* (820-0176). See also the *Sun Blade X6240 Server Module Operating System Installation Guide* (820-3969).

Downloading the Solaris Operating System

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>

Configuring the Preinstalled OpenSolaris Operating System

This chapter explains the steps for configuring the OpenSolaris Operating System (OS) that has been preinstalled on your server, if ordered. The preinstalled version is OpenSolaris 2009.06 or later.

Note – Unlike with SPARC® systems, you will *not* see the output of the preinstalled OpenSolaris 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 [“\(Optional\) To Redirect the Console Output to the Video Port”](#) on page 54.

This chapter includes the following topics:

- [“Before You Begin”](#) on page 48
- [“Configuring the Preinstalled OpenSolaris Operating System”](#) on page 52
- [“Configuring X6240 Server Module RAID Drives”](#) on page 56
- [“Mirroring the Preinstalled OpenSolaris Operating System With LSI RAID”](#) on page 57
- [“OpenSolaris Operating System User Information”](#) on page 61
- [“Using the OpenSolaris Operating System Installation Program”](#) on page 61
- [“Reinstalling the OpenSolaris Operating System”](#) on page 62

Before You Begin

Before you begin configuring the preinstalled OpenSolaris 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 13](#).
- Gather the information that you will need for the configuration, as listed in [“Installation Worksheet” on page 48](#). 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 4-1](#) to gather the information that you need to configure the preinstalled OpenSolaris OS. You only need to collect the information that applies to your application of the system.

TABLE 4-1 Worksheet for OpenSolaris Configuration

Information for Installation	Description or Example	Your Answers: Defaults (*)
Language	Select from the list of available languages for the OpenSolaris software.	English*
Locale	Select your geographic region from the list of available locales.	
Terminal	Select the type of terminal that you are using from the list of available terminal types.	
Network connection	Is the system connected to a network?	<ul style="list-style-type: none"> • Networked • Non-networked*
DHCP	Can the system use Dynamic Host Configuration Protocol (DHCP) to configure its network interfaces?	<ul style="list-style-type: none"> • 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
	IPv6	Do you want to enable IPv6 on this machine?
Host name	A host name that you choose for the system.	<ul style="list-style-type: none"> • Yes • No*
Kerberos	Do you want to configure Kerberos security on this machine? If yes, gather the following information: <div style="text-align: right; margin-right: 50px;"> Default realm: Administration server: First KDC: (Optional) Additional KDCs: </div>	<ul style="list-style-type: none"> • Yes • No*

TABLE 4-1 Worksheet for OpenSolaris Configuration (*Continued*)

Information for Installation		Description or Example	Your Answers: Defaults (*)
Name service	Name service	If applicable, which name service should this system use?	<ul style="list-style-type: none"> • 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?	<ul style="list-style-type: none"> • Specify One • Find One*
	DNS	<p>Provide IP addresses for the DNS server. You must enter at least one IP address, but you can enter up to three addresses.</p> <p>You can also enter a list of domains to search when a DNS query is made.</p> <p style="text-align: right;">Search domain: Search domain: Search domain:</p>	
	LDAP	<p>Provide the following information about your LDAP profile:</p> <p style="text-align: right;">Profile name: Profile server:</p> <p>If you specify a proxy credential level in your LDAP profile, gather the following information:</p> <p style="text-align: right;">Proxy-bind distinguished name: Proxy-bind password:</p>	

TABLE 4-1 Worksheet for OpenSolaris Configuration (*Continued*)

Information for Installation	Description or Example	Your Answers: Defaults (*)
Default route	<p>Do you want to specify a default route IP address, or let the OpenSolaris installation program find one?</p> <p>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.</p> <p>You have the following choices:</p> <ul style="list-style-type: none">• You can specify the IP address. An <code>/etc/defaultrouter</code> 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 OpenSolaris 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) for router discovery. If you are using the command-line interface, the software detects an IP address when the system is booted.• You can select 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.	<ul style="list-style-type: none">• Specify One• Detect One• None*
Time zone	How do you want to specify your default time zone?	<ul style="list-style-type: none">• Geographic region*• Offset from GM• Time zone file
Root password	Choose a root password for the system.	

Configuring the Preinstalled OpenSolaris Operating System

Note – Before you perform this procedure, you need to set up the service processor. For instructions on setting up the service processor, see [Chapter 2](#).

Use the information that you gathered in “[Installation Worksheet](#)” on page 48 as you perform the configuration.

After configuring the server module ILOM, you can configure the preinstalled OpenSolaris Operating System (OS) by using the service processor to connect to the system console.

▼ To Configure the Preinstalled OpenSolaris OS

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 13.

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 OpenSolaris OS, type:
`$tip -9600 /dev/ttya`
- On a client running the Windows OS, start a program such as Hyperterminal.
- On a client running the Linux OS, 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 log in to the service processor using one of the methods described in “[Connecting to the Server Module ILOM](#)” on page 13.**

The server module ILOM CLI prompt appears:

```
->
```

2. Verify that 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**

Note – Only accounts with Administrator privileges are enabled to configure the SP.

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 module 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 OpenSolaris preinstallation on-screen prompts.
8. Use the information gathered in [“Installation Worksheet” on page 48](#) to help you enter the system and network information as you are prompted.

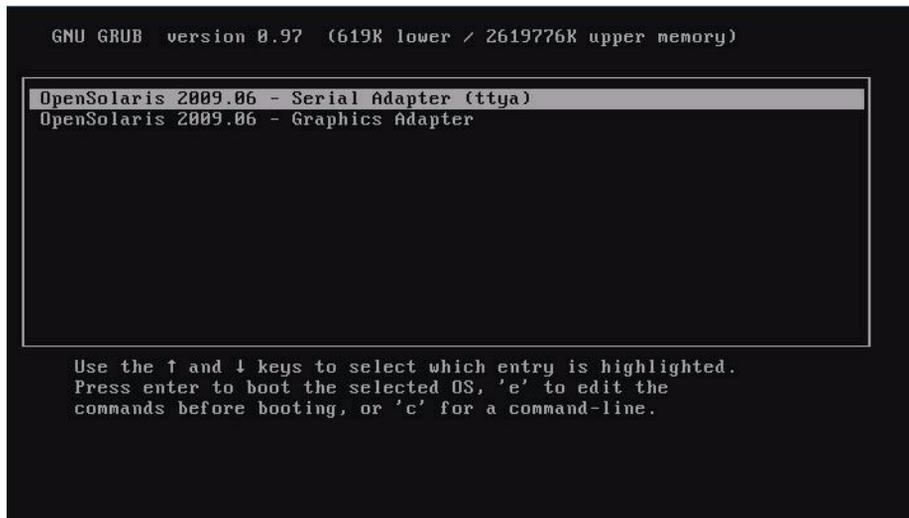
The screens that are displayed will vary, depending on the method that you chose for assigning network information to the server (DHCP or static IP address).

After you have entered the system configuration information, the server completes the boot process and displays the OpenSolaris login prompt.

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

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 OpenSolaris OS for x86-based or x64-based systems. The boot loader is the first software program that runs after you power on a system.

1. Use a cable to connect the serial port of the host server (either through the chassis SER MGT port or through a dongle cable's serial port) to the video port of the client system.
2. From the GRUB menu, you have the option of displaying the installation process to a VGA connection (video port) as shown here:



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

```
OpenSolaris 2009.06 - Graphics Adapter
```

▼ To Modify the GRUB Menu to Auto Boot

The GRUB menu on the preinstalled image has been configured for an infinite timeout so that you can choose the console output on power-up. However, you can modify this setting so that your system boots automatically.

- To modify the GRUB menu to auto boot, edit the `/rpool/boot/grub/menu.1st` file as follows:

- a. **Change the `-1` value on the timeout line to reflect the duration you want the menu to be presented.**

For example, for a 10-second delay, set the `-1` on the timeout line to `10`.

- b. **Add a line that specifies the defaults boot entry.**

For example, to specify the first entry, set the defaults to `10`.

Getting Started With the OpenSolaris Operating System

For information on getting started with OpenSolaris, click the Start Here icon on the OpenSolaris Desktop.



Configuring X6240 Server Module RAID Drives

After you configure the OpenSolaris OS, you might need to configure the RAID drives.

RAID Drive Overview

The Sun Blade X6240 server module has two optional RAID expansion module (REM) cards. You can access RAID configuration through the REM card BIOS. To access the LSI REM card BIOS, press CTRL-C during the system boot. To access the Sun StorageTek REM card BIOS, press CTRL-A during the system boot.

TABLE 4-2 Sun Blade X6240 REM cards

REM cards	Press for BIOS
Sun StorageTek	CTRL-A
LSI 3081E	CTRL-C

The server module has the preinstalled OS on hard disk drive 0 (HDD0). When the OpenSolaris OS installation is complete, the option to upgrade your single-disk OS to a mirrored RAID solution is available.

The configuration procedure is different for each supported REM card. For example, a Sun StorageTek REM card has many more options for RAID configuration than does an LSI REM card. Configure the RAID depending on your needs as shown in [TABLE 4-3](#).

Note – Configuring RAID for the Sun Blade X6240 server module is optional. By default the OpenSolaris preinstalled image is configured in a non-RAID configuration. If anything other than a basic mirror RAID is required, it is recommended to perform a fresh install of the OpenSolaris Operating System (or other OS) in the desired RAID configuration.

RAID Drive Options

TABLE 4-3 shows the RAID drive options.

TABLE 4-3 RAID Drive Options

REM Card	Drives Supported	RAID Configurations Supported	Drive Usage
Sun StorageTek	Seagate 73GB SAS	Volume – 1 disk	
	Fujitsu 73GB SAS	RAID 0 – stripe – 2 disk minimum	No redundancy
	Seagate 146GB SAS	RAID 1 – mirror – 2 disk minimum	50%
	Fujitsu 146GB SAS	RAID 1E – 3 drive minimum	50%
	Hitachi 146GB SAS	RAID 5 – 3 drive minimum	67–94%
	Fujitsu 200GB SATA	RAID 5EE – 4 drive minimum	50–88%
		RAID 50 – 6 drive minimum	67–94%
		RAID 6 – 4 drive minimum	50–88%
		RAID 60 – 8 drive minimum	50–88%
		Spanned Volume – 2 drive minimum	100%
	RAID Volume – 4 drive minimum	50-100%	
LSI 3081E	Seagate 73GB SAS	IM (Integrated Mirror array) – 2 disk minimum, plus up to 2 hot spare disks.	Data on Primary disk might be merged.
	Fujitsu 73GB SAS		
	Seagate 146GB SAS	IME (Integrated Mirror Enhanced array) – 3 to 8 disks including up to 2 hot spares.	All data will be deleted during creation.
	Fujitsu 146GB SAS		
	Hitachi 146GB SAS	IS (Integrated Striping array) – 2 to 8 disks.	All data will be deleted during creation.
Fujitsu 200GB SATA			

Mirroring the Preinstalled OpenSolaris Operating System With LSI RAID

The OpenSolaris OS supports hardware RAID and cannot be installed on an existing array if one has been created. Refer to the *Sun Blade X6240 Server Module OS Installation Guide* (820-3969) or a REM card product guide.

If you choose the preinstalled OpenSolaris OS and want to make the OS part of a RAID set, and if you are using the LSI REM card only, perform the following procedure to update the preinstalled OpenSolaris OS to a mirrored RAID set. As noted in [TABLE 4-3](#), only Integrated Mirror (IM) allows data on the primary hard disk drive (HDD) to be preserved or merged into an array of disks.

This procedure describes how to create a mirror image of the OS before or after the OpenSolaris installation. The server module has two hard disk drives: HDD0 (with the OS) and HDD1 (which is blank).

▼ To Create a Mirror Image of the Preinstalled OpenSolaris OS

To create a mirror image of the OpenSolaris OS on HDD1:

1. **Power on your server module.**
2. **Press CTRL-C to access the LSI RAID Configuration Utility.**
3. **Select the REM card, then press Enter.**
4. **Choose RAID Properties.**
5. **Create an Integrated Mirror (IM) for the required disk configuration.**
6. **Select the hard disks to be used. Use the right arrow to move the cursor to the RAID column, and press the Space bar to include disks into RAID.**
7. **Because HDD0 contains data, select merge or delete:**
 - Choose **M** to merge data and start a sync operation.
 - Choose **D** to erase the OpenSolaris PreInstall.
8. **Press C to create the RAID and start the sync operation.**
9. **Click Exit to save the configuration and close the menu.**
10. **Press Esc to exit the Configuration Utility.**
11. **Reboot the OpenSolaris OS.**

Creating a RAID Set to Incorporate a Preinstalled OS Using the Sun StorageTek REM Card

The Sun StorageTek REM card enables you to choose from many RAID configurations. How you configure your system depends on your system requirements and the available hard disk drives in the system.

This procedure describes how to mirror the preinstalled OpenSolaris OS. This is the better option, and all remaining disks (should there be more than 2) are incorporated into a DATA RAID set using the available options as shown in [TABLE 4-3](#).

You will need the *Sun Blade X6240 Server Module Tools & Drivers CD (707-0257)*.

▼ To Incorporate a Preinstalled OpenSolaris OS Using the Sun StorageTek REM Card

Follow these steps to mirror your configured OpenSolaris OS:

1. **Using your OpenSolaris server, log in and start Xserver.**

This graphical user interface is required for StorageTek Software Management.

2. **Make a new directory on your OpenSolaris server, type:**

```
mkdir /StorMan
```

3. **Insert the supplied Tools & Drivers CD, and copy the StorMan.dss application, located in the /mount-point/RAIDmgmt/StorageTEK/Solaris directory, to the new directory you created on your OpenSolaris server, for example, /StorMan.**

4. **Change the permissions of the new directory and StorMan application, by typing:**

```
chmod 777 StormMan.dss
```

5. **Type the following command to install the application:**

```
pkgadd -d StorMan.dss
```

6. **Choose to install all components when prompted.**

7. To run the application, type the following:

```
sh /usr/StorMan/StorMan.sh
```

A split screen appears.

8. Click the screen to activate the Managed Systems List.

9. Double-click the local machine.

The local machine can be identified by the IP Address of the Primary ENET connection.

A prompt appears.

10. At the prompt, log in as root, using the OS password that was assigned during OpenSolaris installation.

11. Click the SUN STK RAID Controller.

All attached hard disk drives on Enclosure 0 and 1 appear.

Tip – HDD0 (OS) should be Enclosure 0 Logical Volume 1.

12. To mirror the OS, right-click Logical Device 1 and choose Expand or Change Logical Device.

13. Choose the appropriate RAID option (in this example, RAID 1 for Mirror).

14. Choose a disk to mirror the OS with, from the physical disk list.

Select the hard disk drive that best fits your needs.

15. After you select the HDD, click Next, and then view the configuration summary.

16. Click Apply to start the mirroring process.

You can also click **Schedule** to perform the mirroring process at a later time.

17. In the confirmation screen, click Confirm to start the mirroring process.

The OS begins to mirror. Mirroring may take several hours, depending on the amount of data and the HDD size.

OpenSolaris Operating System User Information

This section provides pointers to information about the OpenSolaris Operating System.

OpenSolaris OS User Documentation

You can access OpenSolaris OS user documentation at:

<http://opensolaris.org/os/documentation>

OpenSolaris OS Training

For OpenSolaris training options, go to:

<http://www.opensolaris.com/learn/subscriptions/>

Using the OpenSolaris Operating System Installation Program

Instructions for using the OpenSolaris installation program are available at the following web site:

<http://dlc.sun.com/osol/docs/content/2009.06/getstart/index.html>

After you configure the preinstalled OpenSolaris OS, the OpenSolaris installation program reboots the system and prompts you to log in.

Reinstalling the OpenSolaris Operating System

If you want to reinstall the OpenSolaris OS or to install a different version of the OpenSolaris OS, refer to the *Getting Started With OpenSolaris 2009.06* at:

<http://dlc.sun.com/osol/docs/content/2009.06/getstart/>

Downloading the OpenSolaris Operating System

You can download software for the OpenSolaris OS from the following sites:

- To download the OpenSolaris OS, go to:
<http://opensolaris.org/os/TryOpenSolaris/>
- To download support repository updates (SRUs), which contain the latest released bug fixes for the OpenSolaris OS, go to:
<http://sunsolve.sun.com/show.do?target=opensolaris>

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