

Sun Blade 6000 Modular System

Installation Guide



Part No.: 820-0050-11
October 2010, Revision A

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Preface

The *Sun Blade 6000 Modular System Installation Guide* provides detailed information about installing and setting up the Sun Blade 6000 modular system for the first time.

This guide is written for system installers who are familiar with installing and configuring computer hardware.

This preface contains the following topics:

Description	Links
Locate documentation related to the Sun Fire 6000 modular system.	“Related Documentation” on page vii
Locate information on training, support, and additional documentation.	“Documentation, Support, and Training” on page ix
Learn how to submit feedback about this document.	“Documentation Feedback” on page ix

Related Documentation

The documents listed as online are available at:

<http://docs.sun.com/app/docs/prod/blade.6000mod#hic>

Application	Title	Part Number	Format	Location
Latest information	<i>Product Notes</i>	820-0055	PDF HTML	Online
Overview of modular system	<i>Sun Blade 6000 Modular System Overview</i>	820-7122	PDF HTML	Online
Safety and compliance information	<i>Safety and Compliance Guide</i>	820-0053	PDF HTML	Online
Site planning	<i>Site Planning Guide</i>	820-0426	PDF HTML	Online
Rack mounting	<i>Rack Alignment Template</i>	263-2755	PDF Printed	Online In rack kit
Installation	<i>Getting Started Guide</i>	820-0427	PDF	Online
	<i>Installation Guide</i>	820-0050	Printed	In ship kit
ILOM administration	<i>Integrated Lights-Out Manager CMM Administration Guide</i>	820-0052	PDF HTML	Online
Service	<i>Service Manual</i>	820-0051	PDF HTML	Online

The following table lists the documentation that is related to this product.

Application	Title	Part Number	Format	Location
Core ILOM administration	<i>ILOM 3.0 Documentation Collection</i>	n/a	PDF HTML	Online

Collection URL: <http://docs.sun.com/app/docs/coll/ilom3.0>

Documentation, Support, and Training

These web sites provide additional resources:

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

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Sun Blade 6000 Modular System Installation Overview

This chapter contains an overview of the Sun Blade 6000 modular system features, ship kit, and installation procedures.

This section covers topics listed in the following table.

Description	Links
Learn about components of the Sun Blade 6000 modular system	“About the System Shipped to You” on page 2
Learn about the contents of the chassis ship kit	“Contents of the Chassis Ship Kit” on page 3
View an overview of the chassis installation tasks.	“Overview of Installation Tasks” on page 4

About the System Shipped to You

The Sun Blade 6000 modular system offers both base features and a range of optional features. All Sun Blade 6000 modular system base features are assembled at the factory and shipped to you preinstalled within the system chassis. Optional modules can be either preinstalled or shipped separately for installation. A quick summary of the Sun Blade 6000 modular system base and optional features are discussed in the following table.

TABLE 1-1 Sun Blade 6000 Modular System Description

System Features	Description
Sun Blade 6000 modular chassis base features	<p>The Sun Blade 6000 modular chassis is a core component of the Sun Blade 6000 modular system. The Sun Blade 6000 chassis ships with the following base chassis features:</p> <ul style="list-style-type: none">• 10 slots for server or storage modules• 20 slots for PCIe ExpressModules• 2 slots for network express modules• 1 installed chassis monitoring module (CMM)• 2 power supplies• 6 redundant rear fan modules• Front and rear system indicator lights
Sun Blade 6000 chassis options	<p>You can order and install the following chassis options in the Sun Blade 6000 chassis:</p> <ul style="list-style-type: none">• PCIe ExpressModules (PCIe EMs). The Sun Blade 6000 chassis supports up to 20 installed PCIe EMs (two PCIe EMs per server module).• Network express modules (NEMs). The Sun Blade 6000 chassis supports up to two installed NEMs. <p>The Sun Blade 6000 product site has information on the latest supported NEMs and PCIe EMs.</p> <p>http://www.oracle.com/us/products/servers-storage/servers/blades/030803.htm</p>
Server module configurations	<p>You can install up to 10 individual server or storage modules in the Sun Blade 6000 chassis.</p>

Contents of the Chassis Ship Kit

No special tools are required to unpack the chassis. You will need typical unpacking tools such as a knife or box cutter.

If you will be using a lift to install the chassis, you can use the chassis packaging as a plinth to aid installation. See the rackmount instructions for more details.

The following table describes the contents of the chassis packaging.

TABLE 1-2 Contents of Chassis Ship Kit

Chassis Packaged Items	Description
Sun Blade 6000 chassis	The shipped Sun Blade 6000 chassis contains: <ul style="list-style-type: none">• 1 chassis management module (CMM)• 9 server module filler panels• 2 NEM filler panels or NEMs• 20 PCI EM filler panels or PCIe EMs• Service card attached to the side of the chassis• Dongle for server module I/O connection• RJ45 to DB9 serial adapter for dongle
Accessory kit	The accessory kit contains the following documentation: <ul style="list-style-type: none">• <i>Sun Blade 6000 Modular System Getting Started Guide</i>• Other safety and license documentation
Country kit	The country kit includes the Sun Blade 6000 modular system power cords (x4)
Rackmount kit	The rackmount kit contains: <ul style="list-style-type: none">• Rack alignment template• Rackmount shelf• Rack adapter plates• Screws needed for rack installation
Additional options	<ul style="list-style-type: none">• Additional NEMs (up to 2)• Additional PCIe EMs (up to 20)• Additional server or storage modules (up to 10)• <i>Sun Blade 6000 Modular System Installation Guide</i>

Overview of Installation Tasks

The following list describes the installation tasks:

Step	Description	Links/Documentation
1	Unpack the Sun Blade 6000 chassis and verify that you have received the required parts for mounting the chassis in a rack.	“Contents of the Chassis Ship Kit” on page 3
2	Remove the preinstalled modules, as necessary.	“Removing Chassis Components” on page 7
3	Install the Sun Blade 6000 chassis into the rack.	<i>Sun Blade 6000 Chassis Rack Alignment Template</i>
4	Install the modules and options into the system chassis.	“Installing Modules and Options” on page 13
5	Cable and power on the system.	“Attaching Cables and Devices to Modules and Powering On the System Chassis” on page 21
6	Configure the CMM to enable system management.	“Configuring the Sun Blade 6000 Modular System Management Network” on page 31

Mounting the Sun Blade 6000 Chassis in a Rack

This chapter describes how to install the Sun Blade 6000 modular system in a rack.

This section covers topics listed in the following table.

Description	Links
Prepare to install the chassis in a rack.	“Preparing to Mount the Chassis in a Rack” on page 6
Remove preinstalled chassis components if you are installing the chassis manually.	“Removing Chassis Components” on page 7
Install the chassis in a rack.	“Mounting the Chassis in a Rack” on page 13
Install components that you removed and additional system options.	“Installing Modules and Options” on page 13

Preparing to Mount the Chassis in a Rack

Before mounting the chassis in a rack, keep in mind the following:

- Make sure that you have reviewed the *Sun Blade 6000 and Sun Blade 6048 Modular System Site Planning Guide* to make sure that your site meets the requirements for installing the server.
- Make sure that you have the tools and equipment needed for installing the system. See [“Tools and Equipment Needed” on page 6](#).
- Take precautions to avoid electrostatic discharge. See [“Avoiding Electrostatic Discharge” on page 6](#).
- If you are installing the server manually (not using a mechanical lift), you will need to remove some of the preinstalled components in the chassis. See [“Removing Chassis Components” on page 7](#).
- If you are using a lift, you do not need to remove chassis components. See [“Mounting the Chassis in a Rack” on page 13](#).

Tools and Equipment Needed

You will need the following tools and supplies to install the base modules and options into chassis and mount the chassis into a rack:

- No. 2 Phillips screwdriver
- Rackmount kit
- Antistatic wrist strap
- Antistatic mat

Avoiding Electrostatic Discharge

Internal modules and options are electronic components that are extremely sensitive to static electricity. Ordinary amounts of static from your clothes or work environment can destroy components.

To prevent static damage whenever you are accessing any of the internal components, you must:

- Place static sensitive components such as hard drives, server modules, server module options, NEMs, and EMs on an antistatic surface. The following items can be used as an antistatic surface:
 - The bag used to ship the component.
 - Sun Electronic Discharge (ESD) mat, Sun part number 250-1088 (available through your Oracle sales representative).
- Use an antistatic wrist strap. Attach this wrist strap to your wrist and ground the other end of strap to the system chassis (sheet metal).

Removing Chassis Components

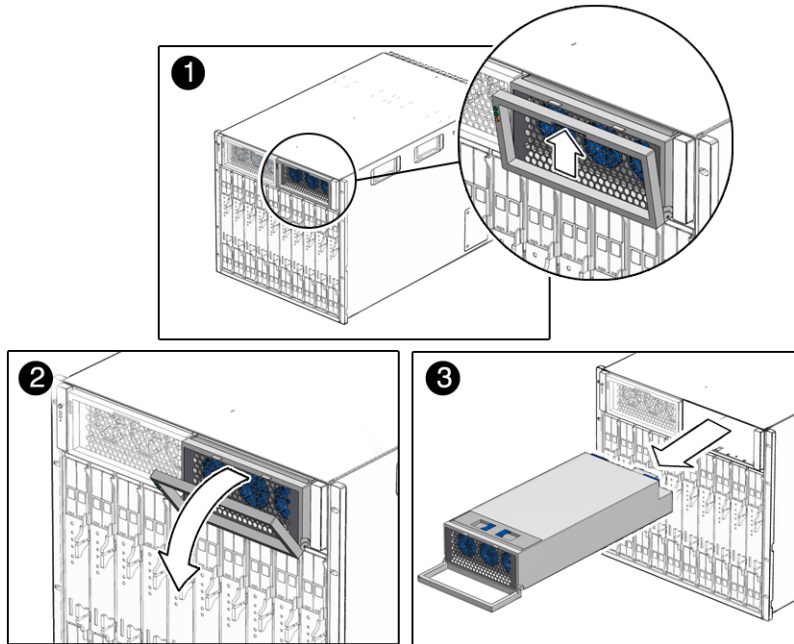
If you are mounting the chassis in a rack without a mechanical lift, refer to the following procedures to remove the preinstalled components in the chassis:

- [“How to Remove the Power Supply Modules” on page 8](#)
- [“How to Remove the System Fan Modules” on page 9](#)
- [“How to Remove the NEMs” on page 10](#)
- [“How to Remove the PCIe EMs” on page 11](#)
- [“How to Remove the CMM” on page 12](#)

▼ How to Remove the Power Supply Modules

FIGURE 2-1 shows how to remove the power supplies.

FIGURE 2-1 Removing a Power Supply



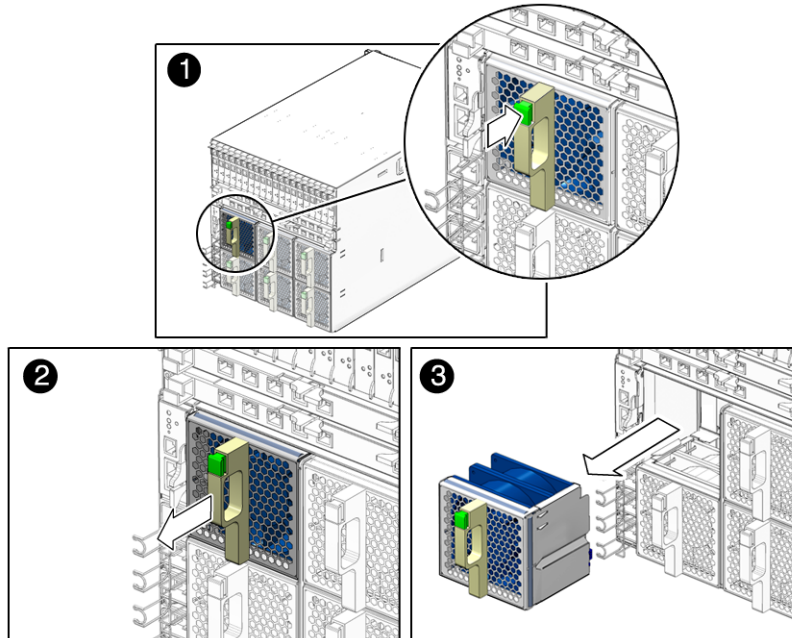
1. In the front of the chassis, locate the power supply to be removed.
2. Press and hold the green button on top of the power supply handle frame.
3. Rotate the power supply handle away from the power supply and down.
4. Pull the power supply out slightly, until you can support the bottom with one hand. *Do not* pull the power supply out of the chassis with the handle.
5. Pull the power supply all the way out of the chassis, supporting it with two hands as soon as possible.
6. Repeat [Step 1](#) through [Step 5](#) for the second power supply.

Note – Store the power supply modules in a safe place. After the chassis is rackmounted, reinstall the power supply as described in [“How to Install Power Supply Modules”](#) on page 16.

▼ How to Remove the System Fan Modules

FIGURE 2-2 shows how to remove a system fan module.

FIGURE 2-2 Removing a Fan Module



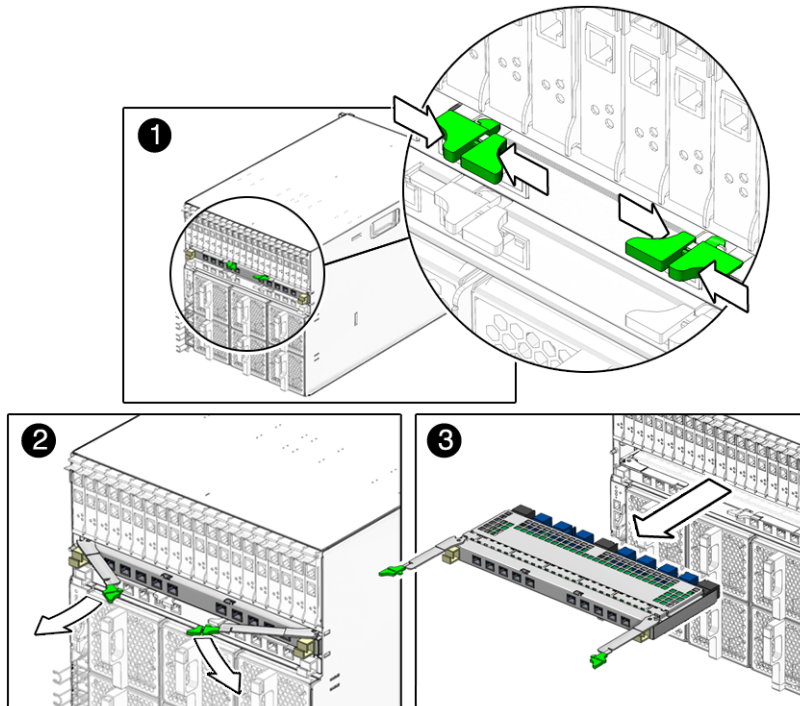
1. In the rear of the chassis, locate the fan module that you want to remove.
2. Press and hold the green button on the fan handle.
3. Pull out the rear fan module in a smooth motion until it is free from the chassis.
4. Repeat [Step 1](#) through [Step 3](#) until you have removed all six rear fan modules from the chassis.

Note – Store the rear fan modules in a safe place. After the chassis is rackmounted, you will need to reinstall the rear fan modules into the chassis. This procedure is described in [“How to Install Rear Fan Modules”](#) on page 19.

▼ How to Remove the NEMs

FIGURE 2-3 shows how to remove the NEMs.

FIGURE 2-3 Removing a NEM



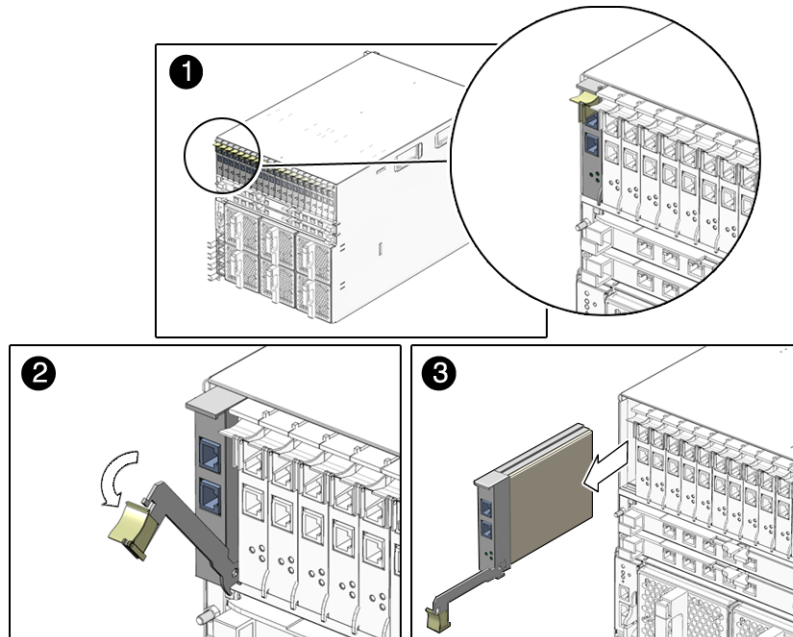
1. In the rear of the chassis, locate the NEM that you want to remove.
2. Press together and hold the ejector buttons on both right and left ejector levers.
3. To unlatch the NEM from the chassis, open the ejector levers by rotating them outward.
4. Holding the opened ejector levers, pull the NEM toward you until you are able to pull the rest of the module out by hand.
5. Repeat [Step 1](#) through [Step 4](#) if you have another NEM to remove.

Note – Store the NEMs in a safe place. After the chassis is rackmounted, you will need to reinstall the NEMs into the chassis. This procedure is described in [“How to Install NEMs”](#) on page 17.

▼ How to Remove the PCIe EMs

FIGURE 2-4 shows how to remove the PCIe EMs.

FIGURE 2-4 Removing a PCIe EM



1. In the rear of the chassis, locate the PCIe EM that you want to remove.
2. Place one finger on top of ejector-lever handle, and rotate the handle downward.
3. Pull the ejector lever toward you, and pull the PCIe EM forward until you are able to pull the rest of the module out by hand.
4. Repeat [Step 1](#) through [Step 3](#) until you have removed all installed PCIe EMs from the chassis.

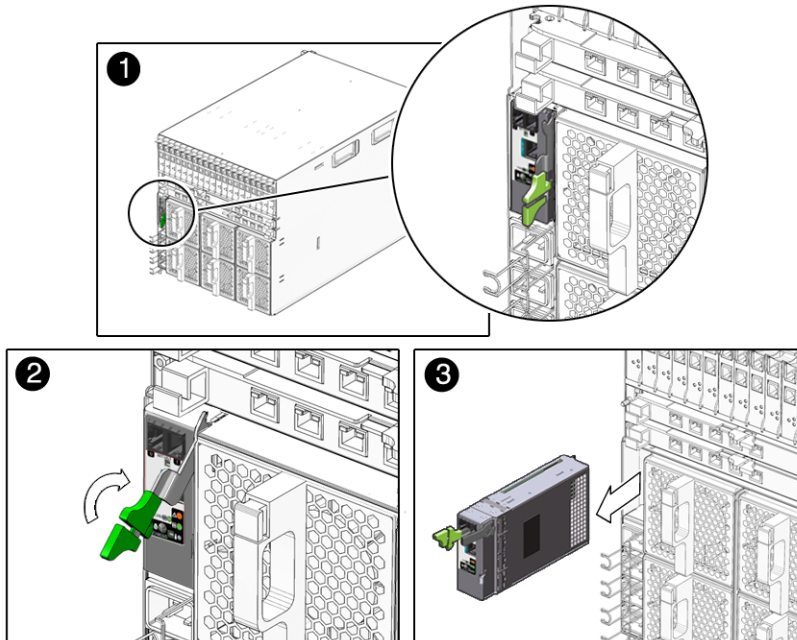
Note – Store the PCIe EMs in a safe place. After the chassis is rackmounted, you will need to reinstall the PCIe EMs into the chassis. This procedure is described in [“How to Install PCIe EMs”](#) on page 18.

▼ How to Remove the CMM

FIGURE 2-5 shows how to remove the CMM.

Note – The following illustration shows the A90-D chassis CMM. The removal process for the previous version of the CMM is the same.

FIGURE 2-5 Removing the CMM



1. In the rear of the chassis, locate the CMM.
2. Press together and hold the ejector buttons on the module ejector lever.
3. To unlatch the module from the chassis, pull the ejector lever away from the module and up.
4. Pull the ejector lever toward you until you are able to pull the rest of the module out by hand.

Note – Store the CMM in a safe place. After the chassis is rackmounted, you will need to reinstall the CMM into the chassis. This procedure is described in “[How to Install the CMM](#)” on page 20.

Mounting the Chassis in a Rack

After unpacking the system chassis and verifying that all the components in your order were received, proceed to the instructions on the *Sun Blade 6000 Chassis Rack Alignment Template*, 263-2755, for detailed instructions on mounting the chassis.

This document is included with the Sun Blade 6000 modular system rackmount kit and is also available on the Sun Blade 6000 modular system documentation site at:

<http://docs.sun.com/app/docs/prod/blade.6000mod~blade6000#hic>

After mounting the chassis in the rack, if you have removed modules to install the chassis manually, replace the modules as shown in: “[Installing Modules and Options](#)” on page 13.

Installing Modules and Options

This section describes how to perform new installations of modules and options into a Sun Blade 6000 chassis. Topics covered in this section include:

- “[How to Install Server and Storage Modules](#)” on page 14
- “[How to Install Power Supply Modules](#)” on page 16
- “[How to Install NEMs](#)” on page 17
- “[How to Remove the PCIe EMs](#)” on page 11
- “[How to Install Rear Fan Modules](#)” on page 19
- “[How to Install the CMM](#)” on page 20



Caution – This section does not provide instructions for replacing existing chassis modules and options that are installed in a powered-on system. The instructions in this chapter assume that the new system has not yet been powered on. For information about replacing existing modules and options, see the *Sun Blade 6000 Modular System Service Manual*.

▼ How to Install Server and Storage Modules

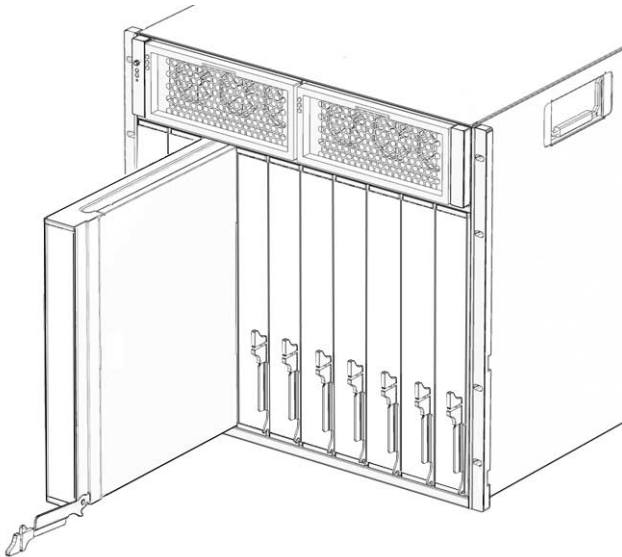
The Sun Blade 6000 chassis supports up to 10 server or storage modules.

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

1. In the front of the system chassis, locate the desired slot in the chassis.
2. Remove the filler panel, if necessary.

FIGURE 2-6 shows the filler panel being removed from the chassis.

FIGURE 2-6 Removing a Filler Panel



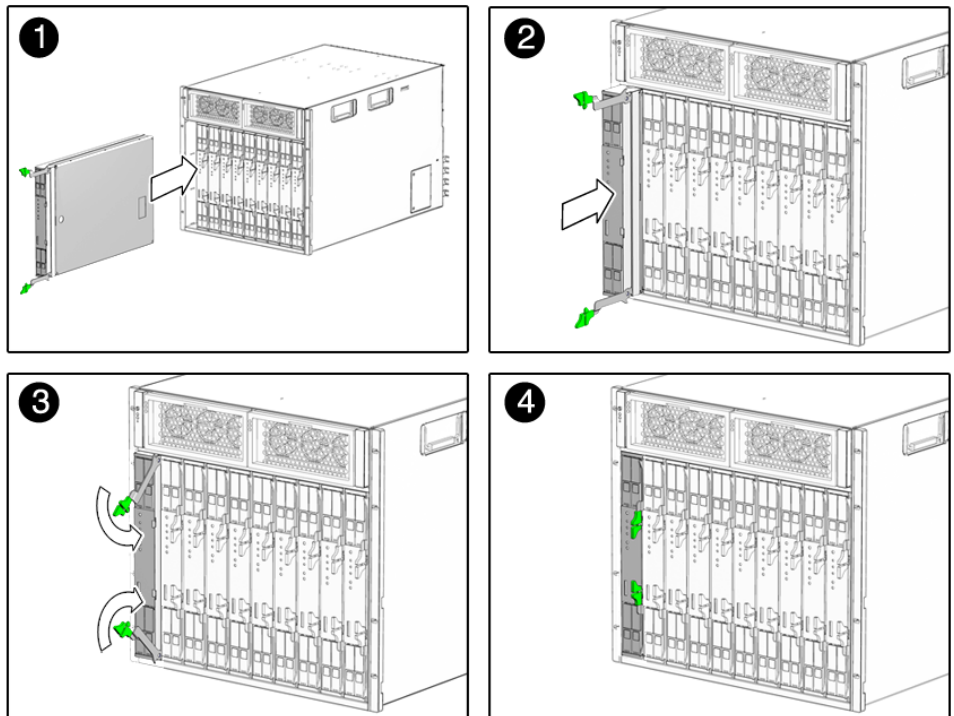
3. Rotate the lower ejector lever on the filler panel downward, and pull the filler panel out of the chassis.

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

4. Position the server or storage module vertically so that the ejectors are on the right.

See FIGURE 2-7.

FIGURE 2-7 Inserting the Server Module into the Chassis



5. Push the server or storage module into the slot until the module stops.

6. Rotate the ejectors down until they snap into place.

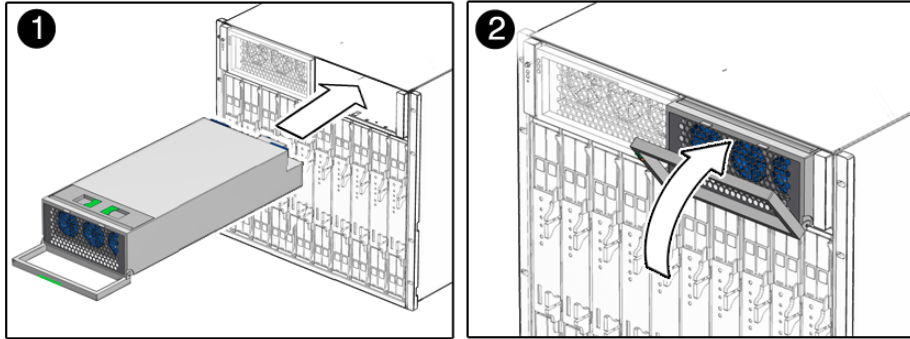
The server or storage module is now flush with the chassis and the ejectors are locked.

7. For each remaining server or storage module to be installed, repeat [Step 1](#) through [Step 6](#).

▼ How to Install Power Supply Modules

FIGURE 2-8 shows how to install the power supplies.

FIGURE 2-8 Installing a Power Supply

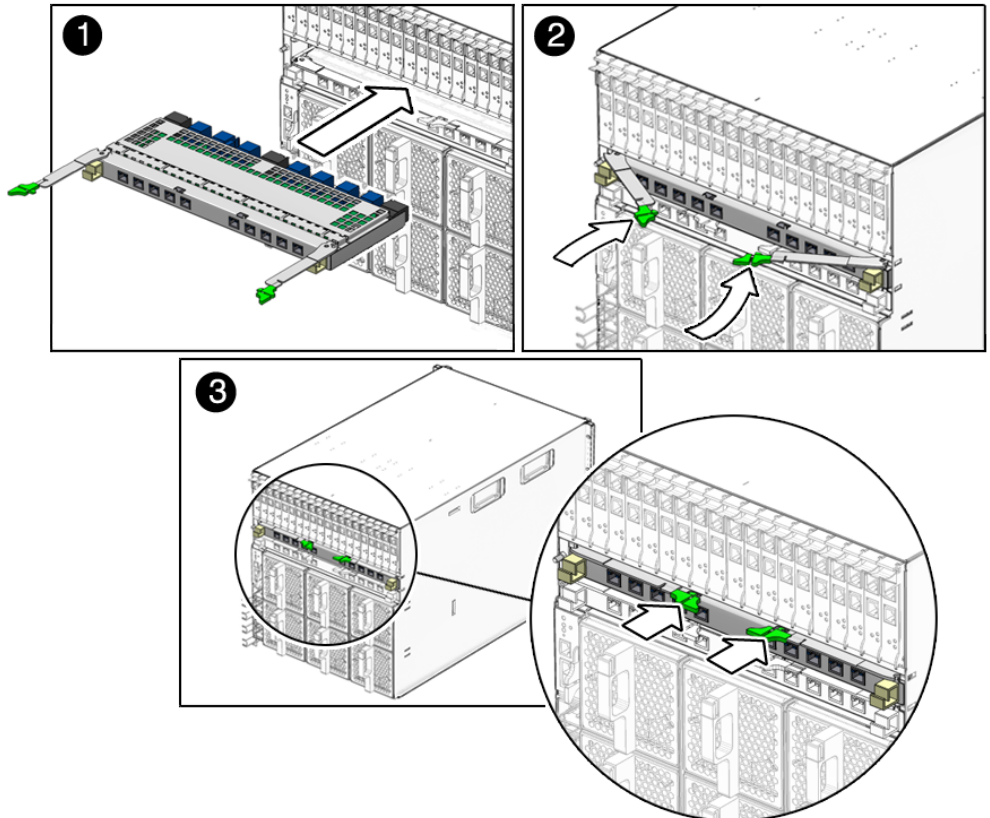


- 1. In the front of the system chassis, locate a vacant power supply slot.**
Ensure that the power supply unit is facing up and the three LED holes appear on the left when installing the power supply module.
- 2. Pull the power supply handle out and away from the power supply.**
- 3. Align the power supply unit with the power supply slot.**
- 4. In a smooth motion, slide the power supply into the power supply slot until the unit engages with the internal connectors.**
- 5. Push the power supply handle back toward the power supply until it clicks into place.**
- 6. Repeat Step 1 through Step 5 until you have reinstalled both power supply modules in the chassis.**

▼ How to Install NEMs

The Sun Blade 6000 chassis can have 0, 1, or 2 network express modules (NEMs) installed. [FIGURE 2-9](#) shows how to install a NEM.

FIGURE 2-9 Installing a NEM

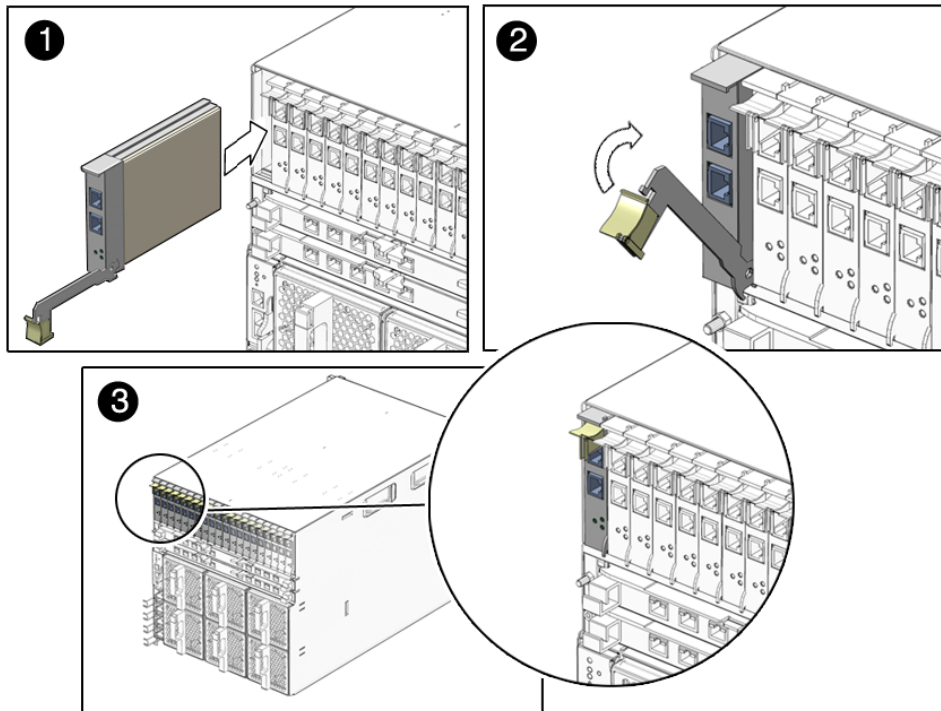


1. **Align the NEM with the vacant NEM slot.**
Ensure that the RJ-45 port connectors of the NEM are facing toward you and are positioned at the top of the NEM.
2. **Fully open the NEM ejector levers.**
3. **Slide the NEM into the vacant NEM chassis slot until you feel it stop.**
4. **Secure the NEM by closing the ejector levers.**
5. **For each remaining NEM to be installed, repeat [Step 1](#) through [Step 4](#).**

▼ How to Install PCIe EMs

The Sun Blade 6000 chassis supports up to 20 PCIe ExpressModules (PCIe EMs). It arrives with 20 filler panels installed in each PCIe EM slot labeled PCIe EM 0.0–9.1. [FIGURE 2-10](#) shows how to install a PCIe EM.

FIGURE 2-10 Installing an PCIe EM



1. Align the PCIe EM with the vacant PCIe EM slot.

Ensure that the indicator lights on the front panel of the PCIe EM are facing toward you and that the PCIe EM ejector lever on the bottom is fully opened.

2. Slide the PCIe EM into the vacant PCIe EM chassis slot.

The ejector lever starts to pop up as the module engages with the system slot.

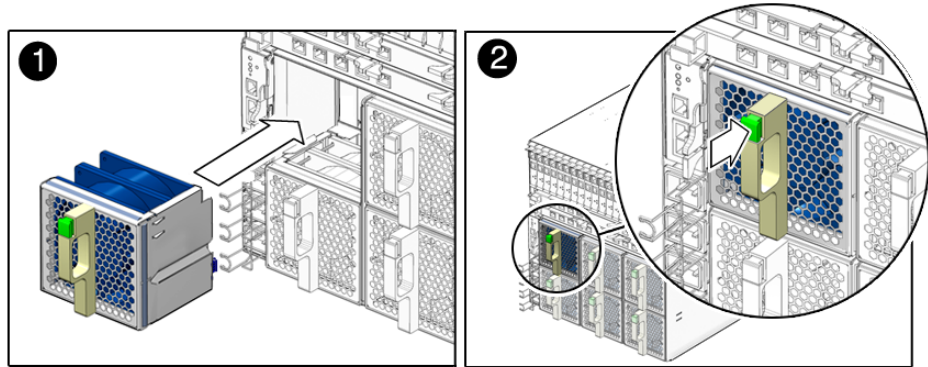
3. Complete the installation by closing the ejector lever to secure the PCIe EM in the chassis.

4. For each remaining PCIe EM to be installed, repeat [Step 1](#) through [Step 3](#).

▼ How to Install Rear Fan Modules

FIGURE 2-11 shows how to install a fan module.

FIGURE 2-11 Installing a Fan Module



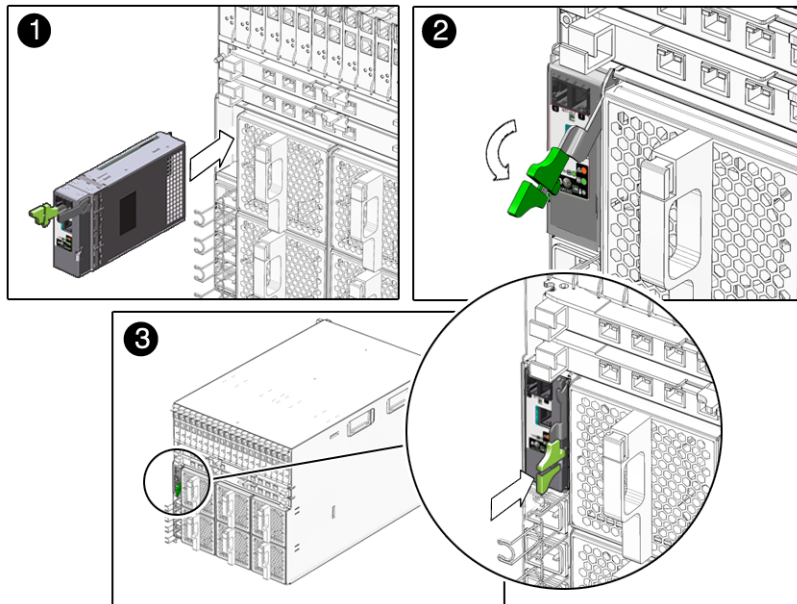
- 1. In the back of the system chassis, locate a vacant fan module slot.**
- 2. Using both hands, align the fan module with the vacant slot.**
Make sure that the green button on the handle of the fan module is at the top of the fan.
- 3. Slide the fan module into the vacant slot until the front panel meets the fan controller assembly connectors.**
You should hear or feel a click when the fan engages with the fan.
- 4. Repeat Step 1 through Step 3 until you have reinstalled all six rear fan modules in the chassis.**

▼ How to Install the CMM

FIGURE 2-12 shows how to install a CMM.

Note – The following illustration shows the A90-D chassis CMM. The removal procedure for the previous version of the CMM is the same.

FIGURE 2-12 Installing the CMM



1. **Align the CMM with the CMM slot.**
Ensure that the CMM indicator lights of the CMM on the front panel are on the top of the module.
2. **Slide the CMM into the vacant CMM chassis slot.**
Ensure that the CMM engages with the system chassis guidance system.
3. **Complete the installation by closing the ejector lever to secure the CMM in the chassis.**
4. **For each remaining CMM to be installed, repeat [Step 1](#) through [Step 3](#).**

Attaching Cables and Devices to Modules and Powering On the System Chassis

This chapter describes how to connect the AC power cables, management network cables, and data network cables to the appropriate chassis modules and how to power on the system for the first time.

This section covers topics listed in the following table.

Description	Links
Cable the network express modules	“Cabling Network Express Modules (NEMs)” on page 22
Cable the PCIe ExpressModules	“Cabling PCIe ExpressModules (PCIe EMs)” on page 23
Cable the chassis monitoring module	“Cabling the Chassis Monitoring Module (CMM)” on page 24
Cable the AC power interface.	“Cabling the AC Power Interface” on page 27
Power on the system.	“Powering On the System Chassis for the First Time” on page 29

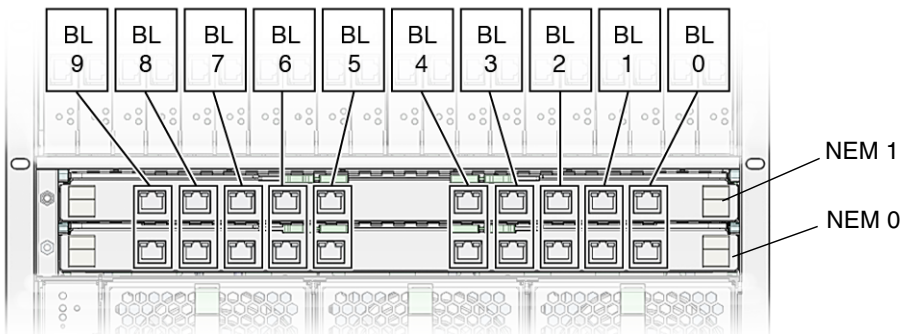
Cabling Network Express Modules (NEMs)

Each NEM connects to all 10 blade slots. The basic NEM provides a 10/100/1000 Ethernet connection for each blade. Other NEMs can provide SAS connectivity to disk blades and 10GbE Ethernet ports, in addition to the 10/100/1000 Ethernet connection for each blade.

The Sun Blade 6000 chassis provides up to two NEM slots per server module labeled NEM 0–1. Slot 0 is the bottom NEM slot and slot 1 being the top NEM slot.

The following illustration shows the Ethernet ports that are associated with each server module for the basic 10/100/1000 Ethernet NEM. The BLx designation refers to the server module slot that corresponds to the Ethernet port.

FIGURE 3-1 Server Module to NEM Correspondence



Refer to the NEM documentation for more information on NEM connections.

▼ How to Cable Network Express Modules

1. Locate the data network cable.

Refer to the NEM documentation for information on the supported cables for the NEM.

2. Plug the data network cable into the appropriate RJ-45 Ethernet slot or 10 GbE SFP+ connector.

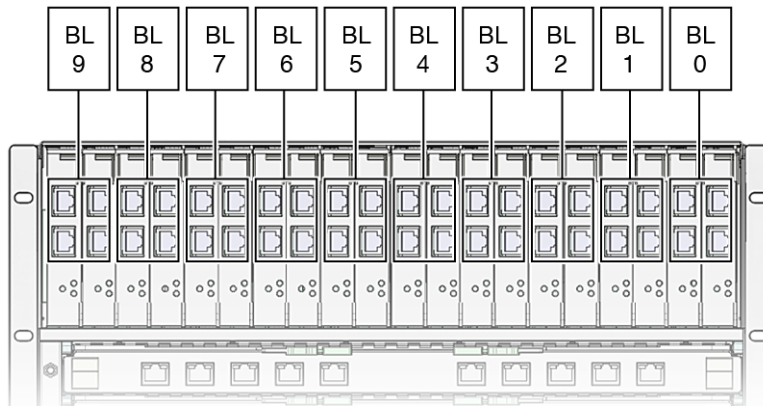
3. Attach the other end of the data network cable to your local area network.

Cabling PCIe Express Modules (PCIe EMs)

The Sun Blade 6000 chassis provides 20 PCIe EM slots, with two PCIe EM slots assigned to each server module. The PCIe EM slots are numbered PCIe EM 0.0 to 9.1 right-to-left as viewed from the rear of the chassis.

The following illustration shows the Gigabit Ethernet PCIe EMs that correspond with the server modules in the chassis. The BLx designation refers to the server module slot that corresponds to the PCIe EM.

FIGURE 3-2 Server Module to PCIe EM Correspondence



Refer to the PCIe EM documentation for more information on PCIe EM connections.

Before You Begin

The following procedure assumes that you have recorded the MAC address for each PCIe EM data port. The PCIe EM port MAC addresses are printed on the PCIe EM board. Refer to the PCIe EM documentation for more information.

Note – When you configure the operating system network information for multiple network interfaces during operating system installation, you might need to know the MAC address for each PCIe EM port connected to a network.

▼ How to Cable a PCIe EM

1. **Locate the data network or device cable.**

Refer to the PCIe EM documentation for information on the supported cables for the PCIe EM.

2. **Attach a cable to the appropriate PCIe EM connector.**

3. **Attach the other end of the cable to your local area network or storage device.**

Cabling the Chassis Monitoring Module (CMM)

This section provides instructions for attaching a serial console to the chassis monitoring module (CMM).

Each chassis contains a CMM with two Ethernet (NET MGT) ports and one serial port (SER MGT) available. [FIGURE 3-3](#) shows the CMM I/O ports. The position of the CMM I/O ports will vary, depending on which version of the Sun Blade 6000 modular system chassis that you have.

The pin assignments for the SER MGT port are shown in [TABLE 3-1](#).

TABLE 3-1 Pin Assignments for SER MGT Port

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

▼ How to Cable the CMM

1. Connect the following cables to the CMM;

- Connect a serial cable to the SER MGT port.
- Connect an Ethernet cable to the NET MGT 0 port.

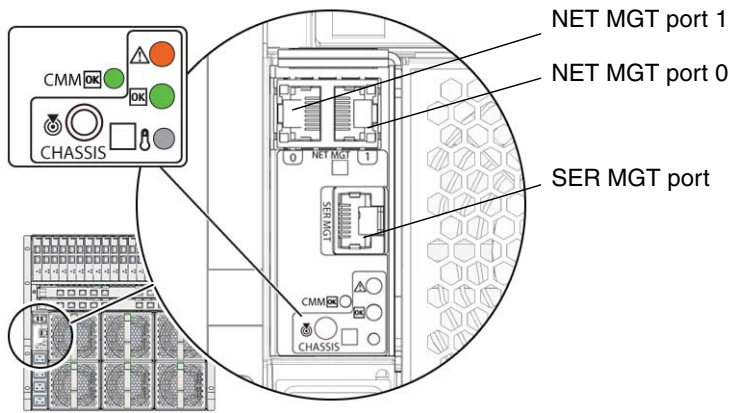
After your initial connection to ILOM, you can also enable the NET MGT port 1. See the *Oracle Integrated Lights Out Manager (ILOM) CMM Administration Guide* for more information.

2. Connect the serial cable to a serial device.

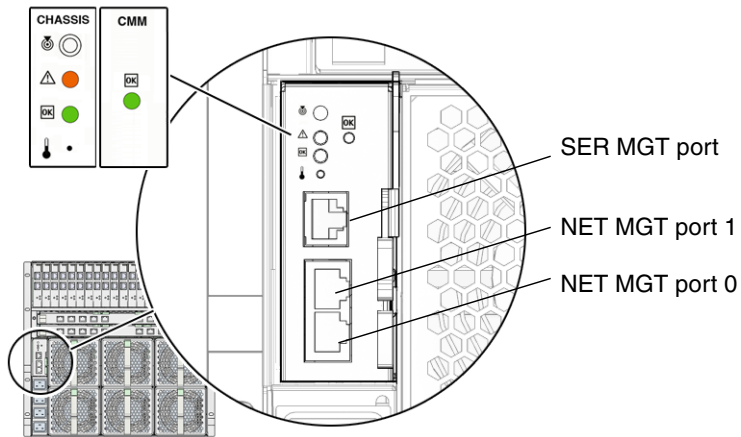
3. Attach the Ethernet cable to your local network.

Refer to [“Configuring the Sun Blade 6000 Modular System Management Network” on page 31](#) for information on how to configure the CMM ILOM.

FIGURE 3-3 CMM LEDs and ports



A90-D Chassis CMM

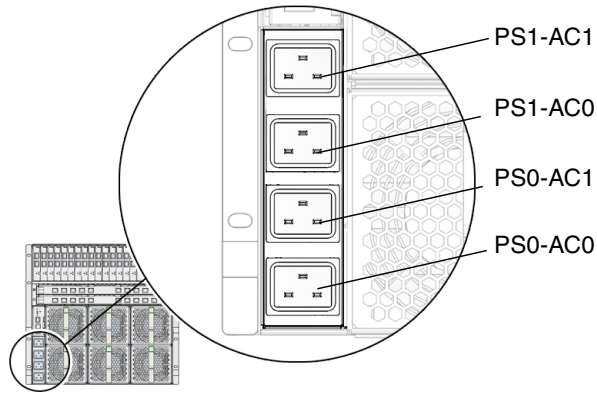


A90-B Chassis CMM

Cabling the AC Power Interface

The Sun Blade 6000 chassis includes one AC power interface that provides four power inlets. [FIGURE 3-4](#) shows the AC power connectors.

FIGURE 3-4 AC Power Connectors



The Sun Blade 6000 AC power interface supplies main power to the modules in the system chassis. Main power is automatically applied after the AC power cords are connected from the AC power interface to a customer-supplied power distribution unit (PDU) and the OK power LED flashes.

Note – By default, the Power-on option is enabled in the CMM ILOM. If you disable this option, only standby power is applied to the chassis monitoring module in the system chassis (after plugging in the AC power cords).

The AC inlets on the power interface provide power to each power supply unit. All power supply units have separate power cords.

▼ How to Connect the Power Cables to the AC Power Interface

Caution – You should be familiar with the Sun Blade 6000 modular system power requirements prior to attaching the power cables to a customer-supplied power distribution unit (PDU). For more information about system power requirements, see the *Sun Blade 6000 Modular System Site Planning Guide*.

1. Locate the four power cables shipped with the system.
2. Locate the AC inlets on the power interface on the rear of the chassis.
3. Open the metal retention clips for each power inlet.
4. In the rear of the chassis, plug four power cables into slot positions: PS0-AC1, PS0-AC0, PS1-AC1, and PS1-AC0.
5. Secure the cable to the connector with the metal retention clip.
6. Plug the other end of the power cables into the power distribution unit (PDU).
Main power is automatically distributed to the system chassis.

Powering On the System Chassis for the First Time

Main power is automatically supplied to the system chassis as soon as the power supplies receive power. When the system chassis is powered up, main power is applied to all the modules in the chassis: CMM, NEMs, server modules, and their associated PCIe EMs.

Note – By default, the policy for the auto-power-on chassis option is shipped enabled in the CMM ILOM. If you disable the auto-power-on chassis policy, 12V standby power is applied to the system chassis.

The following procedure describes how to ensure that the system chassis is powered on.

▼ How to Ensure That the System Chassis Is Powered Up

1. **Ensure that the AC power cables are attached from the power interface module to a power source.**

For details, see [“Cabling the AC Power Interface”](#) on page 27.

2. **Ensure that main power is applied to the system chassis.**

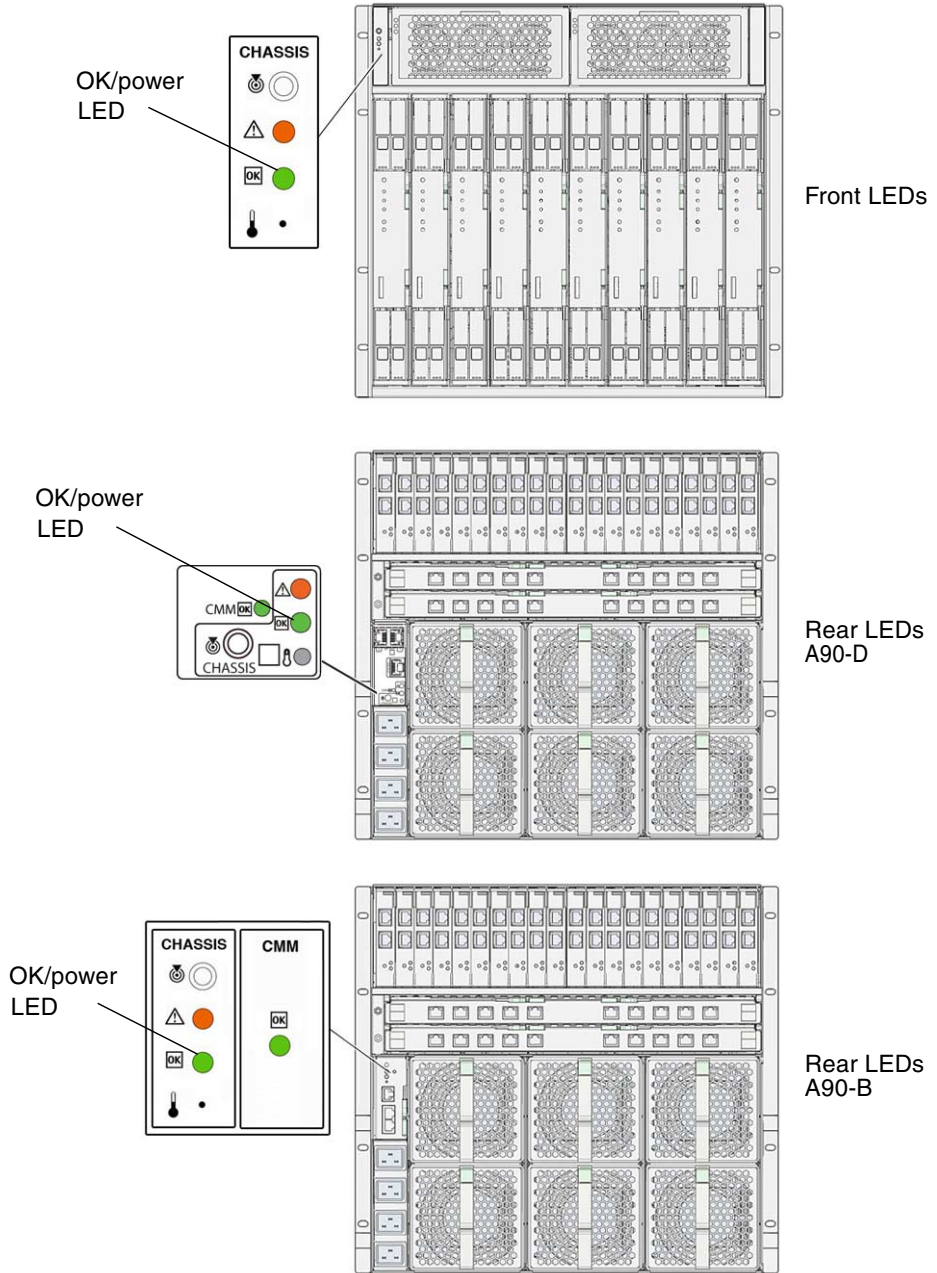
The OK power LED illuminates a solid green light. There are OK power LEDs located on the front and rear of the chassis.

The location of the rear chassis power LEDs will vary, depending on which version of the Sun Blade 6000 chassis that you have. [FIGURE 3-5](#) shows the locations of the front and rear power LEDs.

Note – By default, the auto-power-on policy setting in the CMM ILOM is shipped enabled for the system chassis. When the auto-power-on chassis policy is enabled, the system chassis automatically applies main power to all modules in the chassis (after power is provided to the power supplies).

To ensure that power has been applied to additional chassis modules, see the documentation for each module.

FIGURE 3-5 Front and Rear Chassis LEDs



Configuring the Sun Blade 6000 Modular System Management Network

This chapter describes how to configure the chassis monitoring module (CMM) for access to the Oracle Integrated Lights Out Manager (ILOM).

This section covers topics listed in the following table.

Description	Links
Learn about the Oracle Integrated Lights-Out Manager.	“About The Oracle Integrated Lights-Out Manager” on page 32
Connect to the CMM ILOM for the first time.	“Establishing an Initial Connection to the CMM ILOM” on page 35
Communicate with the CMM ILOM.	“Communicating With CMM ILOM Using the Management Network IP Addresses.” on page 39
Change the ILOM root account password.	“Changing the CMM ILOM Root Account Password with CLI” on page 46

About The Oracle Integrated Lights-Out Manager

The following topics are covered in this section:

- [“ILOM Overview” on page 32](#)
- [“Preconfigured CMM ILOM Administrator Account” on page 33](#)
- [“ILOM Documentation” on page 34](#)

ILOM Overview

The Integrated Lights Out Manager (ILOM) is a built-in system management tool that enables you to monitor and manage the components installed in the Sun Blade 6000 chassis. The ILOM is accessed through the CMM service processor. For instance, in CMM ILOM, you can configure network information, view and edit hardware configurations, monitor vital system information, and manage user accounts.

Note – The term *CMM ILOM* is used in this document to refer to the ILOM that runs on the Sun Blade 6000 modular system CMM service processor. For information on server management systems specific to the server modules installed in the Sun Blade 6000 chassis, see the server module documentation.

The CMM ILOM is accessible through command-line interfaces (CLI), a web interface, and IPMI interfaces.

Some server modules that are installed in the Sun Blade 6000 chassis might use a different management software. See your server module documentation for information on server module management. Storage modules do not have a service processor and do not run ILOM. See your storage module documentation for more information on storage module management.

For more information about the tasks you can perform in the CMM ILOM, see the ILOM documentation listed at [“ILOM Documentation” on page 34](#).

Preconfigured CMM ILOM Administrator Account

The Sun Blade 6000 modular system ships with one preconfigured CMM ILOM administrator account:

User name: root

Password: changeme

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

The first time you access ILOM at the CMM level or server module level you need to log in as `root` with the default password `changeme`.

After you have logged into CMM ILOM and established network connectivity to the system, change the password associated with the ILOM `root` account to prevent your system from unauthorized access.

For more information about resetting the ILOM `root` account password, see [“Changing the CMM ILOM Root Account Password with CLI” on page 46](#).

Accepting Network Defaults

As of ILOM 3.0.12, the Sun Blade 6000 modular system supports dual-stack IPv4 and IPv6 settings, which enable ILOM to fully operate in an IPv4 and IPv6 network environment. For IPv4 configurations, DHCP is enabled by default, allowing a DHCP server on the network to automatically assign network settings to the CMM. For IPv6 configurations, IPv6 stateless auto-configuration is enabled by default, allowing an IPv6 router on the network to assign the network settings.

In a typical configuration, you will accept these settings assigned by the DHCP server or IPv6 router. The procedures in this section allow you to log in to ILOM to test that the assigned settings are working correctly, and also to change the settings if necessary.

ILOM Documentation

TABLE 4-1 lists the ILOM documentation available for the Sun Blade 6000 modular system for ILOM 3.x or later. Refer to this documentation for further details on using ILOM with the Sun Blade 6000 modular system.

If you are using ILOM 2.x, refer to the documentation at <http://docs.sun.com/app/docs/prod/blade.6000mod~ilom2.0#hic>.

TABLE 4-1

Information Category	URL or Title	Part Number
General ILOM 3.0 information	http://docs.sun.com/app/docs/coll/ilom3.0	
	<i>Sun Integrated Lights Out Manager (ILOM) 3.0 Getting Started Guide</i>	820-5522
	<i>Sun Integrated Lights Out Manager (ILOM) 3.0 Concepts Guide</i>	820-6410
	<i>Sun Integrated Lights Out Manager (ILOM) 3.0 Web Interface Procedures Guide</i>	820-6411
	<i>Sun Integrated Lights Out Manager (ILOM) 3.0 CLI Procedures Guide</i>	820-6413
	<i>Sun Integrated Lights Out Manager (ILOM) 3.0 Feature Updates and Release Notes</i>	820-7329
CMM-specific ILOM 3.0 information	http://docs.sun.com/app/docs/prod/blade.6000mod~blade6000ilom#hic	
	<i>Oracle Integrated Lights Out Manager (ILOM) 3.0 Supplement for the Sun Blade 6000 and 6048 Modular Systems</i>	820-7603
	<i>Oracle Integrated Lights Out Manager (ILOM) CMM Administration Guide for Sun Blade 6000 and 6048 Modular Systems</i>	820-0052

Establishing an Initial Connection to the CMM ILOM

To set up CMM and server modules with initial network configuration information, you must establish a connection through ILOM to the CMM. Until the CMM has an IP address assigned to it, you must initially use a serial connection to communicate with the CMM. After establishing a serial connection to the CMM, you can choose to configure the CMM and server modules with static or DHCP IP addresses.

This section includes the following topics:

- [“Prerequisites” on page 35](#)
- [“Assigning an IP Address to the CMM” on page 36](#)

Prerequisites

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

- Unpacked and completed the hardware and cabling setup of the Sun Blade 6000 modular system. For details, see [Chapter 1](#), [Chapter 2](#), and [Chapter 3](#).
- Attached an Ethernet cable to the NET MGT port on rear panel of the CMM. For details, see [“How to Cable the CMM” on page 25](#).
- Established console access to the CMM (or server module) through a serial connection. For details, see [“How to Cable the CMM” on page 25](#).
- Configured 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)
- Ensured that the main power was applied to the chassis and the server modules. For details, see [“Powering On the System Chassis for the First Time” on page 29](#).

Note – 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 6000 modular system. Setting up a DHCP server is out of the scope of this guide. See the documentation supplied with the DHCP server software.

Assigning an IP Address to the CMM

Before you can access the CMM ILOM through the Ethernet NET MGT port, you will need to determine the IP address assigned to the CMM. This section covers the following topics:

- [“How to Use DHCP to Assign All IP Addresses” on page 36](#)
- [“How to Assign a Static IP Address to the CMM” on page 37](#)

▼ How to Use DHCP to Assign All IP Addresses

The CMM is set to acquire IP addresses through DHCP by default. 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. Refer to the documentation supplied with your DHCP server software.**
- 2. Verify that the Ethernet cable is plugged into the NET MGT port on the active CMM.**
 - As long as CMM ILOM was not configured previously with a static IP, CMM ILOM automatically broadcasts a DHCPDISCOVER packet with the ID of its CMM MAC address and server module MAC address(es).
 - The DHCP server on your network returns the DHCPOFFER packet containing the IP address and other information. The CMM then manages its “lease” of IP addresses assigned by the DHCP server.
- 3. To obtain the DHCP IP addresses assigned to the CMM, use one of the following methods:**
 - ILOM-CMM via serial connection
 - a. Using a serial console attached to the rear panel of the CMM, log into CMM ILOM as the administrator. At the login prompt, type the ILOM administrator username and password.**

The default user name is `root` and the default password is `changeme`.
`changeme`.
 - b. Press Enter.**
 - c. To view the network information for the CMM, type the following command:**

```
-> show /CMM/network
```

d. To drill view the IP addresses of each server module, type the following command:

```
-> show /CH/BLx/SP/network
```

BLx represents the server module installed in slot BL-0. To specify the target server module, you must specify the slot number of where the module is installed. Server module slots range from 0 to 9.

Note – Storage modules do not have a service processor. If you view storage blade information using /CH/BLx, the SP target is not shown.

■ **DHCP server logs.**

Refer to the DHCP server documentation for details.

Note – Refer to the server module documentation for more information on assigning a DHCP address to a server module SP.

▼ How to Assign a Static IP Address to the CMM

Follow these instructions when assigning a static IP address to a CMM through a serial connection:

1. Verify that your serial connection to the active CMM is operational.

For information about attaching a serial console to a CMM, see [“How to Cable the CMM” on page 25](#).

2. Log into CMM ILOM as an administrator by entering an administrator user name and password, and then press Enter.

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

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

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

```
-> cd /CMM/network
```

4. Use the following commands to specify the IP, netmask, and gateway addresses.

Command	Description and Example
<code>set pendingipaddress=</code>	Type this command followed by the static IP address that you want to assign to the CMM. Example: Typing <code>set pendingipaddress=129.144.82.26</code> would tell ILOM to assign 129.144.82.26 as the CMM IP address.
<code>set pendingipnetmask=</code>	Type this command followed by the static netmask address that you want to assign to the CMM. Example: Typing <code>set pendingipnetmask=255.255.255.0</code> would tell ILOM to assign 255.255.255.0 as the CMM NetMask address.
<code>set pendingipgateway=</code>	Type this command followed by the static gateway address that you want to assign to the CMM. Example: Typing <code>set pendingipgateway=129.144.82.254</code> would tell ILOM to assign 129.144.82.254 as the CMM gateway address.
<code>set pendingipdiscovery=</code>	Type the following command to tell ILOM whether you want to set a Static IP address. <code>set pendingipdiscovery=static</code>
<code>set commitpending=true</code>	Type this command (true) to assign the network settings specified. Example: <code>set pendingipaddress=129.144.82.26</code> <code>set pendingipnetmask=255.255.255.0</code> <code>set pendingipgateway=129.144.82.254</code> <code>set commitpending=true</code>

Communicating With CMM ILOM Using the Management Network IP Addresses.

The following procedures are covered in this section:

- [“How to Log Into the CMM Through the SER MGT Port”](#) on page 39
- [“How to Log Into the CMM Through the NET MGT Port”](#) on page 40
- [“How to Change Network Settings”](#) on page 41
- [“How to Test the IPv4 or IPv6 Network Configuration”](#) on page 45

▼ How to Log Into the CMM Through the SER MGT Port

You can only run ILOM CLI commands through the SER MGT port. You cannot run the ILOM web interface through the SER MGT port.

- 1. Ensure that you have cabled a terminal device to the CMM SER MGT port.**
See [“Cabling the Chassis Monitoring Module \(CMM\)”](#) on page 24.
- 2. From your terminal device, log into the CMM ILOM with a valid ILOM user account and password.**

The default login account is `root` and default password is `changeme`.

Once you are logged in, you communicate with the CMM using the CMM ILOM command line interface. For CLI details, refer to the *Sun Integrated Lights Out Manager (ILOM) 3.0 CLI Procedures Guide*.

▼ How to Log Into the CMM Through the NET MGT Port

Perform this task when you want to access the CMM ILOM through your network. You can perform ILOM CLI or ILOM web interface commands.

1. Ensure that the following conditions are met:

- The CMM NET MGT is connected to your network.
- An IP address is assigned to the CMM and you know the address.
- You know a valid CMM ILOM account and password.
The default login account is `root` and default password is `changeme`.

2. Do one of the following:

- To log into the ILOM CLI, type the following command:

```
$ ssh root@CMM_IP_address
```

```
Password: CMM_root_password
```

The ILOM -> prompt is displayed.
- To log into the ILOM web interface:
 - i. **Open a browser and type in the CMM ILOM IP address in the following format:**

```
http://CMM_IP_address
```
 - ii. **At the login page, enter your login and password.**
The main ILOM page is displayed.

Once you are logged into the CLI or web interface, you can perform a variety of ILOM commands to administer the modular components. Refer to the ILOM documentation for more information. See [“ILOM Documentation” on page 34](#).

▼ How to Change Network Settings

If you want to change the network settings currently configured for the server module, use the following procedure.

1. **Log in to ILOM using one of the methods in “How to Log Into the CMM Through the SER MGT Port” on page 4-39 or “How to Log Into the CMM Through the NET MGT Port” on page 4-40.**
2. **Perform the network configuration instructions that apply to your network environment:**
 - To view or configure IPv4 network settings, perform [Step 3](#) to [Step 4](#) in this procedure.
 - To view or configure IPv6 network settings, perform [Step 5](#) to [Step 8](#) in this procedure.
3. **For IPv4 network configurations, use the `cd` command to navigate to the `/network` directory:**

```
-> cd /CMM/network
```
4. **Do one of the following:**
 - If you have a DHCP sever on the network, type the `show` command to view the IPv4 network settings assigned to the server module by the DHCP server.
 - If there is no DHCP server, or if you want to assign static IPv4 network settings, use the `set` command to assign values for the properties listed in [TABLE 4-1](#). For example:

```
-> set pendingipdiscovery=static
-> set pendingipaddress=10.8.183.106
-> set pendingipnetmask=255.255.255.0
-> set pendingipgateway=10.8.183.254
-> set commitpending=true
```

TABLE 4-1 Set IPv4 static property values

Property	Set Property Value	Description
state	set state=enabled	The network state is enabled by default for IPv4. Note - To enable the static IPv4 network option the state must be set to enabled.
pendingipdiscovery	set pendingipdiscovery=static	To enable a static IPv4 network configuration, you need to set the pendingipdiscovery property value to static. Note - The property value for ipdiscovery is set to dhcp by default for IPv4.
pendingipaddress pendingipnetmask pendingipgateway	set pendingipaddress= <ip_address> pendingipnetmask=<netmask> pendingipgateway=<gateway>	To assign multiple static network settings, type set command followed by pending command for the each property value (IP address, netmask, and gateway), then type the static value that you want to assign.
commitpending=	set commitpending=true	Type set commitpending=true to commit the changes made to the state and ipdiscovery property values.

5. For IPv6 network configurations, use the cd command to navigate to the /CMM/network/ipv6 directory:

-> cd /CMM/network/ipv6

6. Type the `show` command to view the IPv6 network settings configured on the device.

For example, see the following sample output values for the IPv6 properties on a server SP device.

```
-> show

/CMM/network/ipv6
  Targets:

  Properties:
    state = enabled
    autoconfig = stateless_only
    dhcpv6_server_duid = (none)
    link_local_ipaddress = fe80::214:4fff:feca:5f7e/64
    static_ipaddress = ::/128
    ipgateway = fe80::211:5dff:febe:5000/128
    pending_static_ipaddress = ::/128
    dynamic_ipaddress_1 = fec0:a:8:b7:214:4fff:feca:5f7e/64

  Commands:
    cd
    show
```

7. To configure an IPv6 auto-configuration option, use the `set` command to specify the following auto-configuration property values:

TABLE 4-2 Set IPv6 auto-configuration property values

Property	Set Property Value	Description
state	set state=enabled	The IPv6 network state is enabled by default. To enable an IPv6 auto-configuration option this state must be set to enabled.
autoconfig	set autoconfig=<value>	Specify this command followed by the autoconf value you want to set. Options include: <ul style="list-style-type: none">• stateless_only (default setting) Automatically assigns IP address learned from IPv6 network router.• disable Disables all auto-configuration property values and sets the read-only property value for link local address.

Note – The IPv6 configuration options take affect after they are set. You do not need to commit these changes under the `/CMM/network` target.

8. Perform the following steps to set a static IPv6 address:

- a. To set a static IPv6 address, specify the following property values:

TABLE 4-3 Set property values for IPv6 static address

Property	Set Property Value	Description
state	set state= <i>enabled</i>	The IPv6 network state is enabled by default. To enable a static IP address this state must be set to <i>enabled</i> .
pendingipaddress	set pending_static_ipaddress= <ip6_address>/<subnet mask length in bits>	Type this command followed by the property value for the static IPv6 address and net mask that you want to assign to the device. IPv6 address example: fec0:a:8:b7:214:4fff:feca:5f7e/64

- b. To commit the pending IPv6 static network parameters, perform the steps in the following table:

TABLE 4-4 Steps to commit pending static IPv6 address

Step	Description
1	Use the <code>cd</code> command to change the directory to the device <code>network</code> target: <code>cd /CMM/network</code>
2	Type the following command to commit the changed property values for IPv6. <code>set commitpending=true</code>

Note – Network settings are considered pending until you commit them. Assigning a new static IP address to the CMM ends all active ILOM sessions to the device. To log back in to ILOM, you will need to create a new session using the newly assigned IP address.

9. To test the IPv4 or IPv6 network configuration from ILOM use the **Network Test Tools (Ping and Ping6)**. For details, see [“How to Test the IPv4 or IPv6 Network Configuration”](#) on page 4-45.

▼ How to Test the IPv4 or IPv6 Network Configuration

1. At the CLI prompt, type the `show` command to view the network test targets and properties.

For example, see the following output the shows the test target properties on a CMM device.

```
-> show

/CMM/network/test
  Targets:

  Properties:
    ping = (Cannot show property)
    ping6 = (Cannot show property)

  Commands:
    cd
    set
    show
```

2. Use the `set ping` or `set ping6` command to send a network test from the device to a specified network destination.:

Property	Set Property Value	Description
ping	set ping=<IPv4_address>	Type the set ping= command at the command prompt followed by the IPv4 test destination address. For example: -> set ping=10.8.183.106 Ping of 10.8.183.106 succeeded
ping6	set ping6=<IPv6_address>	Type the set ping6= command followed by the IPv6 test destination address. For example: -> set ping6=fe80::211:5dff:febe:5000 Ping of fe80::211:5dff:febe:5000 succeeded

Changing the CMM ILOM Root Account Password with CLI

To change the changeme password, follow these steps:

1. **Log into the CMM ILOM using the SER MGT or NET MGT ports. See “Communicating With CMM ILOM Using the Management Network IP Addresses.” on page 39.**
2. **Change the password for the CMM by typing the following command:**

```
-> set /CMM/users/root password=password
```

Where *password* is the new password that you want to assign.

For information about creating new user accounts and assigning a role (privilege) to a user account, see the ILOM documentation listed in “ILOM Documentation” on page 34.

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