



Sun Blade™ X8440 Server Module Installation Guide

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Preface

The *Sun Blade X8440 Server Module Installation Guide* includes general information about the Sun Blade™ X8440 Server Module and instructions for installing the server module into a Sun Blade Modular System.

Before You Read This Document

This document is intended for experienced system administrators. Before installing a Sun Blade server module, you must have thorough knowledge of the topics discussed in these documents:

- *Sun Blade 8000 Series Product Notes*
- *Sun Blade 8000 Series Installation Guide*
- *Sun Blade 8000 Series Online Information System*
- *Sun Integrated Lights Out Manager 2.0 User's Guide*

Refer to “[Related Documentation](#)” on [page vii](#) for more information.

Using UNIX Commands

This document might not contain information about basic UNIX® commands and procedures such as copying files, listing directories, 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. % You have mail.
AaBbCc123	What you type, when contrasted with on-screen computer output	% su 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 documentation listed in the following table are available online at:

- For the Sun Blade 8000 Modular System:
<http://docs.sun.com/app/docs/blade8000>
- For the Sun Blade 8000 P Modular System:
<http://docs.sun.com/app/docs/coll/blade8000p>

Note – The last two digits of the documentation part number identifies the latest version of the product documentation that is available for download (or viewing online). For example: 819-xxxx-XX.

Additional Sun documentation is available at:

<http://docs.sun.com>

Title	Content	Part Number	Format	Content Availability
<i>Sun Blade 8000 Series Product Notes</i>	Late-breaking information about system.	819-5651	PDF HTML	Online
<i>Sun Blade 8000 Series Site Planning Guide</i>	Site planning information for new system deployments.	819-5648	PDF HTML	Online

Title	Content	Part Number	Format	Content Availability
<i>Sun Blade 8000 Series Installation Guide</i>	Initial installation information for new systems. It includes: <ul style="list-style-type: none"> • Rackmounting • Hardware setup • Cabling attachment • ILOM management network configuration • OS installations 	819-5647	PDF Printed	Online Shipped when printed version is ordered.
<i>Sun Installation Assistant for Windows and Linux</i>	Provides information about: <ul style="list-style-type: none"> • Supported operating systems • Identification of system drivers installed by SIA • Using SIA to install operating systems on a Sun Blade 8000 Series Server Module 	820-3357	PDF	Online
<i>Sun Blade 8000 Series Online Information System (OIS)</i>	Provides post installation information about the system that includes: <ul style="list-style-type: none"> • ILOM system management operations and configuration • Servicing the system • Troubleshooting the system <p>Note - To run the online system, click frames.html after unzipping the file.</p>	819-5846	Compressed .zip file	Download

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- *Sun Blade X8440 Server Module Installation Guide*, 820-3618-11

Sun Blade X8440 Hardware and Software Features

This chapter includes general information to help you become familiar with the hardware and software features of the Sun Blade X8440 Server Module.

This chapter contains the following topics:

- [“Hardware Overview” on page 2](#)
- [“Environmental Requirements” on page 3](#)
- [“Server Module Indicators and Buttons” on page 4](#)
- [“Supported Operating Systems” on page 5](#)
- [“Managing the Sun Blade Server Module With ILOM” on page 6](#)

Hardware Overview

The Sun Blade X8440 is one of four types of server modules that you can install in a Sun Blade 8000 or 8000 P Chassis. A summary of the hardware configurations, options, and standard components available for the Sun Blade X8440 Server Module follows.

TABLE 1-1 Sun Blade Server Module Hardware Overview

<ul style="list-style-type: none">• Server Module CPU Configurations	<p>The following CPU configurations are available on the X8440 Server Module:</p> <ul style="list-style-type: none">• Dual-core two socket CPU configuration<ul style="list-style-type: none">- CPU: 2x Opteron, 8222, 3.0-GHz, dual-core, 64-bit- Memory 8-GB - 4x2 GB DDR2 DIMMs, 2 per socket- Hard Disk Drive: Support for up to two drives per blade• Dual-core four socket CPU configuration<ul style="list-style-type: none">- CPU: 4x Opteron, 8222, 3.0-GHz, dual-core, 64-bit- Memory 16-GB - 8x2GB DDR2 DIMMs, 2 per socket- Hard Disk Drive: Support for up to two drives per blade
<ul style="list-style-type: none">• Server Module Memory Kits	<p>The following memory kits, hard disk drives, and CPUs are offered as options on the Sun Blade X8440 Server Module</p> <p><i>X8440 Memory Option Kits</i></p> <ul style="list-style-type: none">• 2GB DDR2-667 Memory Kit - 1GB DIMM x2• 4GB DDR2-667 Memory Kit - 2GB DIMM x2• 8GB DDR2-667 Memory Kit - 4GB DIMM x2 <p>Note - All DIMMs are configured in pairs to maximize performance. For more information about DIMM configuration rules, see “Memory Module Configuration and Population Order” on page 11.</p>

TABLE 1-1 Sun Blade Server Module Hardware Overview (Continued)

<ul style="list-style-type: none"> • Server Module HDDs 	<p>The following hard disk drives (HDDs) are available on the X8440 Server Module:</p> <ul style="list-style-type: none"> • 73-GB (10k RPM) SFF SAS Drive, hot-pluggable, up to two per server. • 73-GB (15k RPM) SFF SAS Drive, hot-pluggable, up to two per server. • 80-GB (5k RPM) SFF SATA Drive, hot-pluggable, up to two per server • 146GB (10k RPM) SFF SAS Drive, hot-pluggable, up to two per server
<ul style="list-style-type: none"> • Standard Components 	<ul style="list-style-type: none"> • Service Processor (SP). One SP per server module. SP provides remote KVMs functionality, IPMI baseboard management controller (BMC) functionality, and interfaces to the chassis monitoring module (CMM). The SPs and CMM work together to form a complete server module and chassis management system. • Flexible I/O Network Connectivity via Chassis Network Express Modules (NEMs) or PCIe ExpressModules (EMs). • Indicators and Buttons. The Sun Blade server module includes standard service indicator LEDs and buttons. For more information, see “Server Module Indicators and Buttons” on page 4. • Front Panel I/O Ports. The Sun Blade server module front panel provides one VGA port, two USB ports, and one serial port. For more information, see “Attach Local Devices to Server Module” on page 25.
Physical Specification	The Sun Blade X8440 Merver Module is approximately 19.5 x 18.5 x 1.87 inches (HxDxW) in a 1U form factor. The server module plugs in to a Sun Blade Modular System, or <i>chassis</i> , which provides power to each module, as well as cooling through fans.

Environmental Requirements

TABLE 1-2 includes the environmental requirements that are specific for all Sun Blade server modules.

TABLE 1-2 Sun Blade Server Module Environmental Requirements

Condition	Requirement
Operating temperature	5°C to 35°C noncondensing
Nonoperating temperature	-40°C to 65°C
Operating humidity	10% to 90% noncondensing (27°C max. wet bulb)
Nonoperating humidity	93% noncondensing (38°C max. wet bulb)
Operating altitude	3048 meters at 35°C
Nonoperating altitude	12,000 meters

Server Module Indicators and Buttons

The following figure illustrates the front panel features of the server module.

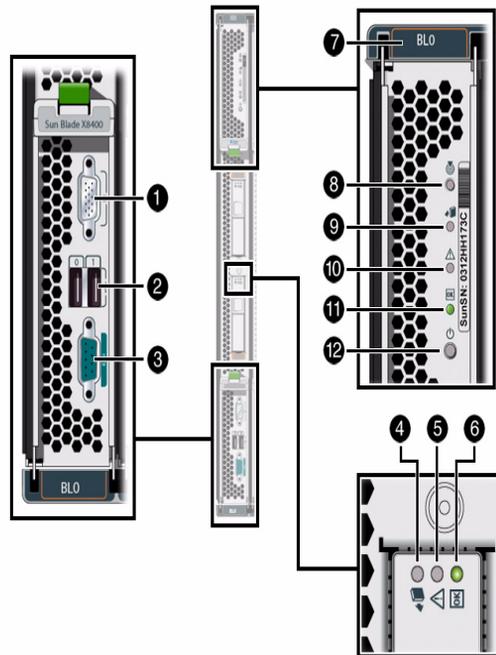


Figure Legend Server Module Indicators and Buttons

- 1 VGA video port
- 2 USB ports (2)
- 3 Serial port
- 4 Disk Drive - Ready to Remove LED
- 5 Disk Drive - Service Action Required LED
- 6 Disk Drive - OK/Activity LED
- 7 Server Module Slot Number
- 8 Server Module Locator Button
- 9 Server Module Ready-to-Remove LED
- 10 Server Module Service Action Required LED
- 11 Server Module OK LED
- 12 Server Module Power Button

Supported Operating Systems

The following operating systems are supported on the Sun Blade X8440 Server Module:

- Solaris 10 08/07 or later
- Red Hat Enterprise Advanced Server v.4 Update 3 or later for x86 (32-bit and 64-bit)
- Red Hat Enterprise Advanced Server Linux 5 or later for x86 (32-bit and 64-bit)
- SUSE Linux Enterprise Server 9 with SP3 or later for x86 (64-bit)
- SUSE Linux Enterprise Server 10 or later for x86 (64-bit)
- Microsoft Windows Server 2003 Enterprise Edition (SP1, SP2, or R2) (32-bit and 64-bit)
- Microsoft Windows Server 2003 Standard Edition (SP1, SP2, or R2) (32-bit and 64-bit)
- Microsoft Windows Server 2008 Standard Edition (32-bit and 64-bit)
- Microsoft Windows Server 2008 Enterprise Edition (32-bit and 64-bit)
- VMware ESX Server 3.0.1 or later

Factory-Installed Operating Systems

For your convenience, you can order the hard disk drives for the Sun Blade server modules with factory-installed operating system software. This means that the software for the operating system is completely installed on the HDD, including the latest operating system device drivers. However, some setup actions must be performed prior to using the operating system. For more information about performing these initial setup actions, see one of the following chapters in the *Sun Blade 8000 Series Installation Guide*:

- Configure Factory-Installed Solaris 10 Operating System
- Configure Factory-Installed Microsoft Windows Server 2003 Operating System

For additional information about factory-installed software, refer to this site:

<http://www.sun.com/software/preinstall>

Managing the Sun Blade Server Module With ILOM

Sun Integrated Lights Out Manager (ILOM) is system management firmware that you can use to monitor, manage, and configure the Sun Blade server module. The ILOM firmware is preinstalled on the service processor (SP) of each Sun Blade server module and initializes as soon as you apply power to the system. You can access ILOM through several interfaces, such as web browsers, a command-line interface (CLI), a Simple Network Management Protocol (SNMP) interface, and an Intelligent Platform Management Interface (IPMI). ILOM will continue to run regardless of the state of the host operating system, making it a “lights-out” management system.

For information about configuring and using ILOM, refer to the *Sun Blade 8000 Series Online Information System* (OIS). You can download this online information system from: <http://docs.sun.com/app/docs/coll/blade8000>

Service Processor

The *service processor* (SP) is the ILOM firmware. It has its own Internet Protocol (IP) address and media access control (MAC) address and is capable of operating regardless of the state of the other system hardware. For instance, the Sun Blade server module SP can operate whether the server module is fully operational, powered-down, or in standby mode.

Chassis Monitoring Module

The Sun Blade Modular System, or *chassis*, has its own service processor, called a *chassis monitoring module* (CMM). CMM ILOM is a modified version of ILOM firmware that is preinstalled for the SP.

Before installing the Sun Blade server module, you should have already installed and configured the CMM(s) in the Sun Blade 8000 Series Chassis. For more information, refer to the *Sun Blade 8000 Series Installation Guide* at:

<http://docs.sun.com/app/docs/doc/819-5647-15>

Note – The URL presented above might change as updated versions of the *Sun Blade 8000 Series Installation Guide* are posted to the Sun documentation site. To ensure you locate the latest version of this guide, search for the title or part number (819-5647) of the guide on the Sun documentation site (<https://docs.sun.com>).

ILOM on the Server Module SP and CMM

ILOM supports two ways to manage a system: using the CMM or using the server module's SP directly.

- **Using the CMM SP** – Managing the system from the CMM enables you to set up and manage components throughout the entire chassis system, as well as to manage an individual server module SP.
- **Using the Server Module SP** – Managing the SP on a Sun Blade server module enables you to manage operations on an individual server module. This approach might be useful when troubleshooting a specific service processor, controlling access to a specific server module, or installing operating system software to a specific server module.

For detailed information about performing ILOM system management tasks, refer to the ILOM section in the *Sun Blade 8000 Series Online Information System (OIS)*. You can download the *Sun Blade 8000 Series OIS* at:

<http://docs.sun.com/app/docs/coll/blade8000>

Server Module Installation and Power-On

After you have familiarized yourself with the features and components of the Sun Blade X8440 Server Module, use the instructions in this chapter to install the server into the Sun Blade 8000 or 8000 P Chassis.

This chapter contains the following topics:

- [“System Chassis Prerequisites” on page 10](#)
- [“Handling the Server Module” on page 10](#)
- [“Add Memory Modules to the Server Module” on page 11](#)
- [“Add Hard Disk Drives to the Server Module” on page 15](#)
- [“Install the Server Module Into the Chassis” on page 20](#)
- [“Sun Blade Server Module Power-On Policy” on page 22](#)
- [“Apply Main Power to Server Module SP Using the Power Button” on page 24](#)
- [“Verify Server Module Power State” on page 23](#)
- [“Attach Local Devices to Server Module” on page 25](#)

System Chassis Prerequisites

The information in this chapter assumes the following:

- The following chassis components have been installed into the Sun Blade 8000 or 8000 P Chassis.
 - Chassis Monitoring Module (CMM)
 - Network Express Modules (NEMs)
 - PCI Express ExpressModules (EMs) (*not applicable for 8000 P Chassis*)
- All required cabling to the chassis are attached.
- The system chassis is powered-on.

For information about installing chassis components, attaching cables, and powering on the chassis, see the *Sun Blade 8000 Series Installation Guide* at:

<http://docs.sun.com/app/docs/doc/819-5647-15>

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Handling the Server Module

Electronic equipment is susceptible to damage by static electricity. Use a grounded antistatic wriststrap, footstrap, or equivalent safety equipment to prevent electrostatic discharge (ESD) when you install the Sun Blade server module.



Caution – To protect electronic components from electrostatic damage, which can permanently disable the system or require repair by Sun service technicians, place components on an antistatic surface, such as an antistatic discharge mat, an antistatic bag, or a disposable antistatic mat. Wear an antistatic grounding strap connected to a metal surface on the chassis when you work on system components.

Add Memory Modules to the Server Module

The Sun Blade server modules are shipped with standard memory configurations. If you ordered additional memory, a kit for the additional memory is shipped separately.

About Memory Modules

The X8440 Server Modules use 1.8V error-correcting (ECC) high-capacity dual inline memory modules (DIMMs). The DIMMs are built with double-data-rate-two synchronous dynamic access memory (DDR2 SDRAM) that operates at a 667-MHz clock frequency.

The X8440 Server Module supports up to 32 DIMMs, eight per CPU in the following capacities:

- 1-Gbyte
- 2-Gbyte
- 4-Gbyte

The maximum memory capacity for the X8440 Server Module is 128 Gbytes (4 CPUs x 8 DIMMs per CPU x 4 GB DIMMs = 128 Gbytes total).

Memory Module Configuration and Population Order

[TABLE 2-1](#) identifies the recommended memory configuration and population rules.

TABLE 2-1 Memory Module Configuration and Population Rules

Server Module	Memory Module Configuration Rules
X8440	<ul style="list-style-type: none">• Each X8440 CPU supports up to 8 DIMMs• All X8440 DIMMs must be populated in pairs, for example:<ul style="list-style-type: none">• 2-DIMM = DIMM pair 3 (DIMM slots 6 and 7 installed)• 4-DIMM = DIMM pairs 2 and 3 (DIMM slots 4, 5, 6, and 7 installed).• 6-DIMM = DIMM pairs 1, 2, and 3 (DIMM slots 2, 3, 4, 5, 6, and 7 installed)• 8-DIMM = DIMM pairs 0, 1, 2 and 3 (DIMM slots 0, 1, 2, 3, 4, 5, 6, and 7 installed)• If the X8440 CPU has only a single DIMM pair, then you must install that single DIMM pair into the <i>farthest</i> slot locations from the respective CPU, which are slots 6 and 7.• All X8440 DIMM pairs must be identical with respect to manufacturer, size and speed.

For further installation instructions, see [“Memory Module Installation” on page 12](#).

▼ Memory Module Installation

Before installing additional memory on the server module, you will need to gather the following items:

- Antistatic wrist strap and mat
- Sun Blade server module
- Memory kit

Follow these steps to add memory modules to a server module.

1. Locate and unpack the server module from its antistatic packaging.



Caution – Do not use the ejector latches to carry the server module. The ejector latches should only be used to seat the server module in the chassis. They are not designed to support the weight of the server module.

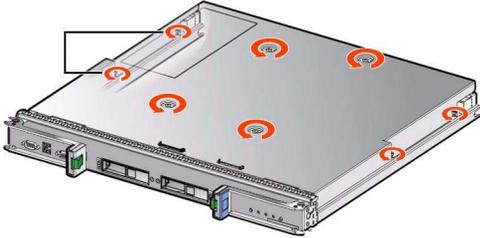
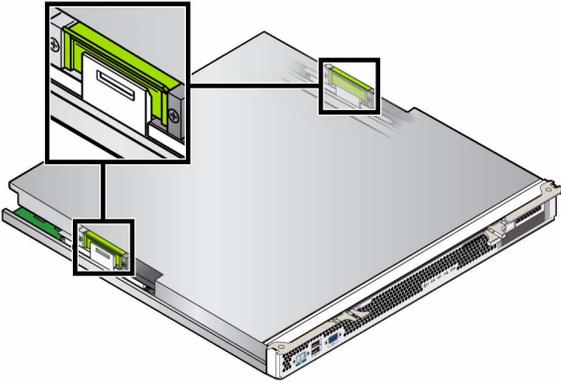
2. Remove the server module cover by performing the following steps:

a. Place the server module on a stable, antistatic work surface.

For example, place the server module on top of an antistatic mat; or, place the server module on top of the server module’s plastic packaging.

b. Remove the blade cover as follows:

Note – Some X8440 Server Modules are shipped with tool-less covers. If the X8440 Server Module does not have screws holding the cover in place, refer to the instructions for removing a tool-less cover.

Type of Cover	Description
Screws holding cover in place	<p data-bbox="559 395 1296 453">Using a Phillips screwdriver, remove the four middle cover screws and fully loosen the four captive screws.</p> 
Tool-less cover	<p data-bbox="559 847 1296 904">Locate the green release levers. Then, using your fingers push the levers inward to release the cover.</p> 

c. Slide the cover up until the cover clears the tabs at the front of the server module, then remove the cover.

3. Locate and attach the antistatic wrist strap.

Follow instructions provided with the wrist strap.

4. Locate and unpack the new DIMM from its antistatic container.
5. Ensure that the DIMM ejector levers are open (angled outward) then align the DIMM notch to the DIMM connector key.
6. Using both thumbs, press the DIMM straight down into the DIMM connector slot until both ejector levers close, locking the DIMM in the DIMM connector slot.

Note – The DIMMs must be inserted evenly, straight down into the DIMM connector slot, until the ejector levers lock into place.

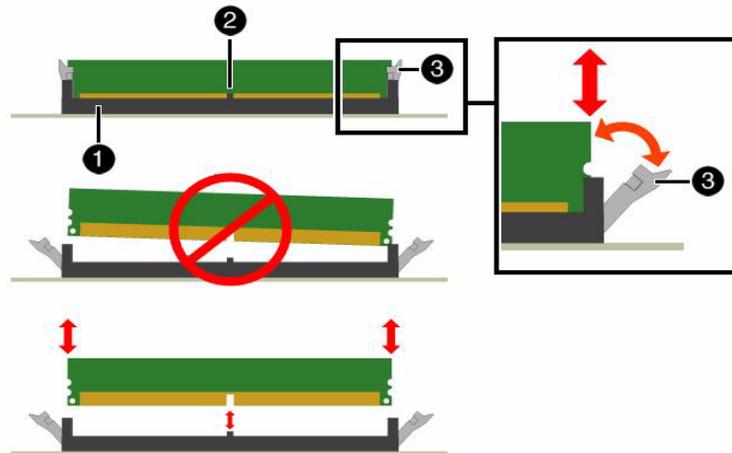


Figure Legend

1. DIMM Connector Slot
2. DIMM Connector Key
3. DIMM Lever

7. Verify that the DIMM ejector levers are upright, seated, and tight. Press on the ejector levers to ensure that they are engaged properly.
8. To install the second DIMM, repeat Steps 4 through 7.
9. To reinstall the server module cover, slide the cover under the tabs at the front of the server module, then reinstall and tighten all screws.

Add Hard Disk Drives to the Server Module

The Sun Blade server module is shipped without hard disk drives (HDDs). As an option, you can order and install up to two HDDs per server module. HDDs are easily installed in the HDD bays (labeled HDD0-1) located on the front panel of the server module (see figure below).



Figure Legend HDD Labels

-
- | | |
|---|-------------|
| 1 | HDD 0 Label |
| 2 | HDD 1 Label |
-

Note – Installation of a hard disk drive is not necessary if you are configuring the server module to boot from an FC SAN device.

Tools and Supplies Needed

Before installing a hard disk into a server module, you will need to gather the following items:

- Installed Sun Blade server module
- Supported hard disk drive (HDD)
 - 73-Gbyte (10K RPM) SAS Drive
 - 73-Gbyte (15K RPM) SAS Drive

- 146-Gbyte SAS Drive
- 80-Gbyte SFF SATA Drive

The server module is shipped with two HDD filler panels in slots labeled HDD0 and HDD1.

Use the following procedures to remove the HDD filler panel from the server module and to install the HDD into the vacant HDD slot of the server module.



Caution – If you are not installing a hard disk drive, do not remove the HDD filler panel from the server module. The HDD filler panels are required to meet FCC standards for EMI.



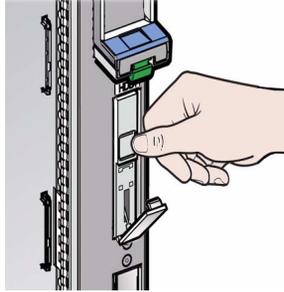
Caution – The following HDD procedures describe a new installation of a server module in a powered-down chassis. The procedure is different if you are adding or replacing a server module using a hot-plug operation. For more information about server module hot-plug operations, see the service and hot-plug component topics in the *Sun Blade 8000 Series Online Information System* at: <http://docs.sun.com/app/docs/coll/blade8000>

▼ Remove HDD Filler Panel

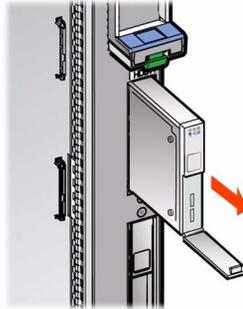
1. **Unpack the server module (box labeled Sun Blade).**
2. **In the front of the server module, locate the HDD filler panel that you want to remove. Note that the HDD filler panel ejector lever is in the closed position.**



3. Push the HDD ejector lever button to unlatch the lever, then tilt the lever down to release the filler panel.



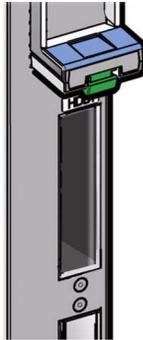
4. Holding the opened ejector lever, pull the ejector lever toward you and slide the filler panel from the HDD slot.



▼ Install HDD Into the Server Module

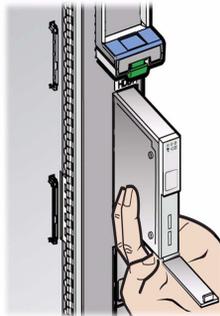
1. Install the Sun Blade server module into a vacant chassis slot.
For details, see [“Install the Server Module Into the Chassis”](#) on page 20.
2. Locate and unpack the new HDD from its antistatic container.

3. Locate the vacant HDD slot on the server module.

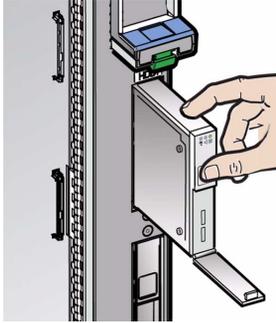


Note – If you are installing a single configuration HDD that has a factory-installed version of the Solaris 10 Operating System, you must install that factory-installed Solaris HDD in Slot 0 (labeled HDD0). All factory-installed Solaris HDDs are preconfigured as disk 0.

4. On the new HDD, push the disk drive ejector lever button on the front to unlatch the lever, then tilt down the lever.
5. Align the HDD with the vacant HDD slot in the server module. Ensure that the ejector lever is completely open.

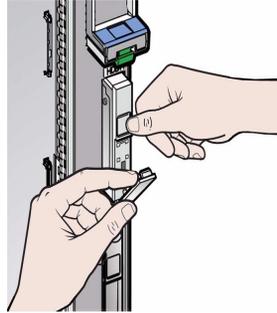


- Slide the new HDD into the vacant HDD slot by pressing on the middle of the HDD faceplate with your thumb or finger.



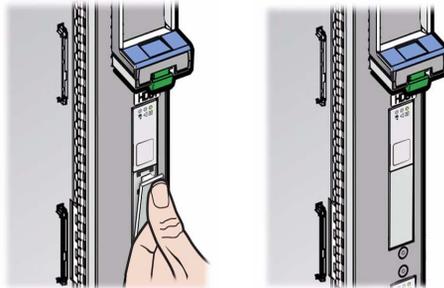
- Ensure that the HDD ejector lever is two-thirds open (approximately 60 degrees with respect to the faceplate) when sliding in the HDD into the slot.

Do not slide the HDD in all the way. Leave the HDD out approximately 0.25 to 0.50 inch from the opening.



- Using your thumb or finger, press on the middle of the HDD front faceplate until the ejector lever engages with the server module.

Pivot the ejector lever until it clicks into place and the lever becomes flush with the HDD faceplate.



- To install a second hard disk drive, repeat Steps 1 through 8.

Install the Server Module Into the Chassis

The Sun Blade 8000 Series Chassis supports up to 10 Sun Blade server modules. The chassis arrives with nine filler panels installed in each server module slot labeled BL1-9.

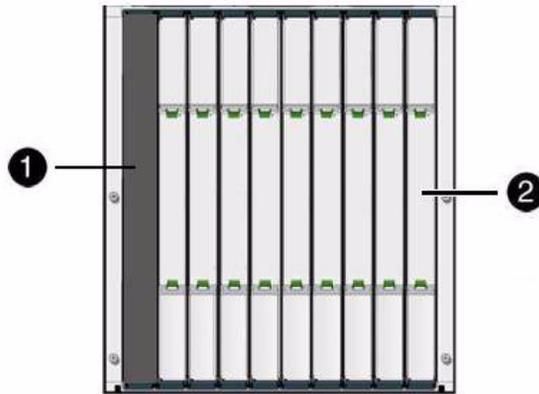


Figure Legend

1. Vacant server module slot labeled BL0
2. Nine server module filler panels in slots labeled BL1 to BL9



Caution – If you are not installing a server module into a slot, do not remove the server module filler panel from the slot. The server module filler panel is required to meet FCC standards for EMI.

Use the following procedures to remove a filler panel from a slot and to install a server module into the corresponding vacant slot.



Caution – The following procedure is for new installations in a powered-off chassis. If you want to install or remove a server module using a hot-plug operation, see the *Service and Upgrades* topics in the *Sun Blade 8000 Series Online Information System* at: <http://docs.sun.com/app/docs/coll/blade8000>

▼ Remove Server Module Filler Panel

1. In the front of the chassis, locate the server module filler panel to be removed.
2. To unlatch the server module filler panel from the chassis, press the button on the ejector lever handles at the top and bottom; then pivot out and raise the top ejector lever and lower the bottom ejector lever.
3. Hold the ejector levers and pull the filler panel out of the chassis slot.

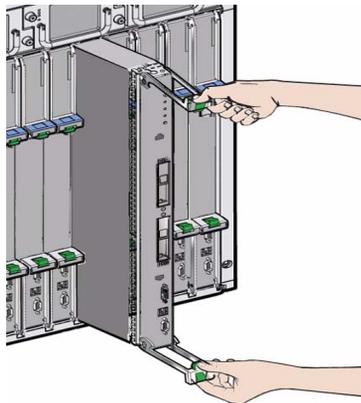
▼ Install Server Module Into Chassis Slot

1. Unpack the server module (box labeled Sun Blade), then locate the vacant server module slot in the front of the chassis.



Caution – Do not use the ejector levers to carry the server module. The ejector levers should only be used to seat the server module in the chassis. The levers are not designed to support the weight of the server module.

2. **Align the server module with the vacant server module slot. Ensure that the:**
 - Server module indicator lights on the front panel are facing toward you.
 - Video, keyboard, and mouse connectors are at the bottom.
 - Server module ejector levers are fully opened.



3. **Slide the server module into the vacant server module chassis slot.**

As the ejectors make contact with the chassis, the bottom lever will start to rise, and the top lever will start to lower.

4. Simultaneously close the ejector levers at the top and bottom of the server module (lower the top ejector and raise the bottom ejector) until the levers lock in place against the front of the server module.

Sun Blade Server Module Power-On Policy

The server module power policy in ILOM determines the default power state of the server module SP at boot time, for instance:

- **Initial server module power-on (out-of-box).** When a server module powers on for the first time in a Sun Blade system chassis it automatically receives standby power. This power state indicates that the server module SP is active but the server module host is powered OFF.

Note that main power to the host is required to fully operate the server. You can apply main power to the server module (at initial setup) via the Power button on the front panel of the server module. For more information, see “[Apply Main Power to Server Module SP Using the Power Button](#)” on page 24.

- **Subsequent server module power-ons.** By default, the blade SP power-on policy in ILOM is set to automatically return to its previous power state. For instance:
 - If main power was the last operating power state, the server module would automatically receive main power when inserted into a powered-on chassis.
 - If standby power was the last operating power state, the server module would automatically receive standby power when inserted into a powered-on chassis.

For more information about the blade SP power-on policy, see the following topics in the *Sun Blade 8000 Series Online Information System (OIS)*:

- Blade SP Power-On Policy
- Change Blade Power-On Policy

You can download the *Sun Blade 8000 Series Online Information System* at:

<http://docs.sun.com/app/docs/coll/blade8000>

▼ Verify Server Module Power State

1. Verify that the system chassis is powered on.

A solid green light should be visible from the chassis OK power LED on the front and rear of the chassis.

If the chassis has not been powered on, see [Verify System Chassis Is Powered On](#) in the *Sun Blade 8000 Series Installation Guide* for more information.

2. Determine whether the Sun Blade server module is receiving standby power or main power:

- **Server Module SP - Standby Power.** The OK power LED on the server module front panel illuminates a standby blink (0.1 second on, 2.9 seconds off). This OK power LED state indicates that the server module SP is active but the server module host is powered OFF.

You can apply main power to the server module host via the server module Power button (see [“Apply Main Power to Server Module SP Using the Power Button” on page 24](#)) or ILOM remote power controls.

Note – If the server module host does not power on, you should verify that the CMM is powered-on then reset the blade by pressing the Power button on the front panel of the blade.

- **Server Module Host - Main Power.** The OK power LED on the server module front panel illuminates a green solid light. This OK power LED state indicates the server module SP and host are both powered ON.
-

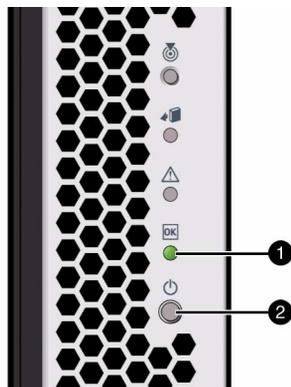


Figure Legend

- 1. Server module OK LED
 - 2. Server module Power button
-

▼ Apply Main Power to Server Module SP Using the Power Button

1. Verify that standby power is on.

In standby power mode, the OK power LED on the front panel of the server module blinks (0.1 second on, 2.9 seconds off).

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

When main power is applied to the host, the Power/OK LED above the Power button displays a solid green light.

Troubleshooting the Server Module Power-On State

If the server module is not receiving power, consider the following:

- The server module SP power policy in ILOM determines whether or not main power is applied to the blade SP at boot time. By default (out of the box), standby power is automatically applied to the server module SP. For more information about the server module SP power policy options, see the *Blade SP Power Policy* topic in the *Sun Blade 8000 Series Online Information System* at: <http://docs.sun.com/app/docs/coll/blade8000>
- The server module SP default power-on state prior to ILOM 1.1.5 is controlled in the BIOS. The earlier server module BIOS firmware power-on state was shipped enabled causing the server module to automatically power on with main power upon receiving power from the chassis.

Note – Server module and EM connections are powered on and off as a pair. When power is disabled on a server module, it is also disabled on its associated EM (if an EM is configured). EMs are not supported in the Sun Blade 8000 P chassis.

Note – You can power server modules on or off from ILOM as soon as network connectivity to the system is established. To power a server module on or off from ILOM, connect to the server module IP address and log in to ILOM, then select **Remote Power -> Remote Power Control** for the server module.

Attach Local Devices to Server Module

Each server module provides one VGA port, two USB ports, and one serial port. These local server module ports enable direct communication with the server module. For instance, the VGA and USB ports enable you to communicate with the server module BIOS and OS. The server module serial port enables you to communicate with the server module service processor, and also the host serial COM1.

Direct management of an individual server is through the embedded server module service processor, Sun Integrated Lights Out Manager (ILOM). Access to the server module service processor is via the local serial port or the chassis monitoring module (CMM) management network. For more information about server module-level or chassis-level management, see the *Sun Blade 8000 Series Online Information System* at: <http://docs.sun.com/app/docs/coll/blade8000>

▼ Attach Local Serial Console to the Server Module

Follow these steps to attach a local serial console to a Sun Blade server module.

1. Locate the serial console cable.
2. Attach the serial console cable to the DB-9 SERIAL MGT port on the front panel of the Sun Blade server module.

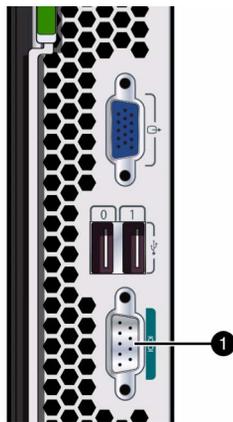


Figure Legend

1. Serial management port on front panel of server module

▼ Attach Local VGA Monitor to the Server Module

Prerequisite

- The VGA resolution is fixed to 1024x768x60 Hz. Ensure that your VGA monitor supports this resolution prior to connecting.

Follow these steps to attach a local VGA monitor to a Sun Blade server module.

1. **Locate the VGA monitor cable.**
2. **Attach the VGA monitor cable to the VGA port on the front panel of the Sun Blade server module.**

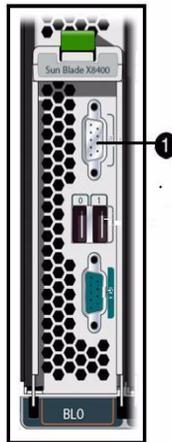


Figure Legend

-
- | | |
|---|--|
| 1 | VGA port on front panel of server module |
|---|--|
-

▼ Attach USB Devices to the Server Module

You can attach any of the following local USB devices to a Sun Blade server module:

- External media drives (CD/DVD and Floppy)
- Mouse (or other pointing device)
- Keyboard

Follow these steps to attach local USB devices to server module:

1. **Locate the USB device.**

2. Plug the USB device cable into one of the USB ports on the front panel of the Sun Blade server module.

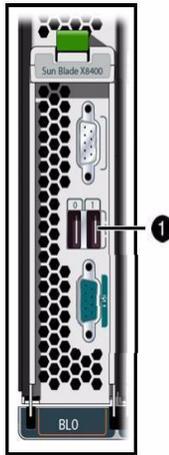


Figure Legend

-
- 1 Two USB ports on front panel of server module
-

What to Do Next

After installing the blade into the chassis and applying power to the blade, you should proceed to the next section that describes how to configure an IP address for the server module SP and how to establish initial communication with ILOM. For more information, see [Chapter 3 “Establish Communication With ILOM Server Module SP”](#) on page 29

Establish Communication With ILOM Server Module SP

You can establish communication with the ILOM server module SP through a local or remote console.

- **Local console.** Connect a serial console to the local serial management port on the server module or Sun Blade 8000 Series Chassis Monitoring Module (CMM). For instructions on attaching a local serial console to the server module, see [“Attach Local Serial Console to the Server Module”](#) on page 25.

or

- **Remote console.** Attach a local area Ethernet network cable to the network management port on the CMM. For more information about how to attach the CMM management network cable, see [“Attach CMM Management Network” Cable](#) in Chapter 4 of the *Sun Blade 8000 Series Installation Guide* (819-5647).

The type of connection you establish to ILOM determines which type of system management tasks you can perform. For example, to remotely access the full range of system management functionality in ILOM, you will require an Ethernet connection to the CMM and an IP assignment for the CMM and the server module SP.

Topics discussed in this chapter include:

- [“ILOM Connection Setup Worksheet”](#) on page 30
- [“Assign IP Addresses to the Sun Server Module SP”](#) on page 32
- [“Edit IP Address Assignments Using an Ethernet Management Connection”](#) on page 37
- [“Reset ILOM Root Account Password \(changeme\)”](#) on page 40

ILOM Connection Setup Worksheet

Use the following worksheet in [TABLE 3-1](#) to gather the information that you will need to establish communication with ILOM.

TABLE 3-1 Initial Setup Worksheet to Establish Communication With ILOM

Information for Setup	Requirement	Description
Local Serial Console Connection	Optional - <i>if using DHCP to assign initial IP address</i> Mandatory - <i>if DHCP server is not utilized to assign initial IP address</i>	If you are not utilizing a DHCP server to assign IP addresses to the server SP or CMM, you must establish a local serial console connection to ILOM via the serial management port on the server or Chassis Monitoring Module (CMM). For more information about how to attach a serial console to a server, see “Attach Local Serial Console to the Server Module” on page 25 .
Remote Ethernet Management Connection	Optional	To access ILOM’s full range of management functionality, you must connect your local area network to the network management port of on the CMM. For more information, see “Attach CMM Network Management Cable” in the <i>Sun Blade 8000 Series Installation Guide</i> .

TABLE 3-1 Initial Setup Worksheet to Establish Communication With ILOM (Continued)

Information for Setup	Requirement	Description
SP IP Assignment	Mandatory	<p>Decide whether to assign DHCP or static IP address(es) to the server SP(s). All remote system management communication with ILOM is through the server SP or CMM management network.</p> <p>For information about how to assign an IP address, see the following topics:</p> <ul style="list-style-type: none"> • “Assign a Static IP Address to Server SP Using a Serial Connection” on page 34 • “Assign DHCP IP Addresses Using an Ethernet Management Connection” on page 33
ILOM Interface	Mandatory	<p>When establishing (or modifying) an IP address on a server SP, you will use one of the following ILOM interfaces:</p> <ul style="list-style-type: none"> • Command-line interface (CLI) - use to establish the initial IP address. If an IP address has not been assigned to the server SP or CMM, you can connect to ILOM to assign the IP address via a local serial console. • Web interface - use to edit an existing IP address. If an IP address has been assigned to the server SP or CMM and a LAN connection is established to the MGT port, you can connect to ILOM to edit the existing IP address(es) assigned via the web interface. <p>For more information about ILOM interfaces, consult the <i>Sun Blade 8000 Series Online Information System</i>.</p>
ILOM Preconfigured Admin Account	Mandatory (first time use)	<p>Any user with a valid user account can access ILOM. The first time you access ILOM, you will need to use the preconfigured ILOM Administrator account.</p> <p>The preconfigured Administrator account, known as <code>root</code>, cannot be deleted or changed, other than resetting its password (<code>changeme</code>). This account offers built-in administrative privileges (read and write access) to all ILOM functions, features, and commands.</p> <p>The first time you access ILOM, at the CMM level or server module level, you will need to log in as <code>root</code> with the default password <code>changeme</code>. After you have logged in to ILOM and established network connectivity to the system, you should consider resetting the password (<code>changeme</code>) associated with the ILOM <code>root</code> account. To prevent your system from unauthorized access, reset this password on each server module (and CMM) installed in the system chassis. For more information about resetting the ILOM <code>root</code> account password, see “Reset ILOM Root Account Password (changeme)” on page 40.</p>

Assign IP Addresses to the Sun Server Module SP

Use the following procedures to assign IP addresses to the server module SP.

- [“Assign DHCP IP Addresses Using an Ethernet Management Connection” on page 33](#)
- [“Assign a Static IP Address to Server SP Using a Serial Connection” on page 34](#)

Prerequisites

Prior to assigning IP addresses, you should have completed the following installation tasks:

- Serial connection requirements. If you are assigning an IP address via the serial connection of the server module, you should have:
 - Established console access to the server module through a serial connection. For details, see [“Attach Local Devices to Server Module” on page 25](#) or see [“Attach Serial Console to Chassis Monitoring Module”](#) in the *Sun Blade 8000 Series Installation Guide*.
 - Configured the following serial settings:
 - 8N1: eight data bits, no parity, one stop bit
 - 9600 baud
 - Disable hardware flow control (CTS/RTS)
 - Disable software flow control (XON/XOFF)
- Ethernet Connection Requirements. If you are assigning an IP via the management port on the CMM, you should have:
 - Attached your local network cable to the management port of the CMM.
 - Configured the CMM with an IP address. For information about assigning an IP address to a CMM, see Chapter 5 in the *Sun Blade 8000 Series Installation Guide* (819-5647).
- If you intend to have DHCP IP addresses assigned, you need to have an established DHCP server on the same local network as the Sun Blade 8000 Series system. Setting up a DHCP server is out of the scope of this guide; see the documentation supplied with the DHCP server software.

▼ Assign DHCP IP Addresses Using an Ethernet Management Connection

Follow these instructions when using DHCP to assign IP addresses.

1. **Verify that your DHCP server is configured to accept new media access control (MAC) addresses.**
Consult the documentation supplied with your DHCP server software.
2. **Verify that an Ethernet cable is plugged into the Ethernet port (NET MGT) port on the CMM.**

Note – Provided that ILOM was not configured previously with a static IP address, ILOM automatically broadcasts a DHCPDISCOVER packet with the ID of its SP network interface(s) MAC address(es). If ILOM was previously configured with a static IP address, you must disable the static IP address setting on the Network Settings tab. For more information about editing IP address settings, see [“Edit Existing IP Addresses in ILOM Using the Web Interface” on page 37](#) or [“Edit Existing IP Address\(es\) in ILOM Using the CLI” on page 38](#).

3. **The DHCP server on your network returns the DHCP OFFER packet containing the IP address and other information. The service processor then manages its “lease” of IP addresses assigned by the DHCP server.**
4. **Use one of the following methods to obtain the DHCP IP address(es) assigned to the SP network interface(s):**
 - **ILOM - CMM using a serial connection**

Using a serial console attached to the rear panel of the CMM, log in to ILOM as the Administrator. For example, at the Login prompt, you could type the preconfigured Administrator user name `root` and its default password `changeme`, then press Enter.

- To set the working directory for the active CMM, type:
`cd /CMM/network/CMM0`
- To view the active CMM IP address, type: `show`
- To drill-down and view the IP addresses of each server module, type:
`show /CH/BL0/SP/network`

Note – CMM0 represents the CMM installed in slot CMM0. BL0 represents the server module installed in slot BL0. To specify the target CMM or server module, you must specify the slot number in which the module is installed. Server module slots range from 0 to 9. CMM slots range from 0 to 1.

■ **ILOM - Server SP using a serial connection**

Using a serial console attached to the front panel of a server module, log in to ILOM as the Administrator. For example, at the Login prompt, you could type the preconfigured Administrator user name `root` and its default password `changeme`, then press Enter.

■ To view the server module SP IP address, type: **`show /SP/network`**

■ **DHCP server logs**

For more information consult the DHCP server documentation.

▼ Assign a Static IP Address to Server SP Using a Serial Connection

Follow these instructions when assigning a static IP address, using a serial connection, to a server module SP

1. Establish a local serial console connection to the server SP.

Attach a serial console to the serial port on the server or CMM. For more information, consult the user documentation provided with the Sun server platform.

2. Configure the terminal or terminal emulator software to the following serial parameters:

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

3. Press Enter to establish a connection between the serial console and the SP interface.

After a few moments, the ILOM Login prompt appears.

For example: `host_name Login:`

4. Log in to ILOM as an Administrator by entering an Administrator user name and password then press Enter.

Note – You can log in to ILOM using the preconfigured Administrator account shipped with ILOM: Login = `root`; Password = `changeme`.

The default prompt appears (->) and the system is ready for you to run the CLI commands to establish network settings.

5. Type the following command to set the working directory:

```
cd /SP/network
```

6. Use the following CLI commands to specify the IP, NetMask, and Gateway addresses. Note that the last command in the table below (`commitpending=true`) must be performed last.

Command	Description and Example
<pre>set pendingipaddress=</pre>	<p>Type this command followed by the static IP address that you want to assign to the server SP.</p> <p>For example, typing: <pre>set pendingipaddress=129.144.82.26</pre> would tell ILOM to assign 129.144.82.26 as the IP address to the server SP.</p>
<pre>set pendingipnetmask=</pre>	<p>Type this command followed by the static NetMask address that you want to assign to the server SP.</p> <p>For example, typing: <pre>set pendingipnetmask=255.255.255.0</pre> would tell ILOM to assign 255.255.255.0 as the NetMask address to the server SP.</p>
<pre>set pendingipgateway=</pre>	<p>Type this command followed by the static gateway address that you want to assign to the server SP.</p> <p>For example, typing: <pre>set pendingipgateway=129.144.82.254</pre> would tell ILOM to assign 129.144.82.254 as the Gateway address to the server SP.</p>
<pre>set pendingipdiscovery=</pre>	<p>Type the following command to tell ILOM that you want to set a static IP address on the server SP.</p> <pre>set pendingipdiscovery=static</pre>
<pre>set commitpending=true</pre>	<p>Type this command (<code>true</code>) to assign the network settings specified.</p> <p>For example: <pre>set pendingipaddress=129.144.82.26 set pendingipnetmask=255.255.255.0 set pendingipgateway=129.144.82.254 set pendingipdiscovery=static set commitpending=true</pre></p>

Typically, after assigning (or changing) an IP address the connection made to ILOM using the former IP address will time-out. Use the newly assigned IP address to connect to ILOM.

Edit IP Address Assignments Using an Ethernet Management Connection

Use the following procedures to manage service processor(s) IP assignment(s) over an Ethernet management connection:

- “Edit Existing IP Addresses in ILOM Using the Web Interface” on page 37
- “Edit Existing IP Address(es) in ILOM Using the CLI” on page 38

▼ Edit Existing IP Addresses in ILOM Using the Web Interface

Follow these instructions using the ILOM web interface to edit existing IP address(es) that have been assigned to a server SP or CMM.

1. **Using a browser-based client, type the IP address of the server SP or CMM in the browser address box then press Enter.**

The ILOM Login screen appears.

2. **In the ILOM Login screen, log in as an Administrator by entering an administrator user name and password.**

Tip – You can log in to ILOM using the preconfigured Administrator account shipped with ILOM: `root/change.me`.

The ILOM interface appears.

3. **In the right pane of the ILOM interface, click Configuration --> Network.**

The Network Settings page for the server or CMM appears.

4. **To edit IP addresses assigned to the SP interfaces, do the following:**

- a. **Select the radio button for Use The Following IP Address.**

- b. **Enter values for IP Address, Subnet Mask, and Gateway in the text boxes.**

Typically, after assigning (or changing) an IP address the connection made to ILOM using the former IP address will time out. Use the newly assigned IP address to connect to ILOM.

▼ Edit Existing IP Address(es) in ILOM Using the CLI

Follow these instructions when using the CLI to edit existing IP address(es) that have been assigned to a server SP or CMM.

1. Establish a local serial console connection or SSH connection to the server SP or CMM:

■ Local Serial Console Connection

Attach a serial console to the serial port on the server or CMM.

For more information, consult the user documentation provided with the Sun server platform.

or

■ Remote - Secure Shell (SSH) Connection

Establish a Secure Shell connection to the server SP or CMM.

From the remote client, establish a secure connection as root to the server SP or CMM. For example, you can establish a secure connection from a remote SSH client to the server SP by typing the following:

```
ssh -l root server_ip_address
```

```
Password: changeme
```

The default prompt appears (->) and the system is ready for you to run the CLI commands to establish network settings.

2. Type one of the following commands to set the SP working directory:

- For a chassis server server module server module: `cd /SP/network`
- For a chassis CMM in slot 0: `cd /CMM/network/CMM0`
- For a chassis CMM in slot 1: `cd /CMM/network/CMM1`

3. Type the `show` command to view the IP address(es) assigned, for example:

- For a chassis server module: `show /CH/BLn/SP network`
- For a chassis CMM in slot 0: `show /CMM/network/CMM0`
- For chassis CMM in slot 1: `show /CMM/network/CMM1`

4. Type the following commands to change the existing IP address assigned. Note that the last command in the table below (`commitpending=true`) must be performed last.

Command	Description and Example
<code>set pendingipaddress=</code>	<p>Type this command followed by the static IP address that you want to assign to the server SP or CMM.</p> <p>For example, typing: <code>set pendingipaddress=129.144.82.26</code> would tell ILOM to assign 129.144.82.26 as the IP address to the server SP.</p>
<code>set pendingipnetmask=</code>	<p>Type this command followed by the static NetMask address that you want to assign to the server SP or CMM.</p> <p>For example, typing: <code>set pendingipnetmask=255.255.255.0</code> would tell ILOM to assign 255.255.255.0 as the NetMask address to the server SP (or CMM).</p>
<code>set pendingipgateway=</code>	<p>Type this command followed by the static gateway address that you want to assign to the server SP or CMM.</p> <p>For example, typing: <code>set pendingipgateway=129.144.82.254</code> would tell ILOM to assign 129.144.82.254 as the Gateway address to the server SP (or CMM).</p>
<code>set pendingipdiscovery=</code>	<p>Type the following command to tell ILOM that you want to set a static IP address on the server SP or CMM.</p> <pre>set pendingipdiscovery=static</pre>
<code>set commitpending=true</code>	<p>Type this command (<code>true</code>) to assign the network settings specified.</p> <p>For example:</p> <pre>set pendingipaddress=129.144.82.26 set pendingipnetmask=255.255.255.0 set pendingipgateway=129.144.82.254 set pendingipdiscovery=static set commitpending=true</pre>

If you connected to ILOM through a remote SSH connection, the connection made to ILOM using the former IP address will time out. Use the newly assigned IP address to connect to ILOM.

Reset ILOM Root Account Password (changeme)

After establishing initial network connectivity to the CMM and blades, you should reset the ILOM `root` account password (`changeme`) to prevent unauthorized access to the system.

▼ Reset ILOM Root Account Password

To reset the `changeme` password, follow these steps.

1. **Access ILOM at the chassis level by typing the IP address for the CMM (or SP Server Module) in a web browser.**

The ILOM Login screen appears.

2. **In the ILOM Login screen, do the following:**

- a. **Type the user name (`root`) and password (`changeme`).**

- b. **Click Log in.**

The ILOM web interface appears.

3. **In the ILOM web interface, do the following:**

- To change the preconfigured Administrator password at the chassis level, click the CMM in the left navigation pane, then proceed to Step 4.
- To change the preconfigured Administrator password at the server module level, click the appropriate server module in the left navigation pane, then proceed to Step 4.

The tabbed pages for the CMM or server module appear at the top of the right pane in the ILOM user interface.

4. **In the ILOM user interface, click the tabs: User Management -> User Account.**

The User Account page appears.

5. **In the User Account page, select the radio button for `root` then click Edit.**

A security message appears. Click OK to continue and the User Account dialog box appears.

6. In the User Account dialog box, do the following:

- a. Select the box for Change.**
- b. In the Password text box, type the new password.**
- c. In the Confirm Password text box, type the new password again.**
- d. Click Save.**

The new password identified in Step 6b and Step 6c is activated for the root administrator account.

7. If necessary, repeat Step 2 through Step 6d to reset the password (changeme) on each CMM and server module installed in the system chassis.

For information about creating new user accounts and assigning a role (privileges) to a user account, see the *System Management* topics in the *Sun Blade 8000 Series Online Information System* (819-5846).

What to Do Next

After configuring an IP address for the Sun Blade server module and establishing a connection to the ILOM server module SP you should:

- **Install an operating system on the Sun Blade server module.** For details, see the following chapters in the *Sun Blade 8000 Series Installation Guide*.
 - Configure Factory-Installed Solaris 10 Operating System
 - Install Solaris 10
 - Install Windows Server 2003
 - Install Linux

You can download the *Sun Blade 8000 Series Installation Guide* at:

<http://docs.sun.com/app/docs/doc/819-5647-15>

- **Perform routine maintenance as required.** For more information, see the following topics in the *Sun Blade 8000 Series Online Information System*.

- ILOM
- Service and Upgrades
- BIOS Reference
- Troubleshooting

You can download the *Sun Blade 8000 Series Online Information System* at:

<http://docs.sun.com/app/docs/coll/blade8000>

