Sun Fire™ B1600 Blade System Chassis Hardware Installation Guide

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Preface

This guide provides information about how to choose and prepare a location for a Sun Fire B1600 blade system chassis, and details of how to install the system chassis in a rack.

How This Book Is Organized

Chapter 1 describes the environmental requirements and airflow considerations for the Sun Fire B1600 blade system chassis.

Chapter 2 explains the various rackmount options and requirements for the system chassis.

Chapter 3 details how to install the system chassis into a rack.

Chapter 4 describes how to install a blade or filler panel in the system chassis. The chapter also describes how to remove (and install) other components from the system chassis.

Chapter 5 explains how to connect the IEC power supply cords and RJ-45 connectors to the system chassis.

Chapter 6 explains how to connect the serial port to different devices.

Related Documentation

Application	Title
Compliance and safety	*Sun Fire B1600 Blade System Chassis* Compliance and Safety Manual
Hardware installation overview (foldout poster)	*Sun Fire B1600 Blade System Chassis* Quick Start
Hardware installation	*Sun Fire B1600 Blade System Chassis* Hardware Installation Guide (this manual)
Software installation overview (foldout poster)	*Sun Fire B1600 Blade System Chassis* Software Setup Quick Start
Software setup	*Sun Fire B1600 Blade System Chassis* Software Setup Guide
B100x and B200x server blade installation and setup	*Sun Fire B100x and B200x Server Blade* Installation and Setup Guide
System chassis administration and component replacement	*Sun Fire B1600 Blade System Chassis* Administration Guide
Switch administration	*Sun Fire B1600 Blade System Chassis* Switch Administration Guide
Late-breaking information	*Sun Fire B1600 Blade System Chassis* Product Notes

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CHAPTER 1

Preparing for the Installation

This chapter provides the information you need to prepare for the installation of the Sun Fire B1600 blade system chassis in the following sections:

- Section 1.1, “Checklist of Rackmounting and Setup Tasks” on page 1-2
- Section 1.2, “Contents of the Ship Kit” on page 1-3
- Section 1.3, “Tools and Equipment Needed” on page 1-4
- Section 1.4, “System Chassis Dimensions” on page 1-4

1.1 Checklist of Rackmounting and Setup Tasks

1. **Unpack the system chassis.**

2. **Check that you have the required parts for rackmounting.**

   See Section 1.2, "Contents of the Ship Kit" on page 1-3, Section 3.1.1, "Contents of the Four-Post Rackmount Kit" on page 3-2, or Section 3.2.1, "Contents of the Two-Post Rackmount Kit" on page 3-11.

3. **Locate the rackmounting holes.**

   See Section 3.1.2, "Using the Rack Buddy" on page 3-2.

4. **Install the rack brackets.**

   See Section 3.1.3, "Attaching the Brackets to the Four-Post Rack" on page 3-3 or Section 3.2.2, "Installing the System Chassis In a Two-Post Rack" on page 3-12.

5. **Install the system chassis in the rack or cabinet.**

   See Section 3.1, "Installing the System Chassis In a Four-Post Rack or Cabinet" on page 3-1 or Section 3.2, "Installing the System In a Two-Post Rack" on page 3-11.

6. **Install the blades, if applicable.**

   See Section 4.2, "Installing a Blade or Filler Panel" on page 4-5.

7. **Remove and re-install the PSUs and SSCs if you want to check the serial numbers or familiarize yourself with the installation and removal procedures.**

   See Section 4.3, "Removing and Installing a PSU" on page 4-8 and Section 4.4, "Removing and Installing a Switch and System Controller (SSC)" on page 4-14.

8. **Connect the power cords.**

   See Section 5.2, "Connecting the IEC Power Cords" on page 5-3.

9. **Connect the management and data cables.**

   See Section 5.4, "Attaching the Connector Cables" on page 5-6.

10. **Connect the serial port(s) to a serial device.**

    You can connect to both serial ports, if applicable. See Chapter 6 for details of how to connect the system chassis to different devices.

11. **Check that cables are managed correctly.**

    See Section 5.7, "Managing Cables for Multiple System Chassis" on page 5-12.

1.2 Contents of the Ship Kit

The Sun Fire B1600 blade system chassis is packaged in polyethylene foam cushions for dynamic protection and is contained within a corrugated container with an integrated wood pallet. The sealed corrugated container is attached to the wood pallet at the base with cap nails. The assembly is banded to the wood pallet for additional strength and protection.

The top panels of the container include instructions about how to unpack the system. No special tools are required. One box contains the necessary documentation and software, and the other box holds the rackmount hardware.

The modules shipped within the system chassis depend on the configuration ordered.

The ship kit box accompanying the system contains some or all of the following items:

- Manuals:
  - *Sun Fire B1600 Blade System Chassis Hardware Installation Guide*
  - Sun Fire B1600 *Blade System Chassis Compliance and Safety Manual* (Multilingual)
  - *Sun Fire B1600 Blade System Chassis Software Setup Guide*
  - *Sun Fire B1600 Blade System Chassis Software Quick Start Poster*
  - *Sun Fire B1600 Blade System Chassis Hardware Quick Start Poster*
  - *Sun Fire B100x and B200x Server Blade Installation and Setup Guide* (supplied only if the chassis contains B100x and/or B200x server blades)
- CD: *Sun Fire B1600 Platform Documentation, Drivers, and Installation* CD
- 19 Inch four post rackmount kit
- Cables and connectors

Note – The operating system software kit must be ordered as a separate item. The manuals and CD shipped with the system chassis are all that you need to install the system chassis hardware.

Use the instructions in this guide and the *Sun Fire B1600 Blade System Chassis Product Notes* (if present) to unship and mount the system.

Two people are required to lift a fully populated Sun Fire B1600 blade system chassis into a four-post rack, and three people for a two-post rack. The system chassis weighs approximately 45kg (99lb) when fully equipped.

Do not remove any modules (blades, filler panels, PSUs, SSCs) from the system chassis prior to rack installation as this may result in deformation of the chassis and system chassis failure.

Ensure that doorways, corridors, and aisles are wide and high enough to accommodate the system while you are maneuvering it into position.

1.3 Tools and Equipment Needed

You need the following equipment to install a Sun Fire B1600 blade system chassis:

- A suitable host rack or cabinet.
- The appropriate rackmount kit for the host rack or cabinet
- Category 5 RJ-45 cabling. A maximum of 20 cables are required for a fully populated system chassis
- IEC power cabling. Two cables are required per system chassis

You will also need the following tools:

- No. 2 Phillips screwdriver
- The correct screwdriver for the rackmounting screws being attached to, and supplied with, the host rack or cabinet
- A cage nut insertion tool (only for racks or cabinets using caged nuts)

1.4 System Chassis Dimensions

The shipping dimensions of the Sun Fire B1600 blade system chassis are listed in TABLE 1-1 and shown in FIGURE 1-1 and FIGURE 1-2.

TABLE 1-1 System Chassis Dimensions

Dimension	US Measurement	Metric Measurement
Overall width	17.64 in.	448.0mm
Overall width, including sacrificial lifting handles	20.08 in.	510.0mm
Depth	26.81 in.	681.0mm

TABLE 1-1 System Chassis Dimensions *(Continued)*

Dimension	US Measurement	Metric Measurement
Overall height	5.16 in.	131.0 mm
Overall height, including sacrificial lifting handles	6.22 in.	158.0 mm
Weight (fully populated)	99 lb	45 kg

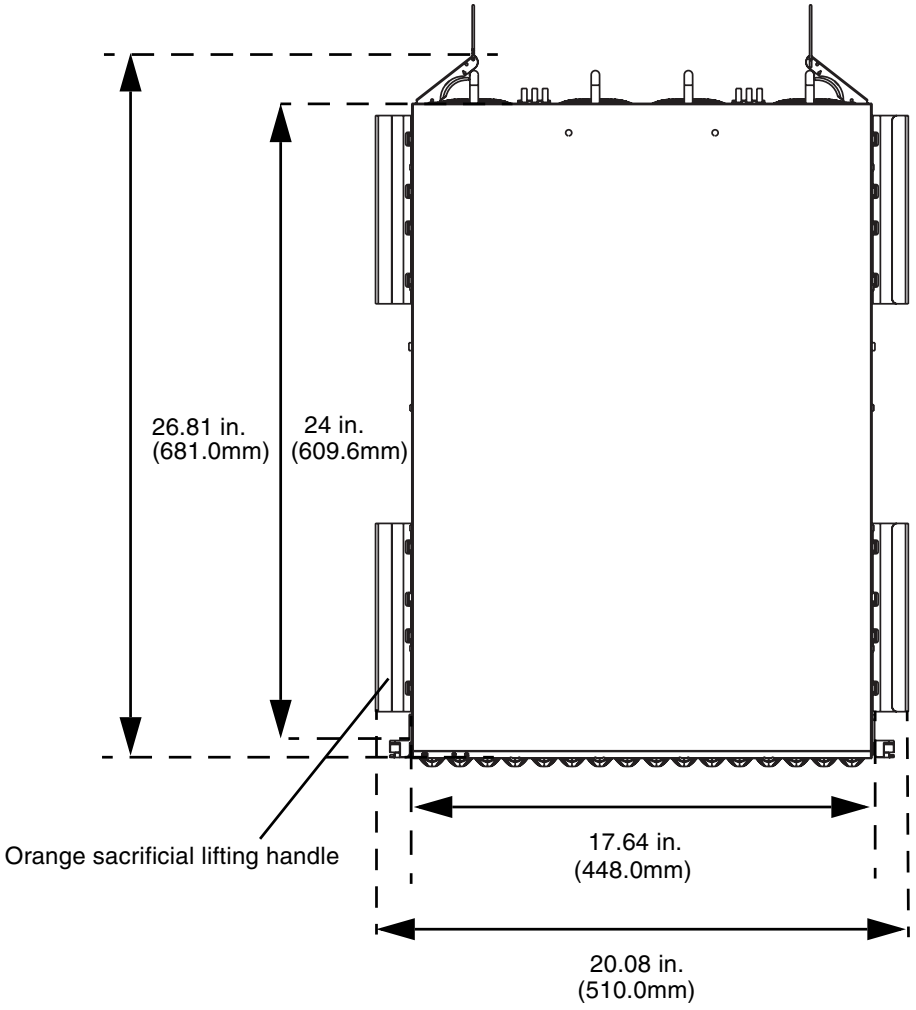

FIGURE 1-1 System Chassis Dimensions (Top View)

The system chassis is designed to fit in a 800mm rack. If you want to install the system chassis in a rack less than 800mm deep, check the suitability of the rack before you start the installation.

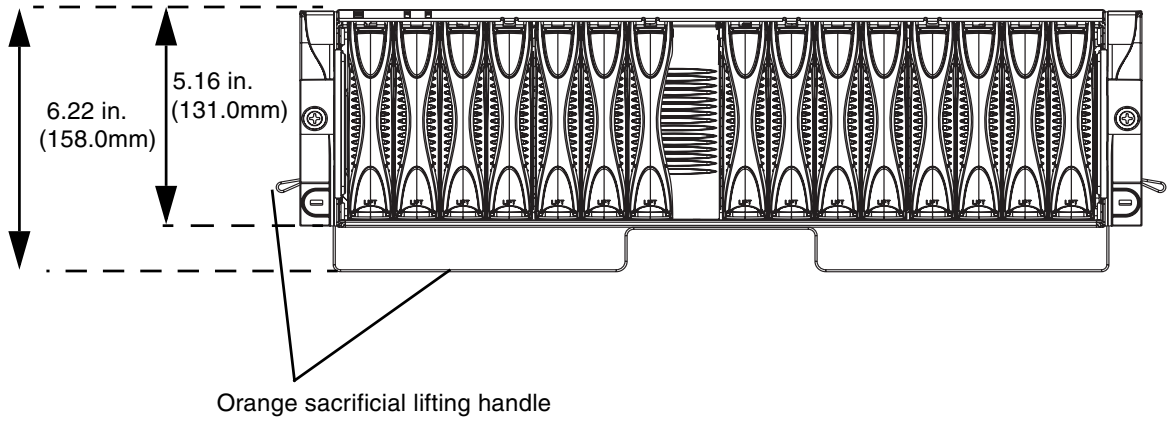

FIGURE 1-2 System Chassis Dimensions (Front View)

1.5 Site Preparation

This section contains information about the following system and site requirements for the Sun Fire B1600 blade system chassis:

- Section 1.5.1, "System Cooling Requirements" on page 1-8
- Section 1.5.2, "Operating Power Limits and Ranges" on page 1-12
- Section 1.5.3, "Estimating Power Consumption" on page 1-12

1.5.1 System Cooling Requirements

This section provides the general environmental parameters and airflow requirements for the Sun Fire B1600 blade system chassis.

Note – The Sun Fire B1600 blade system chassis uses front-to-back forced air cooling.

1.5.1.1 General Environmental Parameters

You can operate and store the system safely in the conditions detailed in TABLE 1-2, FIGURE 1-3 and FIGURE 1-4.

TABLE 1-2 Operating and Storage Specifications

Specification	Operating	Storage
Ambient temperature	5°C to 35°C maximum ambient temperature is derated by 1°C per 500m altitude above 500m	-40°C to 65°C
Relative humidity	10% to 90% RH non-condensing, 27°C max wet bulb	up to 93% RH non-condensing, 38°C max wet bulb
Altitude	-400m up to 3000m	-400m up to 12000m

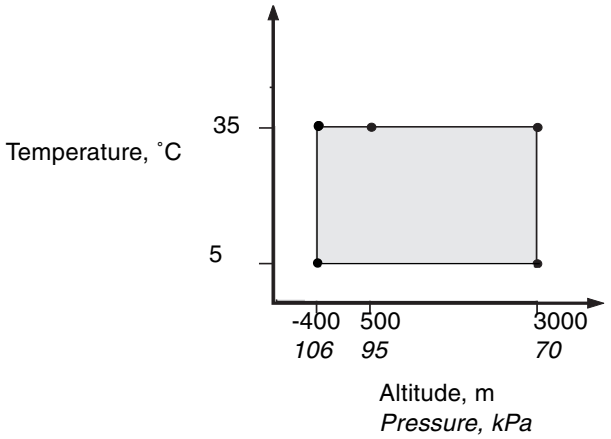

FIGURE 1-3 Temperature and Altitude Operating Ranges

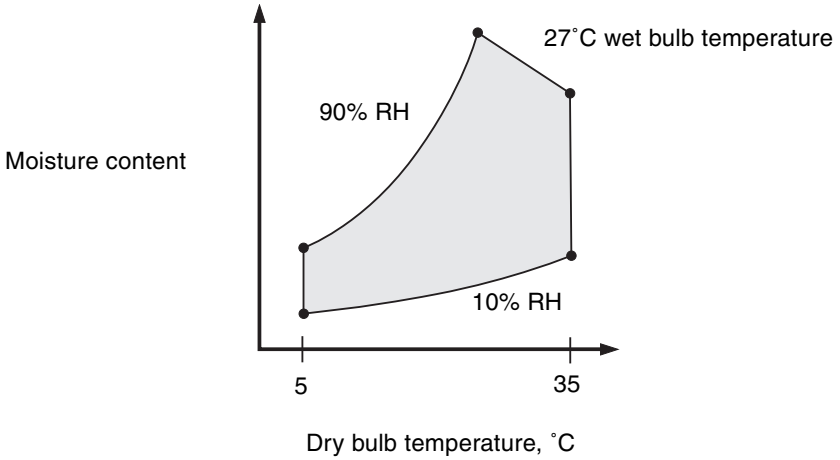

FIGURE 1-4 Temperature and Relative Humidity Ranges

Recommended Environment Parameters

Your environmental control system must provide intake air for the server which complies with the limits specified in "General Environmental Parameters" on page 1-8.

To avoid overheating, *do not* direct warmed air:
- towards the front of the cabinet or rack
- towards the server access panels

Note – When you receive your system, leave it in the shipping crate at its final destination for 24 hours in the environment in which you will install it. This is to prevent thermal shock and condensation.

The operating environmental limits in TABLE 1-2 reflect what the systems have been tested to, in order to meet all functional requirements. Operating computer equipment in extremes of temperature or humidity increases the failure rate of hardware components. To minimize the chance of component failure, use the server within the optimal temperature and humidity ranges.

Ambient Temperature

An ambient temperature range of 21˚C to 23˚C is optimal for system reliability. At 22˚C it is easy to maintain safe relative humidity levels. Operating in this temperature range provides a buffer in the event of the environmental support systems failing.

Ambient Relative Humidity

Ambient relative humidity levels between 45% and 50% are the most suitable for data processing operations in order to:

- prevent corrosion
- provide an operating time buffer in the event of environmental control system failure
- help avoid failures caused by the intermittent interference from static discharges that occur when relative humidity is too low.

Electrostatic discharge (ESD) is easily generated and less easily dissipated in areas where the relative humidity is below 35%, and becomes critical when levels drop below 30%.

1.5.1.2 Airflow Requirements

The Sun Fire B1600 blade system chassis has been designed to function in a natural convection airflow when mounted in a rack or cabinet and uses front-to-back forced air cooling. To meet the declared environmental specification follow these guidelines:

- The Sun Fire B1600 blade system chassis uses PSU fans that can achieve a maximum airflow of 160 cfm in free air. Ensure that there is sufficient airflow through the rack or cabinet.
- The rack or cabinet in which the system chassis is mounted must provide inlet air at the front of the system chassis. The airflow exhausts horizontally from the PSU and SSC modules located at the back of the system chassis and must be able to leave the cabinet.
- Inlet and exhaust ventilation must both have a minimum open area of 22 in^2 (142 cm^2) for each system chassis.
- The use of perforated or solid door panels must allow adequate airflow to the system chassis when the cabinet doors are closed.

1.5.1.3 Estimating the Heat Dissipation

To estimate the heat generated by a Sun Fire B1600 blade system chassis convert the figure for the system's power consumption from watts to BTU/hr.

The formula to convert from watts to BTU/hr is to multiply the power in watts by 3.415. For example:

total power consumption of blades + total power consumption of SSCs + total power consumption of PSUs x 3.415 = *xxxxx* BTU/hr

For power consumption figures for the SSC, the PSU and blades, see "Estimating Power Consumption" on page 1-12

Note – Do not install multiple Sun Fire B1600 blade system chassis in a four-post rack or cabinet unless your cooling system is capable of dissipating in excess of the total thermal load. For example:
(5 x 700W each system) x 3.415 = 11952.5 BTU/hr

1.5.2 Operating Power Limits and Ranges

TABLE 1-3 Operating Power Limits and Ranges

Description	Operating Limit or Range
Maximum operating current *	16A @ 110VAC 8A @ 240VAC
Maximum power supply rating †	12A @ 110VAC 6A @ 240VAC
Maximum in-rush current‡	20A
Operating input voltage range (auto-ranging)	110 to 240 VAC
Voltage frequency range	47 to 63Hz
Power factor	0.8 to 1.0
BTU/Hr rating	3415 BTU/Hr

* Each power cord provides approximately one half of the input current during normal system operation.

† Currents up to the maximum power supply rating might be required for future product upgrades

‡ The in-rush current decays to the normal operating current in less than 200 milliseconds. Sequencing of power to multiple units is not required, as the peak current is less than seven times the operating current.

1.5.3 Estimating Power Consumption

To estimate the total power consumption for one or more Sun Fire B1600 blade system chassis installed in a single rack or cabinet, add together the individual power requirement figures for each system chassis you have installed, using the values in TABLE 1-4. A minimum system configuration would be:

One blade + one SSC + two PSUs

TABLE 1-4 Power Consumption

System Chassis Components	Power Consumption (max)
one SSC	Add 65W per SSC
one PSU	Add 110W per PSU
one B100s Blade	Add 35W per blade
one B100x Blade	Add 48W per blade
one B200x Blade	Add 126W per blade

CHAPTER 2

Rack Options and Placement

This chapter provides details about the racks and cabinets into which you can install a Sun Fire B1600 blade system chassis, and contains the following sections:

- Section 2.1, “Rack Options” on page 2-1
- Section 2.2, “Service Access” on page 2-2
- Section 2.3, “Rack and Floor Loading” on page 2-3
- Section 2.4, “Rack and Cabinet Safety” on page 2-3

2.1 Rack Options

You can install the Sun Fire B1600 blade system chassis into these 19-inch and 23-inch racks:

- 19-inch two-post rack with a post depth between 3in. (76.2mm) and 6in. (152.4mm)
- 19-inch four-post IEC297/EIA310-D rack with a distance between mounting rails from 24.6in. (625 mm) to 36.4in. (925mm)
- 23-inch two-post rack with a post depth of 5in. (127mm). These are intended for use with telco seismic frames
- 23-inch four-post rack

Note – You can also install the system into a cabinet, subject to adequate cabinet ventilation, power and floor loading considerations. Read this chapter for further details.

The vertical mounting hole pattern of the rack must conform to the standard dimensions given in TABLE 2-1 and shown in FIGURE 2-1.

TABLE 2-1 Mounting Hole Pattern Dimensions

Standard	Pattern
IEC297/EIA310/ RETMA (RU)	Repeating pattern of 5/8 in. (15.7 mm), 5/8 in. (15.7 mm), 1/2 in. (12.7 mm)
IEC917/ETSI (SU)	Constant pitch of 0.98 in. (25 mm)

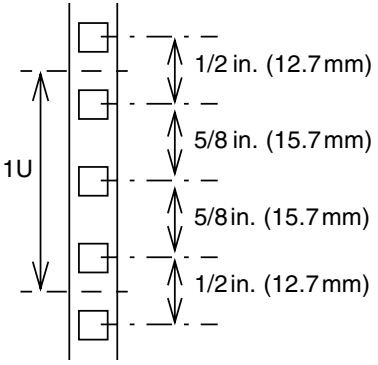

FIGURE 2-1 EIA/RETMA Mounting Hole Pattern Dimensions

2.2 Service Access

The bottom of lowest of the five system chassis must be mounted no lower than 2.95 in. (75 mm) above the bottom of the rack or cabinet to enable removal and fitting of the orange sacrificial lifting handle.

Ensure that units or cables above a Sun Fire B1600 blade system chassis do not protrude beyond the front face of the system chassis to enable proper airflow.

Access to the front and back of the Sun Fire B1600 blade system chassis is required for installation and system maintenance.

Note – If you are installing the system chassis into a cabinet that has a door, you might need to swing the door back 180 degrees, or remove the door altogether.

2.3 Rack and Floor Loading

The rack or cabinet must be capable of supporting a static load of 99lb (45kg) for each fully configured Sun B1600 blade system chassis. Dynamic load considerations are subject to site location and application. You must account for the weight of any cables attached to systems within the rack, as well as additional hardware installed within the rack (power boxes, and so on).

See your manufacturer's loading guidelines to avoid overloading the rack or cabinet.

Check the maximum floor loading weight for the installation area before calculating the number of system chassis to install in a rack or cabinet.

2.4 Rack and Cabinet Safety

Racks or cabinets that contain Sun Fire B1600 blade system chassis must be anchored to the floor or to adjacent frames, using the manufacturer's instructions.

Free-standing racks or cabinets with a footprint of less than 23.6in. x 23.6in. (600mm x 600mm) are likely to be unstable and should be treated with caution.

Where several system chassis are fitted in a rack or cabinet, only one of them should be withdrawn for service at any one time.

See the *Sun Fire B1600 Blade System Chassis Compliance and Safety Manual* for further safety information.

Caution – If the system chassis is installed in a closed or multi unit rack assembly, the operating ambient temperature of the rack or cabinet environment might exceed the room ambient. Ensure that rack environment ambient temperature does not exceed 95°F (35°C).

Caution – Mounting of the system chassis in a rack or cabinet should be such that a hazardous condition is not created due to uneven mechanical loading or weight distribution.

CHAPTER 3

Installing the System Chassis In a Rack or Cabinet

This chapter provides instructions for installing the Sun Fire B1600 blade system chassis into a rack or cabinet. See Chapter 2 for information about which racks you can use with the Sun Fire B1600 blade system chassis.

This chapter contains the following sections:

- Section 3.1, "Installing the System Chassis In a Four-Post Rack or Cabinet" on page 3-1
- Section 3.2, "Installing the System In a Two-Post Rack" on page 3-11
- Section 3.3, "What to Do Next" on page 3-16

3.1 Installing the System Chassis In a Four-Post Rack or Cabinet

This section contains instructions for installing a Sun Fire B1600 blade system chassis in a four-post rack or cabinet.

The system chassis is shipped with orange sacrificial lifting handles which assist in handling the system chassis. The handles must be stored in a safe place after the system chassis is installed in a rack or cabinet.

Note – The figures in this section are simplified to show only the rails to which the rack brackets are attached.

3.1.1 Contents of the Four-Post Rackmount Kit

The 19-inch, four-post rackmount kit comprises:

- One Rack Buddy
- Two rackmount brackets
- One set of 10-32 UNF and M6 Sun Microsystems rackmounting screws for Sun racks
- Four M4 screws
- One rack bracket spacer

You must supply the appropriate screws to attach the brackets to any rack not supplied by Sun Microsystems.

3.1.2 Using the Rack Buddy

The Rack Buddy card helps you to find out which rackmount holes are appropriate for installing the system chassis.

1. **Hold the Rack Buddy to the rack so that the bottom of the Rack Buddy is either just above the top of a system already installed in the rack or above the bottom of the rack (**FIGURE 3-1**).**

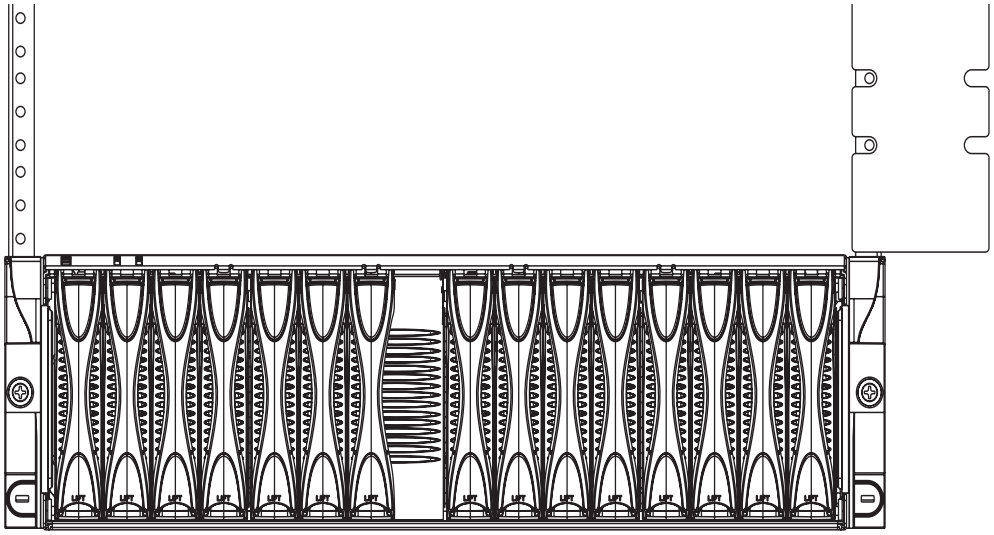

FIGURE 3-1 Using the Rack Buddy

2. **Note which holes are in alignment with the Rack Buddy recesses.**

   Use these holes when you attach the rack brackets to the rack. Continue with Section 3.1.3, "Attaching the Brackets to the Four-Post Rack" on page 3-3.

3.1.3 Attaching the Brackets to the Four-Post Rack

1. **If required, slide together the front and back sections of the rack brackets (FIGURE 3-2).**

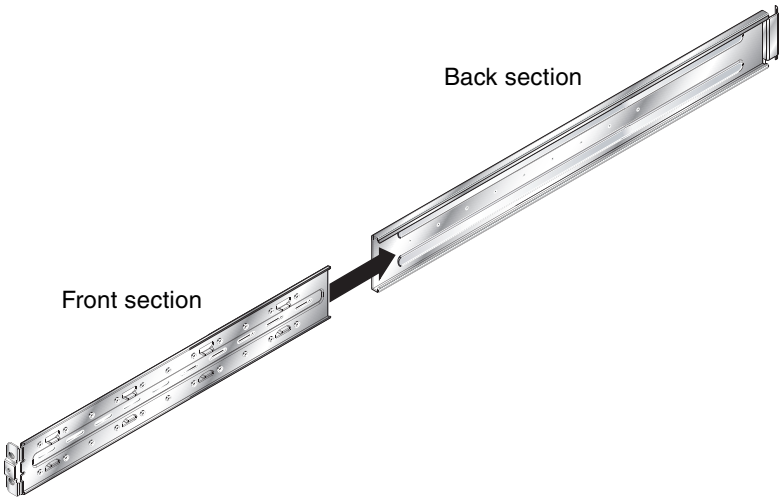

FIGURE 3-2 Sliding the Front Bracket Section Into the Back Bracket Section (19-Inch, Four-Post Rack)

2. **Extend each rack bracket to the length required to fit in the rack or cabinet.**

3. **Insert two M4 screws (supplied with the rack mount kit) to each bracket, and finger tighten to connect the front and back bracket sections together (FIGURE 3-3).**

Note – Insert one screw through the slot furthest away from the front of the rack bracket. Insert the other screw through a suitable slot nearest the front edge of the back bracket section. Spacing the screws as far apart as possible provides greater bracket rigidity (see FIGURE 3-3).

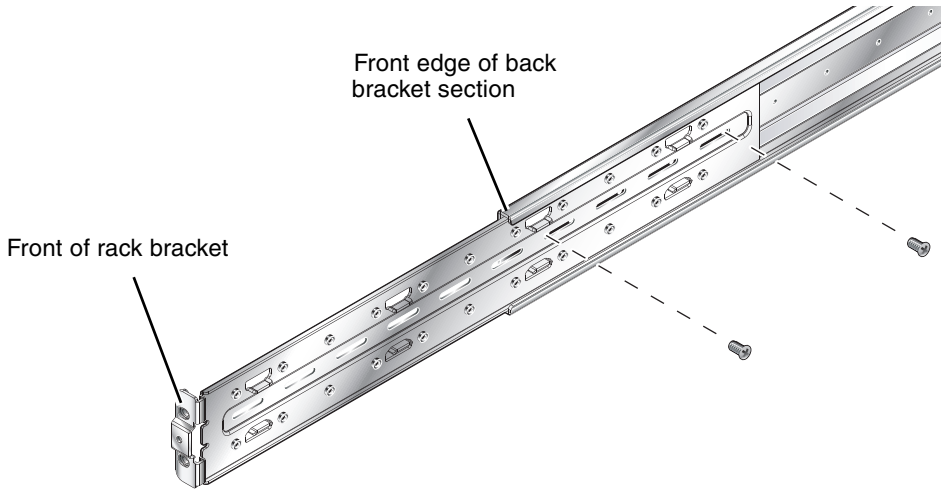

FIGURE 3-3 Connecting the Front and Back Four-Post Bracket Sections (19-Inch, Four-Post Rack)

4. **Attach each end of the bracket to the rack or cabinet using the screws appropriate to the rack or cabinet. Do not fully tighten the screws.**

   Use the rack holes you noted as part of Section 3.1.2, "Using the Rack Buddy" on page 3-2.

   The mounting holes in the rack bracket are oversized to allow installation in most racks or cabinets.

5. **Insert the rack bracket spacer in the front of the rack brackets.**

   Push the rack spacer location pins fully in the middle hole of each rack bracket (FIGURE 3-4).

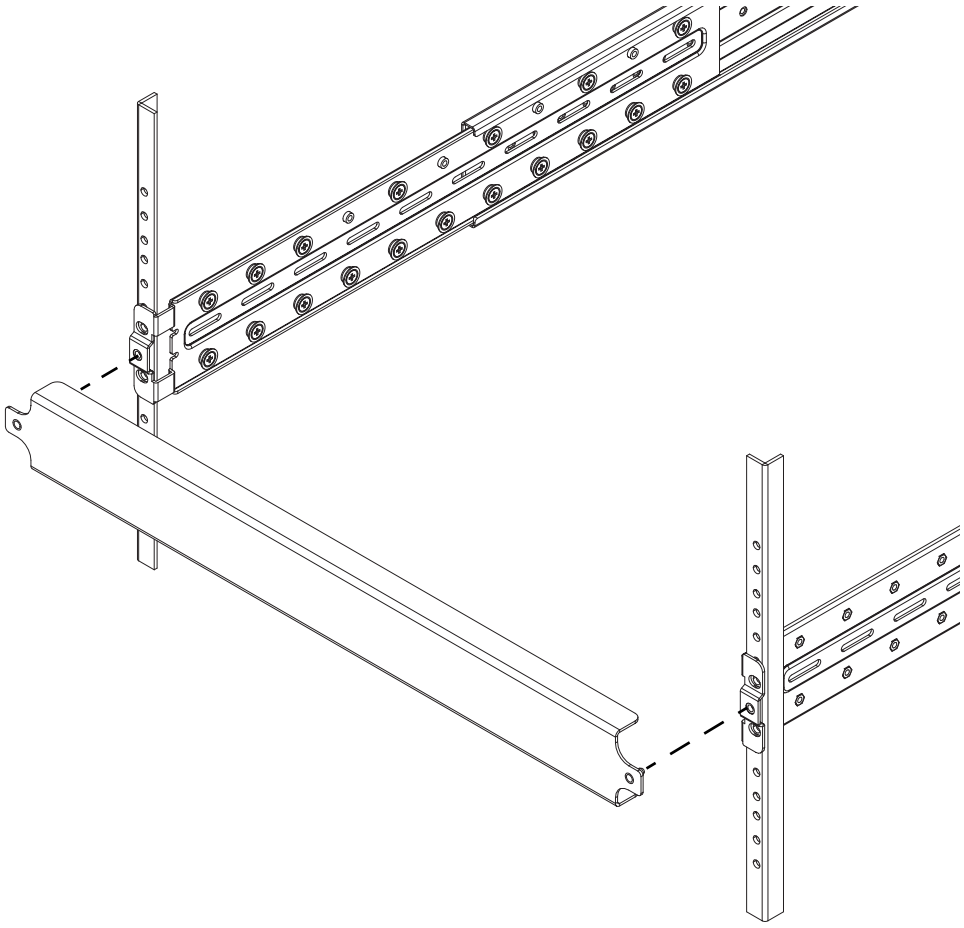

FIGURE 3-4 Inserting the Rack Bracket Spacer

6. **Tighten the front rack bracket screws fully and remove the rack bracket spacer.**
7. **Repeat Step 5 through Step 6 for the back of the bracket.**
8. **Fully tighten the M4 screws in the middle of the brackets to complete the bracket installation.**

3.1.4 Installing the System Chassis In the Four-Post Rack or Cabinet

Caution – To reduce the possibility of tipping the rack or cabinet during installation ensure that the rack stability features are in use if the rack or cabinet is not bolted down.

Caution – Keep the system chassis in the horizontal position when lifting it by the sacrificial lifting handles. The handles are not designed to hold a system that is tipped from the horizontal position.

Caution – When inserting the system chassis into the rack, it is essential that the chassis is kept parallel to the front of the rack. On final insertion into the rack, apply equal force to both sides of the system chassis to ensure correct installation.

1. **Take the system chassis out of the packaging and place it on a flat surface.**

   Use the orange sacrificial lifting handles to lift the system chassis.

Caution – Do not attempt to lift a populated system chassis by yourself. A fully populated system chassis weighs approximately 99lb (45kg) and must be lifted by at least two people.

2. **Remove the module retaining pins (**FIGURE 3-5**).**

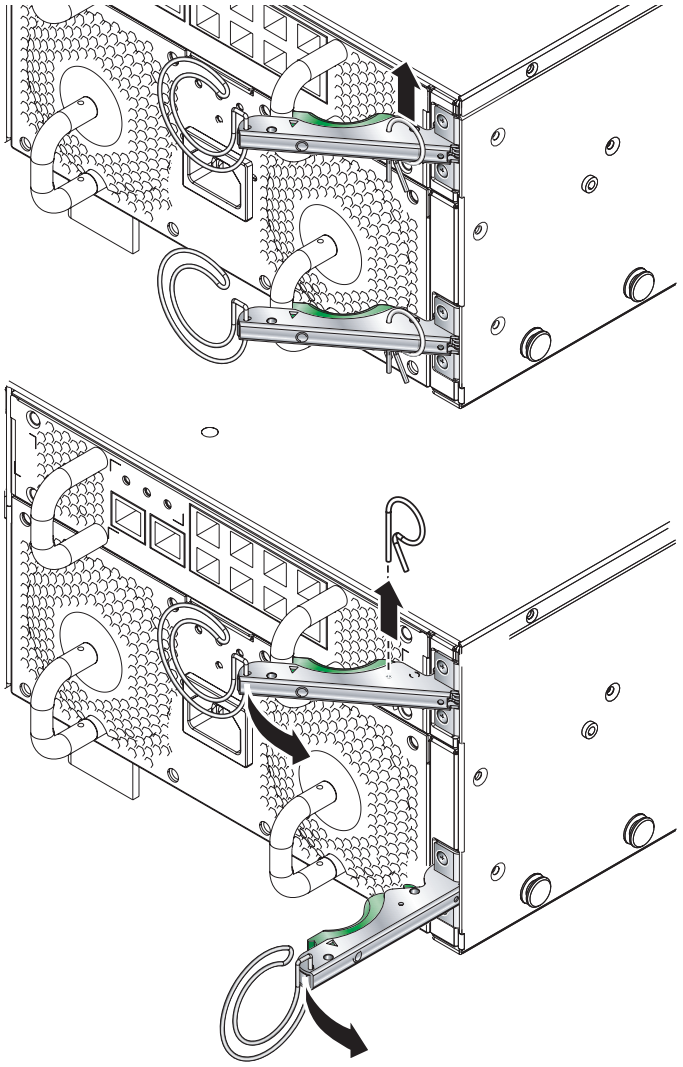

FIGURE 3-5 Removing the Module Retaining Pins

3. **Disengage the back sacrificial lifting handle (**FIGURE 3-6**).**

   Slide the sacrificial lifting handle toward the back of the system chassis and then push the handle down.

4. **Lift the system chassis up to the rack or cabinet.**

   Use one hand to grasp the orange front sacrificial lifting handle, and hold the bottom of the system chassis with your other hand. Do not lift the system chassis

5. **Align the system chassis to the rack brackets (**FIGURE 3-6**).**

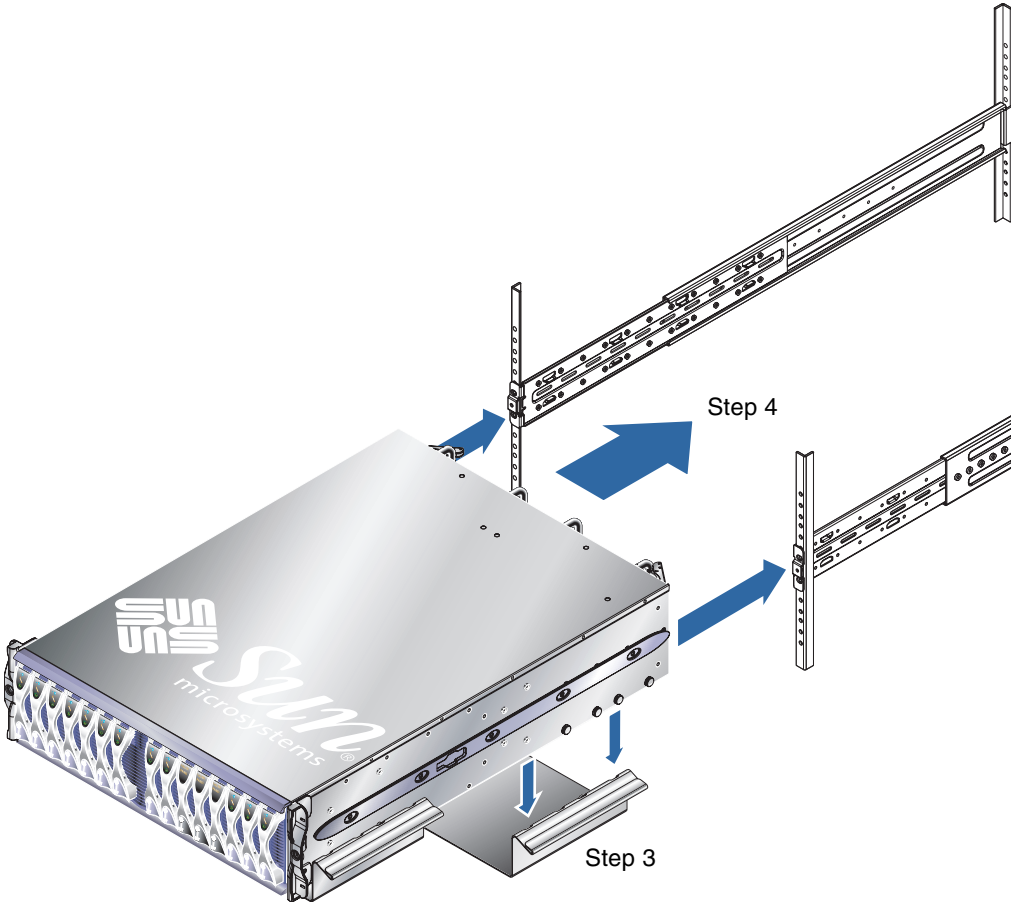

FIGURE 3-6 Aligning the System Chassis to the Brackets (19-Inch, Four-Post Rack)

6. **Slide the system chassis into the rack (**FIGURE 3-7**).**

7. **Remove the front sacrificial lifting handle (**FIGURE 3-7**).**

   Slide the sacrificial lifting handle toward the back of the system chassis and then pull down.

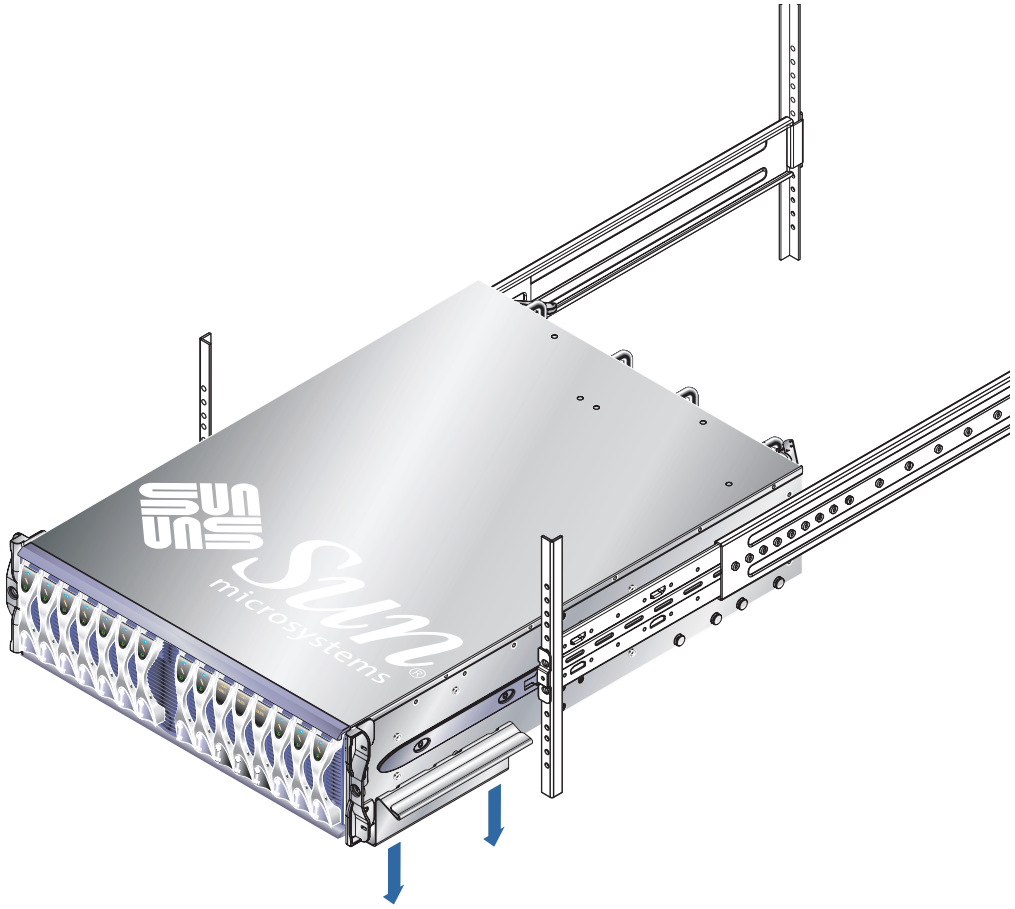

FIGURE 3-7 Removing the Sacrificial Lifting Handle (19-Inch, Four-Post Rack)

8. **Push the system chassis fully into the rack.**

   Take care to keep the system chassis straight during insertion.

9. **Tighten the captive retaining screws located at the front of the system chassis (**FIGURE 3-8**).**

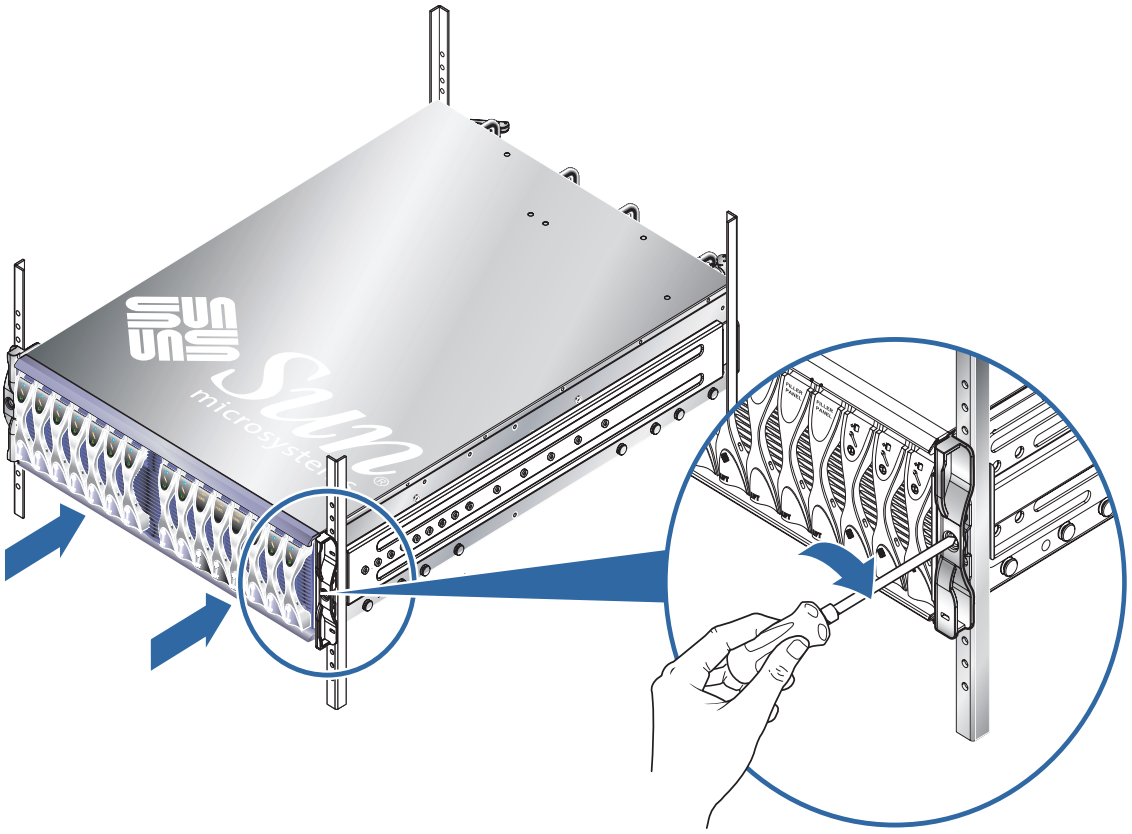

FIGURE 3-8 Tightening the Captive Retaining Screws (19-Inch, Four-Post Rack)

10. **Go to Section 3.3, "What to Do Next" on page 3-16.**

3.2 Installing the System In a Two-Post Rack

This section contains instructions for installing a Sun Fire B1600 blade system chassis into a non-specific two-post rack. These instructions are for both 19-inch and 23-inch rackmount options.

The system chassis is shipped with orange sacrificial lifting handles for handling the system chassis. The handles must be stored in a safe place after the system chassis is installed in a rack or cabinet.

Note – The figures in this section are simplified to show only those rails to which the system chassis rack brackets are attached.

3.2.1 Contents of the Two-Post Rackmount Kit

The two-post rackmount kit comprises:

- The Rack Buddy
- Four rackmount brackets
- One set of 10-32 UNF Sun Microsystems rackmounting screws for Sun racks

You must supply the appropriate screws to attach the brackets to any rack not supplied by Sun Microsystems.

3.2.2 Installing the System Chassis In a Two-Post Rack

1. **Place the system chassis on a flat surface and remove the sacrificial lifting handles.**

   Slide the sacrificial lifting handle toward the back of the system chassis and then push the handle down.

2. **Remove the module retaining pins (**FIGURE 3-9**).**

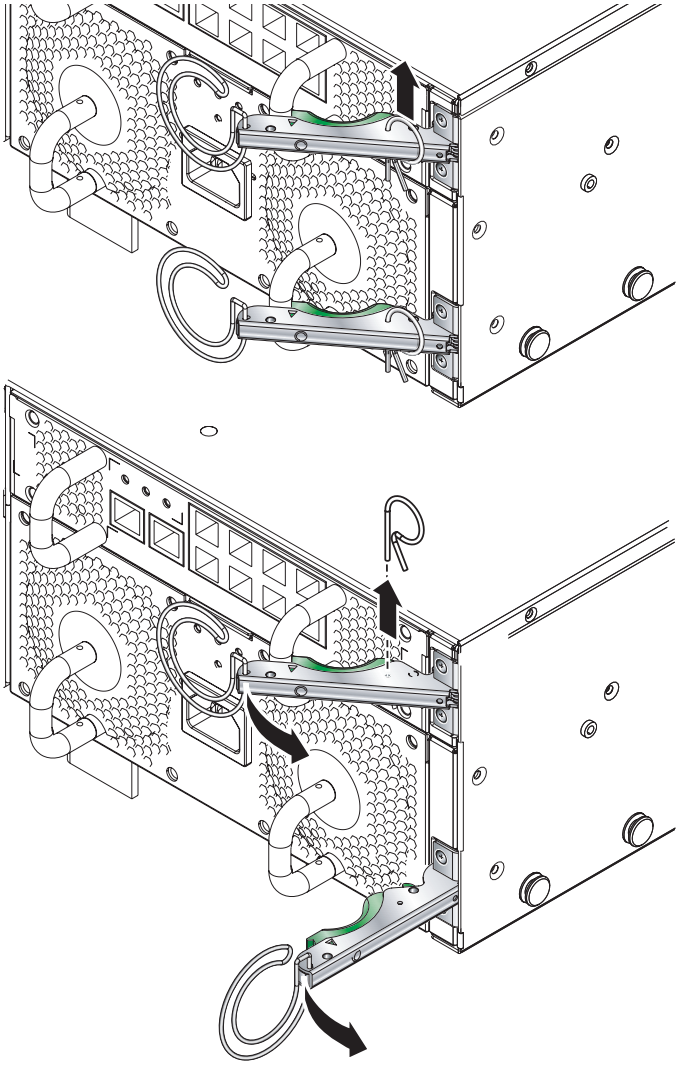

FIGURE 3-9 Removing the Module Retaining Pins

3. **Attach the front brackets to the system chassis (**FIGURE 3-10**).**

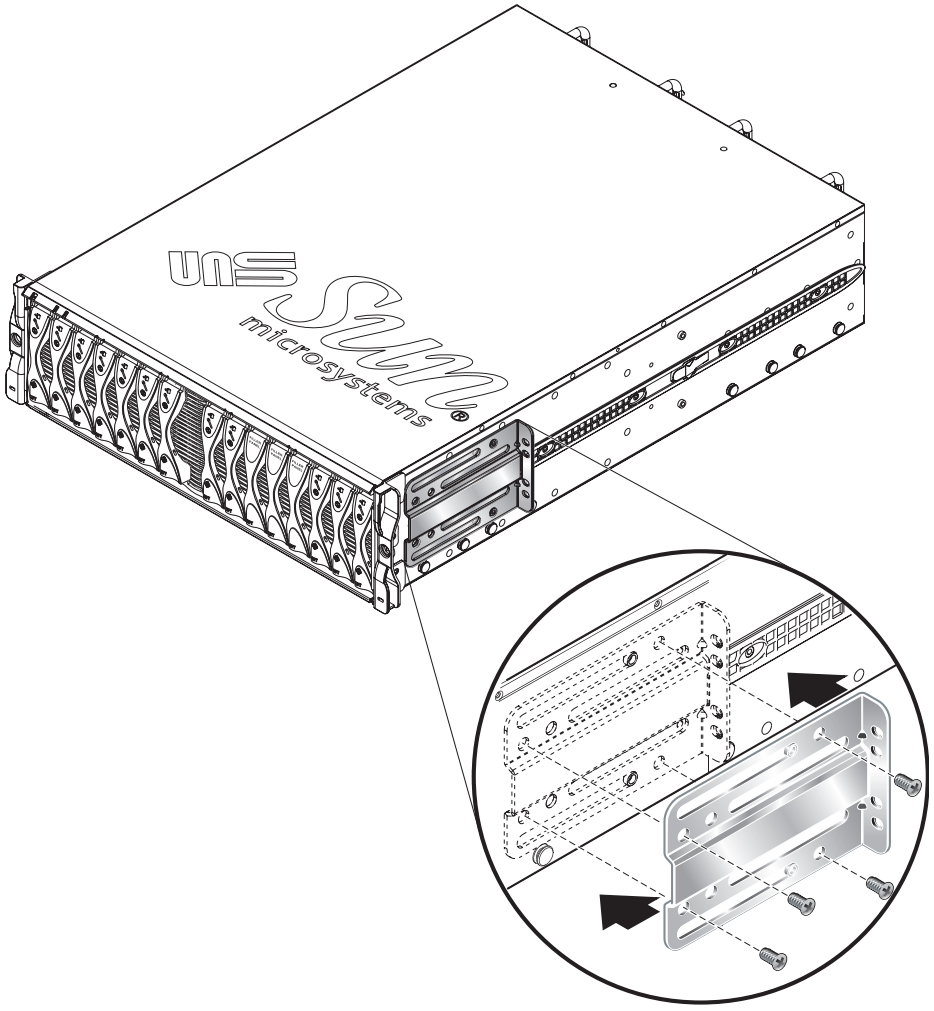

FIGURE 3-10 Attaching the Two-Post Front Brackets to the System Chassis (19-Inch, Two-Post Rack)

4. **Hold the system chassis up to the rack and attach the front brackets (**FIGURE 3-11**).**

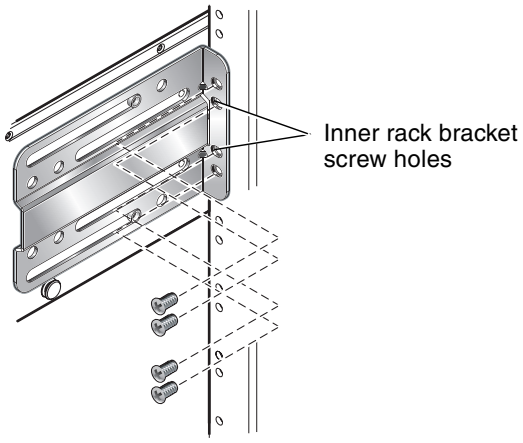

FIGURE 3-11 Attaching the Front of the System Chassis to the Rack (19-Inch, Two-Post Rack)

Caution – A fully populated system chassis weighs 99 lb (45 kg) approximately and must be lifted by at least two people. A third person is required to attach the front brackets to the rack.

Note – The two inner rack bracket screw holes are the rackmount holes identified by the Rack Buddy. See Section 3.1.2, "Using the Rack Buddy" on page 3-2.

5. **Attach the back brackets to the system chassis and to the two-post rack (**FIGURE 3-12**).**

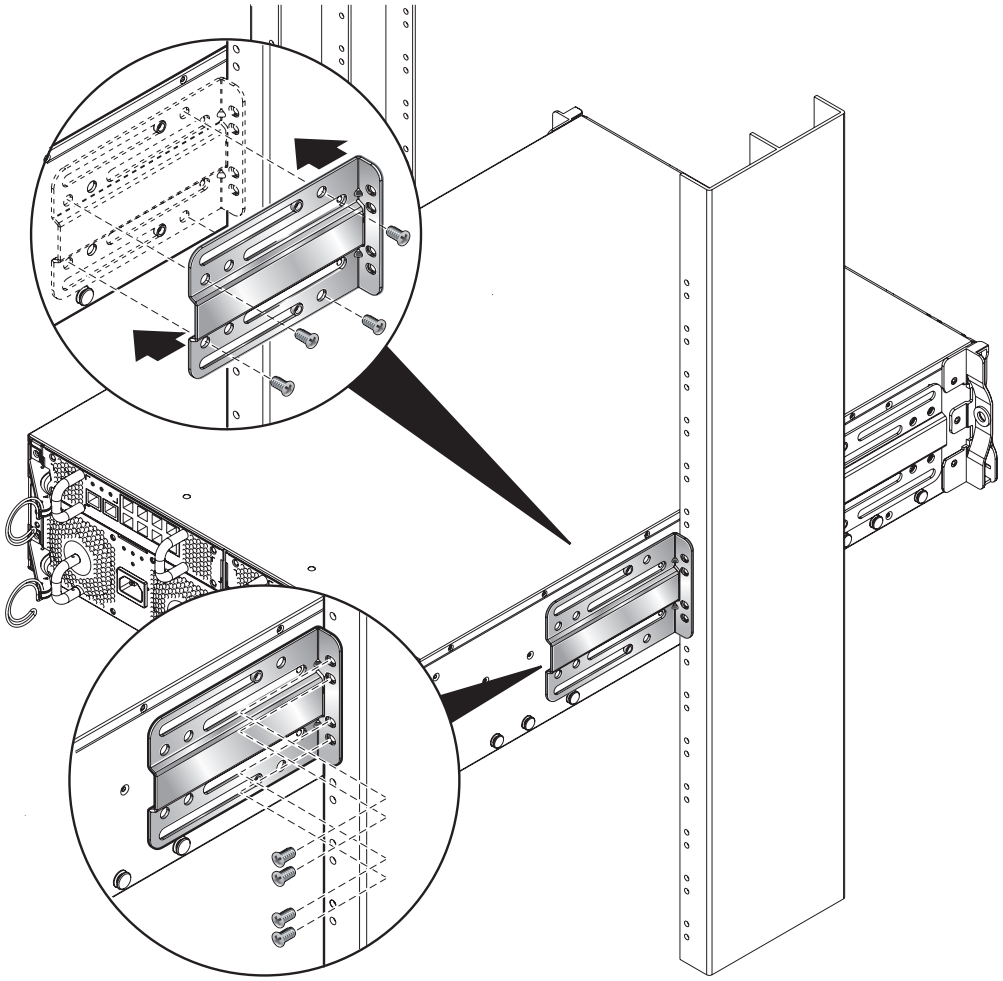

FIGURE 3-12 Attaching the Back Brackets (19-Inch, Two-Post Rack)

6. **Go to Section 3.3, “What to Do Next” on page 3-16.**

3.3 What to Do Next

The Sun Fire B1600 blade system chassis can be installed as:

- A fully populated system
- A populated system chassis that requires the installation of blades

If you have installed a system chassis that requires blade installation, continue with Chapter 4.

If you have installed a fully populated Sun Fire B1600 blade system chassis, continue with Section 5.1, "Location of Ports and Power Inlets" on page 5-2.

CHAPTER 4

Removing and Installing Modules

This chapter provides instructions for installing Sun Fire B1600 server blades of filler panels, Power Supply Units (PSUs) and Switch and System Controllers (SSC).

The Sun Fire B1600 blade system chassis can be ordered in two configuration options:

- A fully populated system chassis

  A fully populated system chassis contains two Power Supply Units (PSUs), two Switch and System Controllers (SSCs), and a combined total of up to 16 blades and filler panels.

- A partially populated system chassis that requires the installation of blades

  A partially populated system contains two Power Supply Units (PSUs), two Switch and System Controllers (SSCs), and 16 filler panels.

This chapter provides the procedures for removing filler panels, if necessary, and installing blades in the system chassis. It also provides instructions for removing and inserting PSUs and SSCs while the system is powered down. It contains the following sections:

- Section 4.1, "Removing and Installing Blades or Filler Panels" on page 4-2
- Section 4.2, "Removing and Installing a PSU" on page 4-9
- Section 4.3, "Removing and Installing a Switch and System Controller (SSC)" on page 4-15
- Section 4.4, "What to Do Next" on page 4-22

Note – The procedures contained in this section assume that the system chassis is unpowered. See the *Sun Fire B1600 Blade System Chassis Administration Guide* for instructions on removing a module from a powered system chassis.

4.1 Removing and Installing Blades or Filler Panels

The system chassis contains 16 slots. It can hold a combination of single-width blades, double-width blades and filler panels. Double-width blades occupy two adjacent slots in the system chassis.

FIGURE 4-1 shows a system chassis containing single-width blades and a double-width blade.

Note – Be aware that the system chassis contains three internal dividing walls. Double-width blades must be installed in two available slots between these internal dividing walls.

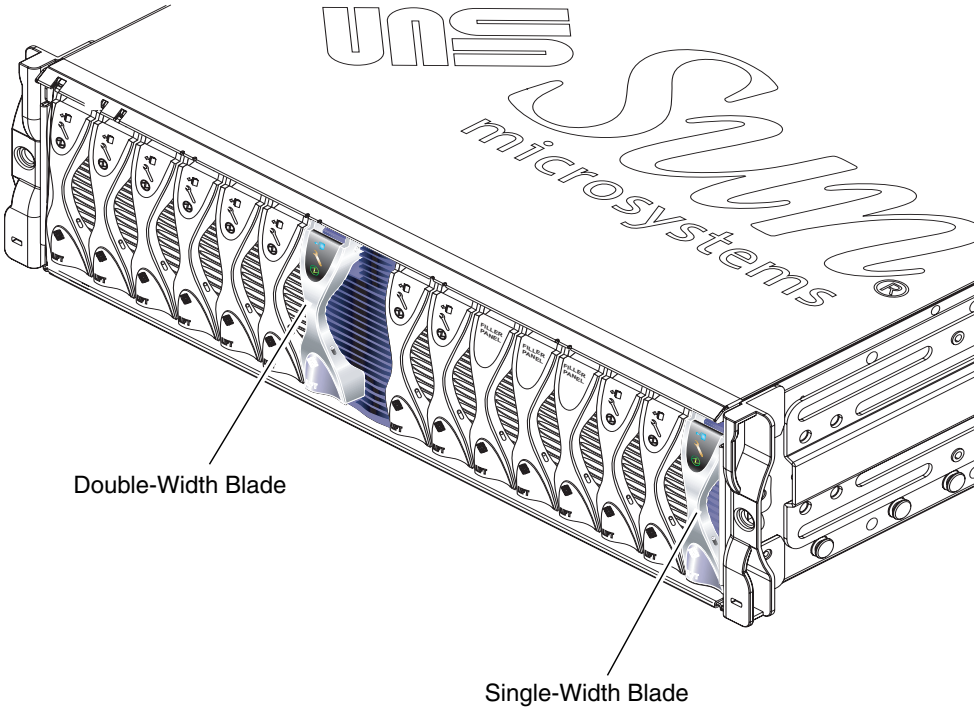

FIGURE 4-1 B1600 System Chassis with Single-width and Double-width Blades

4.1.1 Removing Blades or Filler Panels

The steps in this section refer to removal of a single-width blade. The same steps apply when installing a double-width blade or filler panel.

1. **Insert your finger in the pull recess located at the bottom front of the blade lever and pull gently to disengage the locking mechanism (**FIGURE 4-2**).**

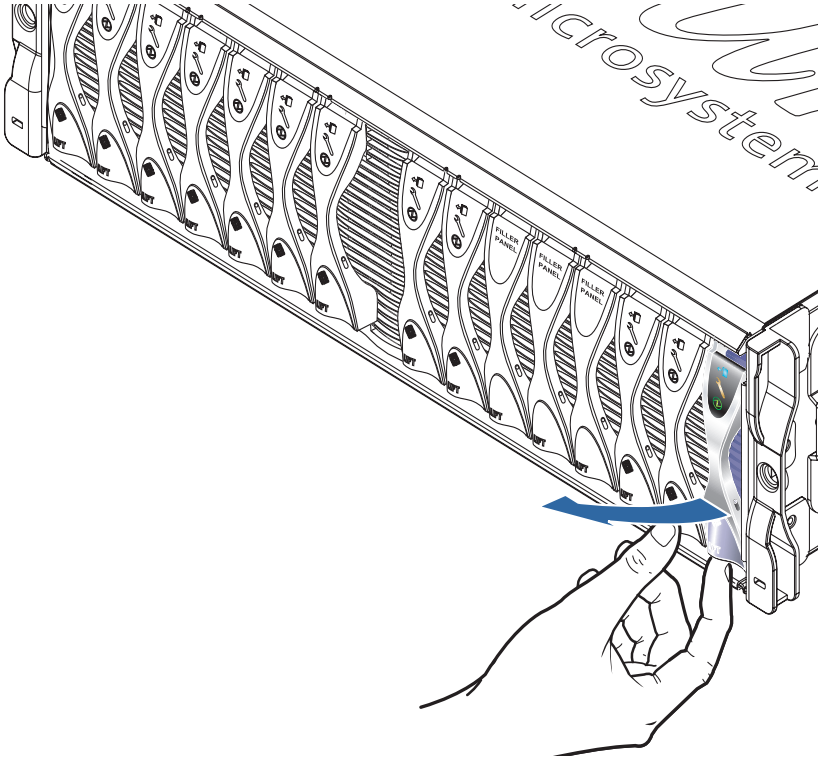

FIGURE 4-2 Disengaging the Blade Locking Mechanism

2. **Pull the lever in a forward and upward motion, causing the blade lever to unlatch and eject the blade partially from the system chassis (FIGURE 4-3).**

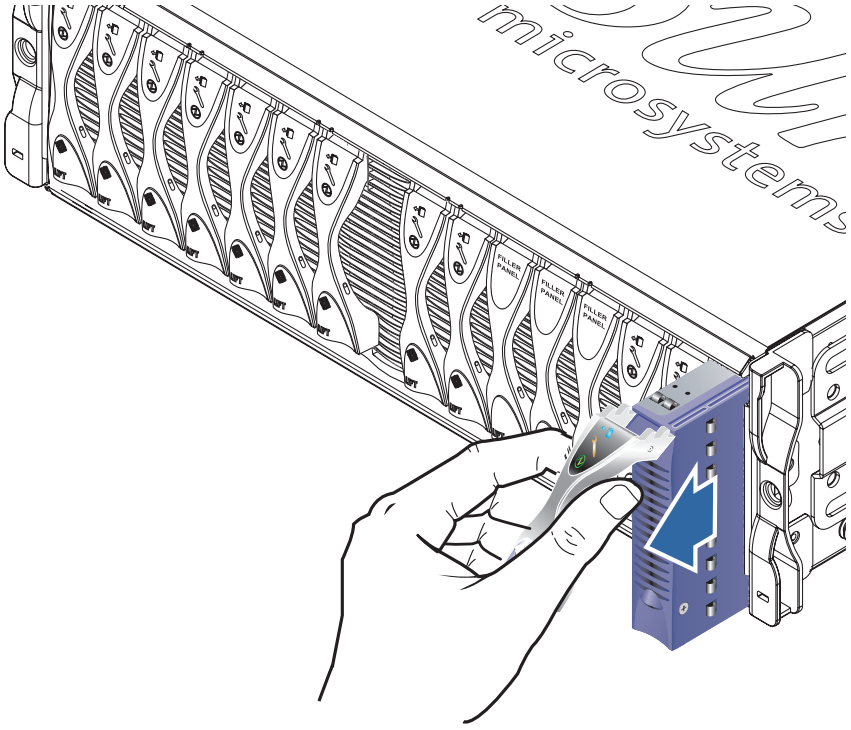

FIGURE 4-3 Ejecting the Blade

3. **Pull the lever to remove the blade from the system chassis (**FIGURE 4-4**).**

   Support the bottom of the blade with your free hand while lifting the blade clear of the system chassis.

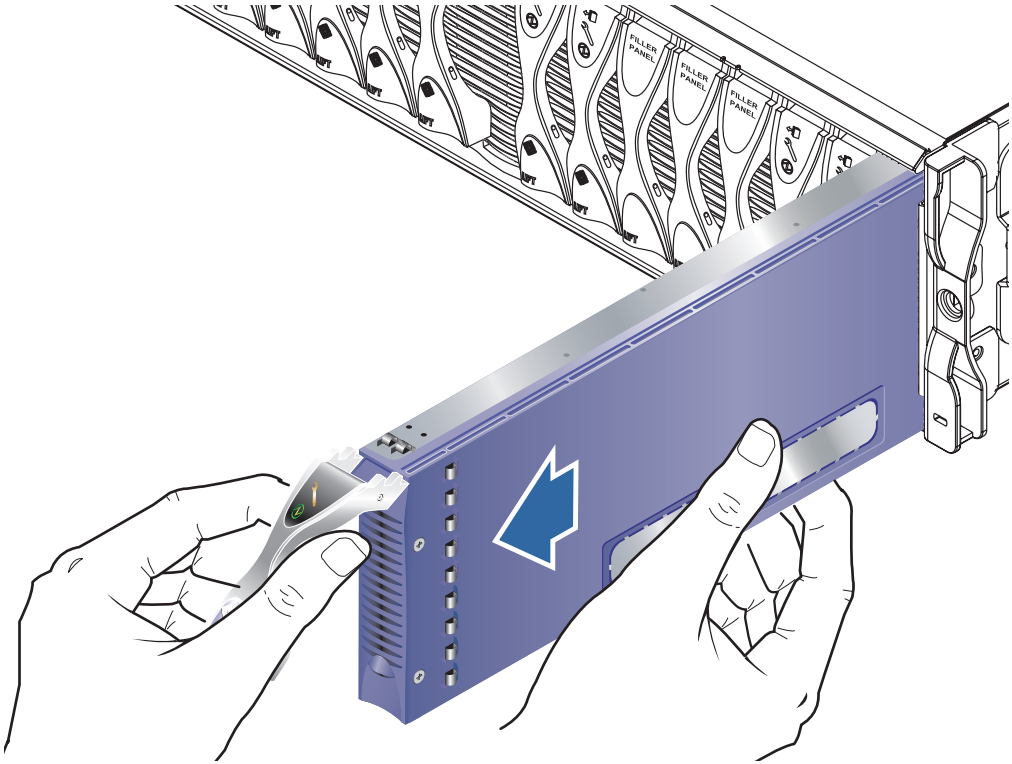

FIGURE 4-4 Removing the Blade

4.1.2 Installing a Blade or Filler Panel

Note – Operating the system chassis with empty blade slots might disrupt airflow through the system chassis and will compromise EMC compliance.

Note – Be aware that the system chassis contains three internal dividing walls. Double-width blades must be installed in two available slots between these internal dividing walls.

The steps below refer to installation of a single-width blade. The same steps apply when installing a filler panel or double-width blade.

1. **If required, open the blade lever by inserting a finger in the pull recess located in lower portion of the blade lever and pull the lever in a forward and upward motion, causing the lever to unlatch (**FIGURE 4-5**).**

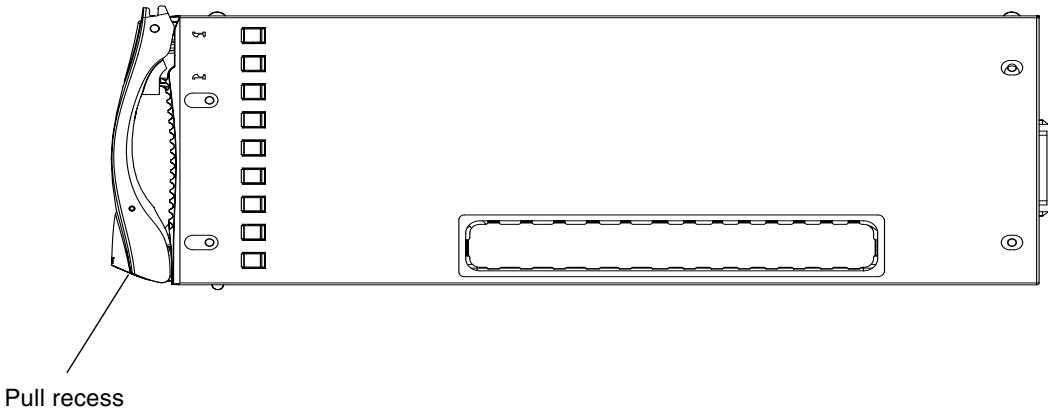

FIGURE 4-5 Blade Locking Mechanism

2. **Align the blade with the empty slot.**

   Ensure that the blade connector is facing towards the system chassis, with the hinge point of the lever mechanism at the top. Support the bottom of the blade with your free hand while lifting the blade up to the system chassis (FIGURE 4-6).

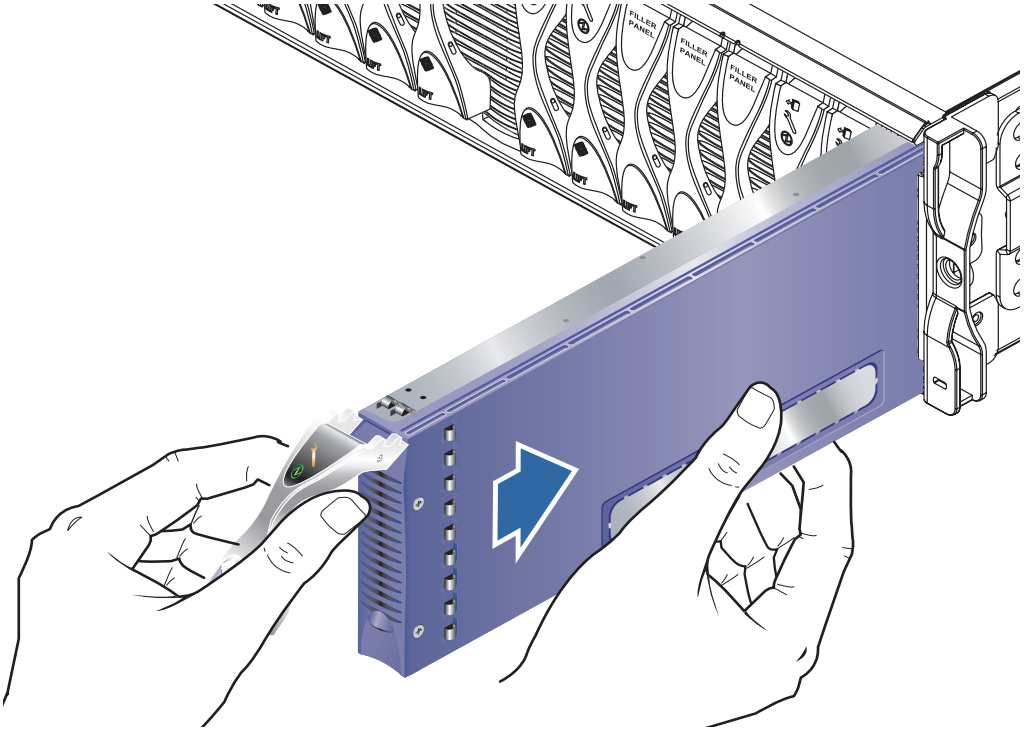

FIGURE 4-6 Aligning and Inserting the Blade

3. **Insert the blade into the empty slot.**

Caution – Ensure that the blade engages with the system chassis guidance system. Failure to align the blade correctly can result in damage to the chassis midplane or the blade connection.

4. **Gently push the blade into the slot until the blade latch ears, on top of the lever, are positioned in the chassis.**

5. **Close the blade lever fully by pushing it down until you feel the latch click in place. This engages the blade into the chassis slot (**FIGURE 4-7**).**

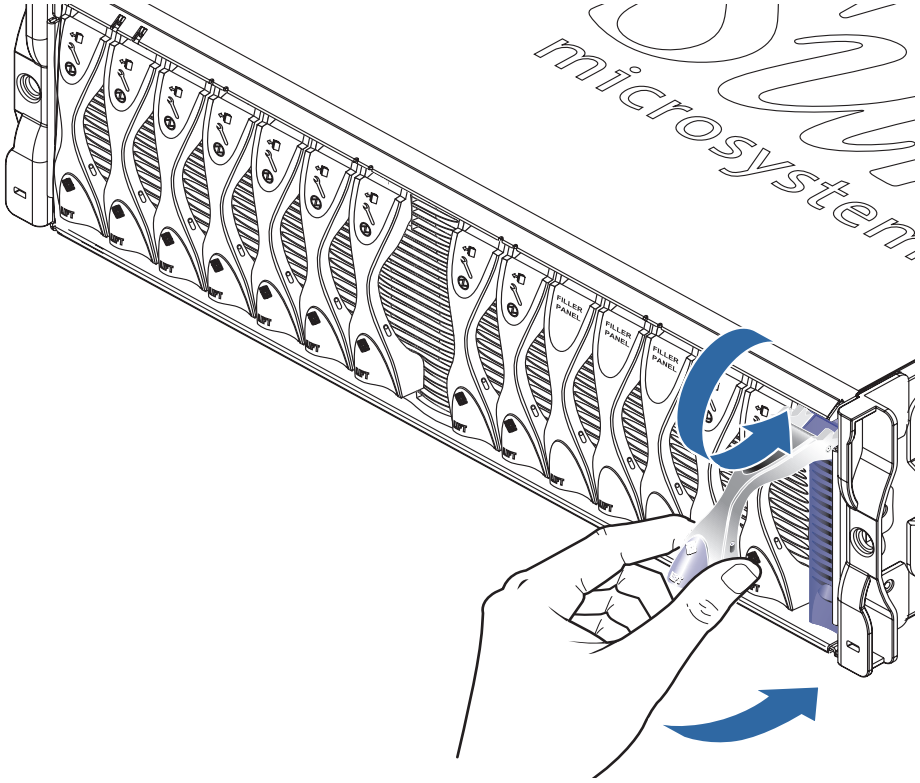

FIGURE 4-7 Closing the Blade Lever Mechanism

4.2 Removing and Installing a PSU

Use the procedures in this section to remove and install a PSU. These are optional procedures for you to familiarize yourself with the mechanism or to check the PSU Serial Number.

Note – The procedures contained in this section assume that the system chassis is unpowered. See the *Sun Fire B1600 Blade System Chassis Administration Guide* for instructions on removing a PSU from a powered system chassis.

Caution – To ensure that it remains within an acceptable range of operating temperatures the Sun Fire B1600 system chassis requires two PSUs.

4.2.1 Removing a PSU

1. **Squeeze the green PSU ejector lever to unlatch it and pull the lever towards you to disconnect the PSU from the system chassis (**FIGURE 4-8**).**

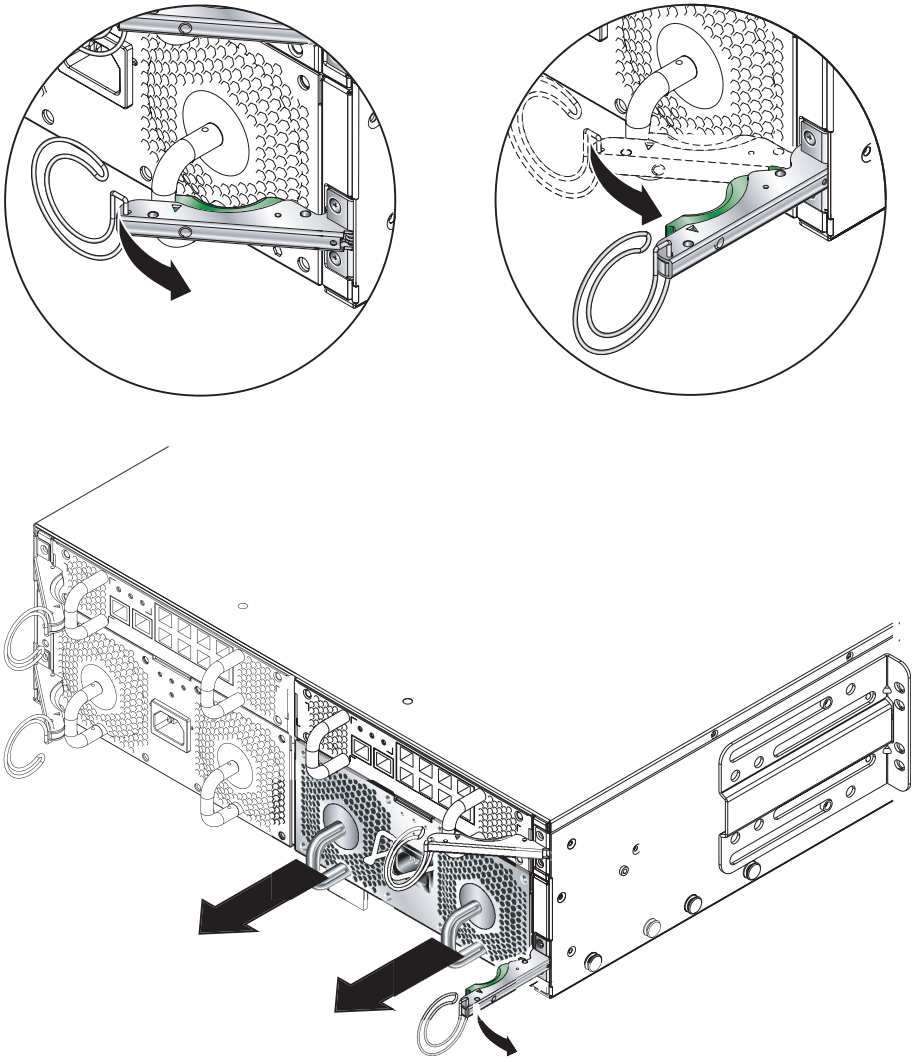

FIGURE 4-8 PSU Ejector Lever

2. **Check that the ejector lever is open fully and clear of the PSU module.**

3. **Remove the PSU from the system chassis by pulling on the vertical handles attached to the rear of the PSU (FIGURE 4-9).**

   Support the bottom of the PSU while removing the module from the system chassis.

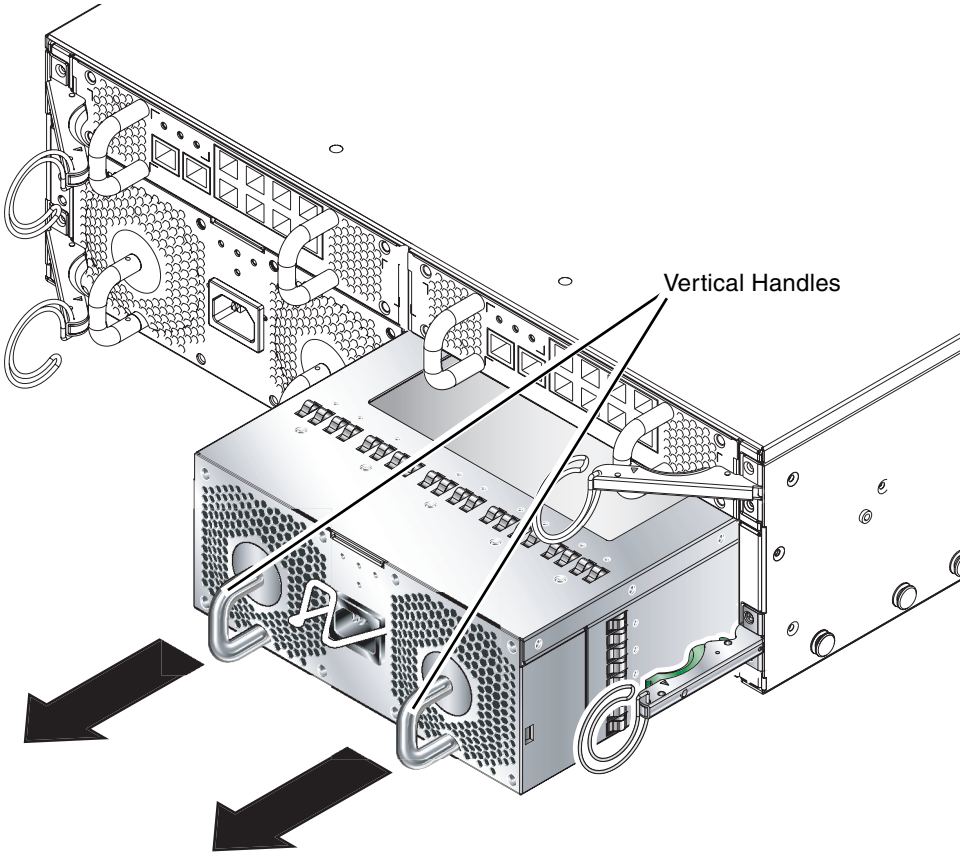

FIGURE 4-9 Removing the PSU From the System Chassis

4.2.2 Inserting a PSU

Caution – To ensure that it remains within an acceptable range of operating temperatures the Sun Fire B1600 system chassis requires two PSUs.

Caution – Do not install a PSU with the IEC power cord already attached. Only connect the power cord when the PSU is installed.

1. **Correctly align the PSU with the empty PSU slot in the system chassis.**

   PSU connectors must face towards the system chassis and be located on the lower half of the PSU (FIGURE 4-10).

2. **Check that the chassis ejector lever is opened fully and does not obstruct the opening to the PSU slot (FIGURE 4-10).**

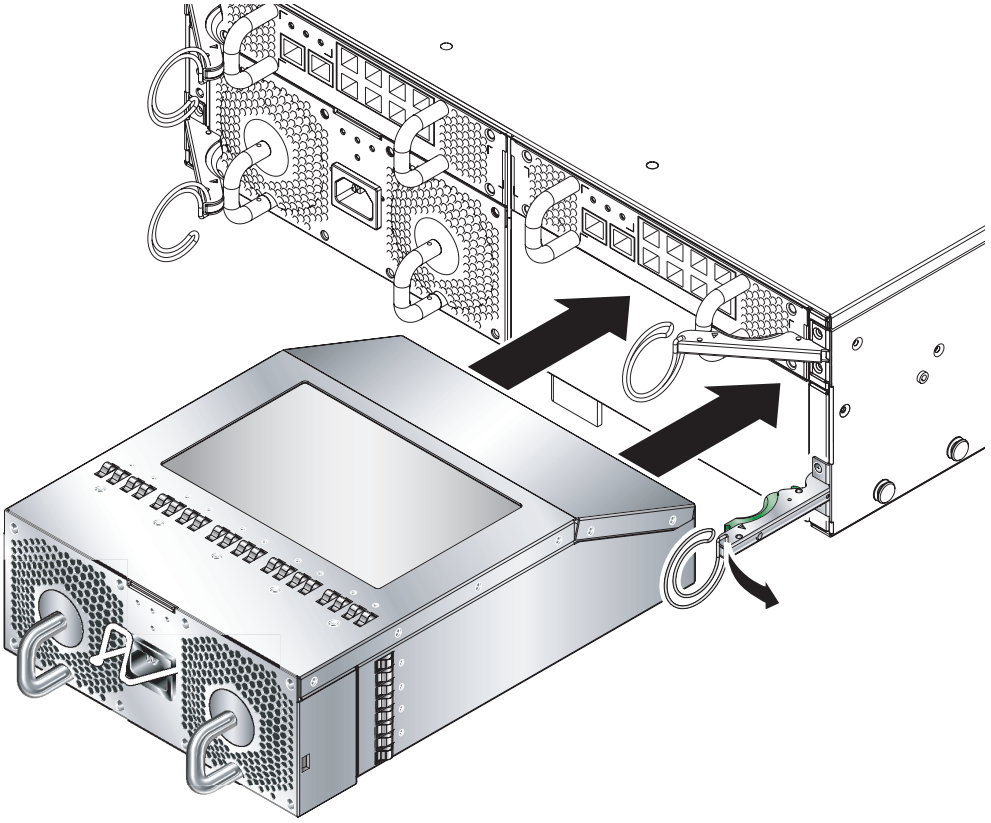

FIGURE 4-10 Aligning the PSU

3. **Slide the PSU into the empty PSU slot.**

   Push the PSU into the slot until the ejector lever engages (FIGURE 4-11).
   You must push the PSU firmly to raise the system flap within the system chassis.

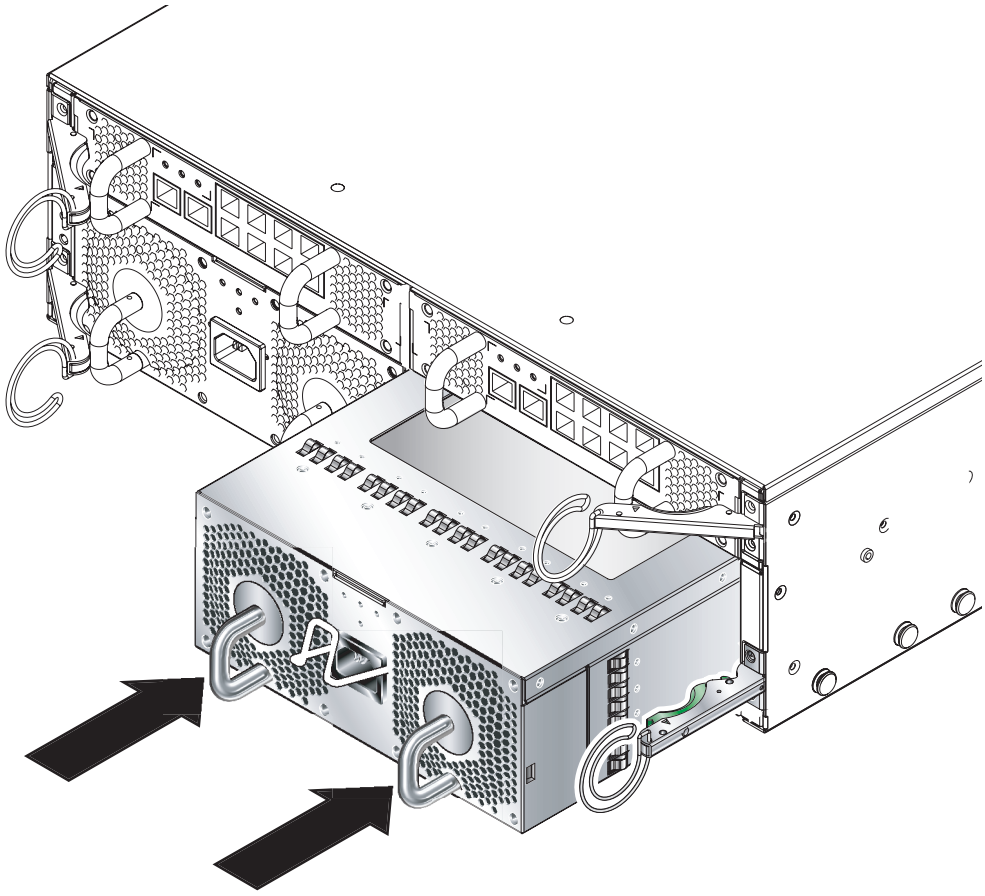

FIGURE 4-11 Sliding the PSU in the System Chassis

4. **Complete the installation by closing the ejector lever fully.**

   Check that the ejector lever engages onto the PSU pull handle. This engages the PSU into the system chassis (FIGURE 4-12).

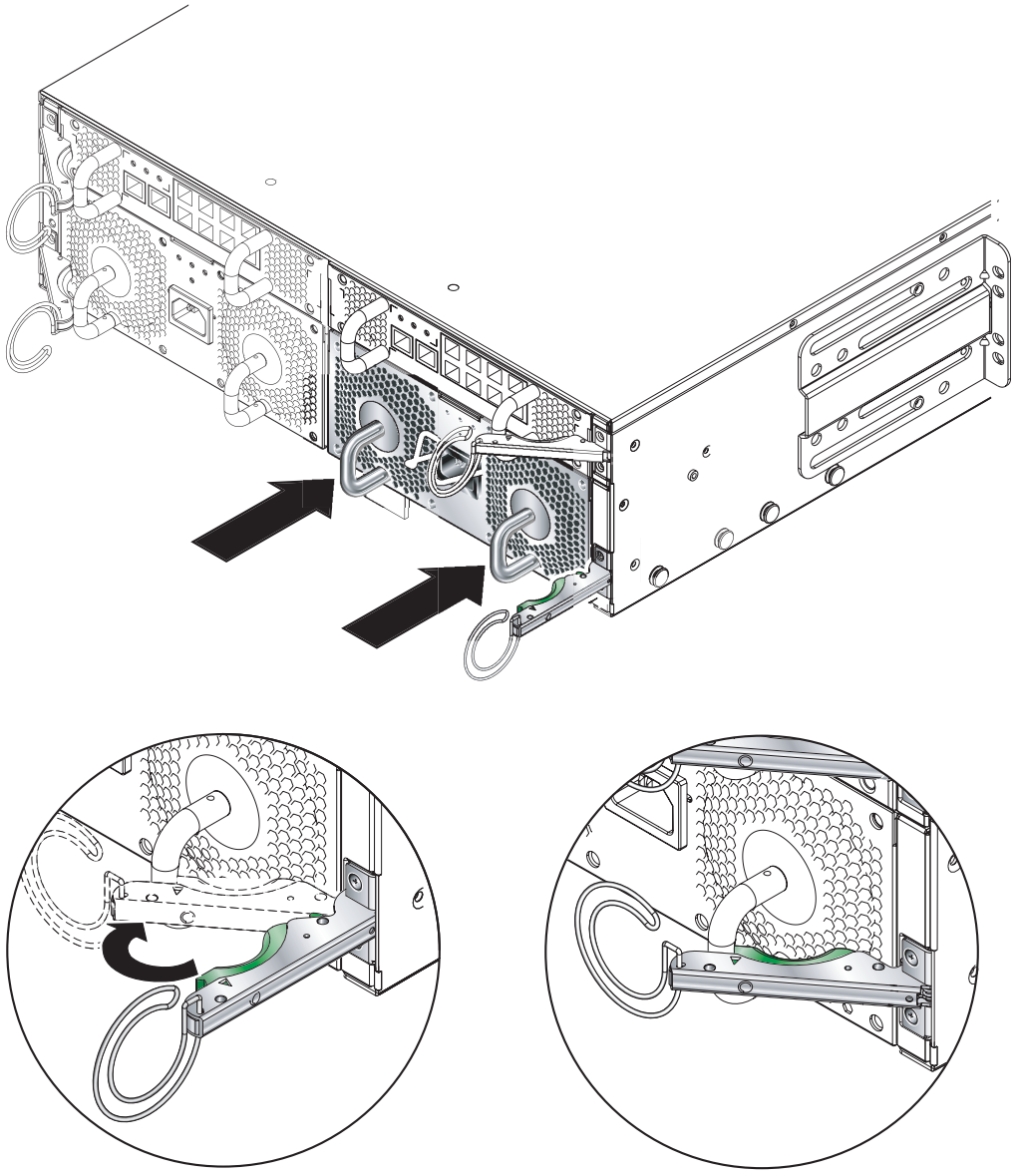

FIGURE 4-12 Closing the PSU Ejector Lever

4.3 Removing and Installing a Switch and System Controller (SSC)

Use the procedures in this section to remove and install an SSC. These are optional procedures to enable you to familiarize yourself with the mechanism, or to check the SSC Serial Number.

Note – The procedures contained in this section assume that the system chassis is not connected to the network and is not powered up. See the *Sun Fire B1600 Blade System Chassis Administration Guide* for instructions on removing an SSC from a networked and powered system chassis.

4.3.1 Chassis Supplied With Only One SSC

If you have purchased a chassis containing only a single SSC, then the module in slot SSC1 will be an SSC filler module (see FIGURE 4-13). This is an empty metal enclosure; it contains no functioning system hardware and you cannot connect a serial cable or any network cables to it (it has no connectors).

Note – If you are removing a filler panel and replacing it with a new SSC, make sure the currently installed SSC is using release 1.2 (or later) of the System Controller firmware. (Also, if the module you are installing as a redundant SCC is not a new one but is taken from another chassis and does not have release 1.2 firmware installed on it, you need to upgrade it on the old chassis before installing it as a redundant SSC.) Release 1.2 is the first firmware release to support failover (in other words, to support the ability of two System Controllers to monitor each other's health, and of the standby System Controller to take over from the active one in the event of a critical failure).

For full instructions about replacing an SSC filler module with a new SSC module, and about upgrading the System Controller firmware on an SSC, refer to the *Sun Fire B1600 Blade System Chassis Administration Guide*.

The mechanical procedures for removing and installing an SSC filler module are the same as those for removing and installing an actual SSC module. They are described in the remainder of this section.

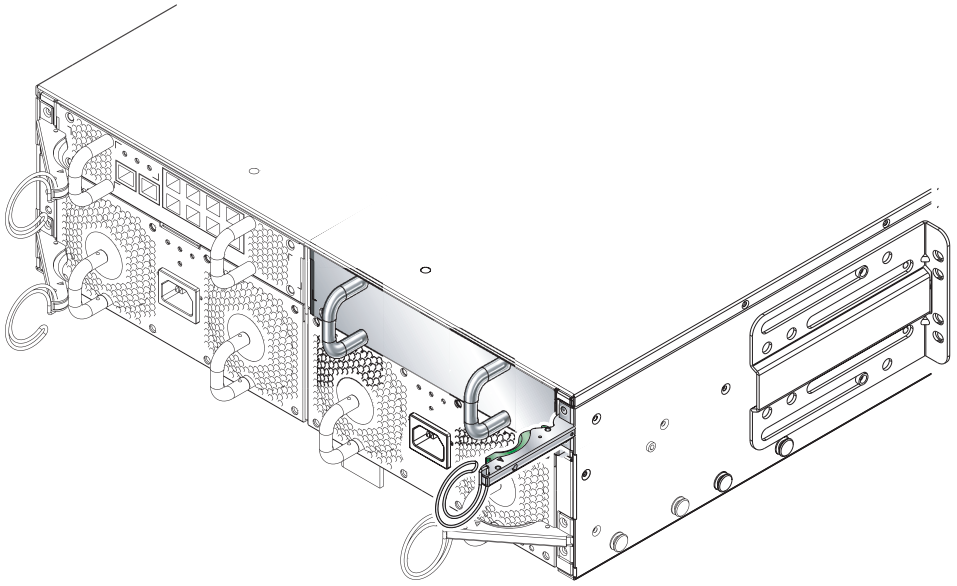

FIGURE 4-13 Rear View of the Chassis Showing a Filler Module in Slot SSC1

4.3.2 Removing the SSC

1. **Squeeze the green SSC ejector lever to unlatch it, and then pull the lever towards you to disconnect the SSC from the system chassis (**FIGURE 4-14**).**

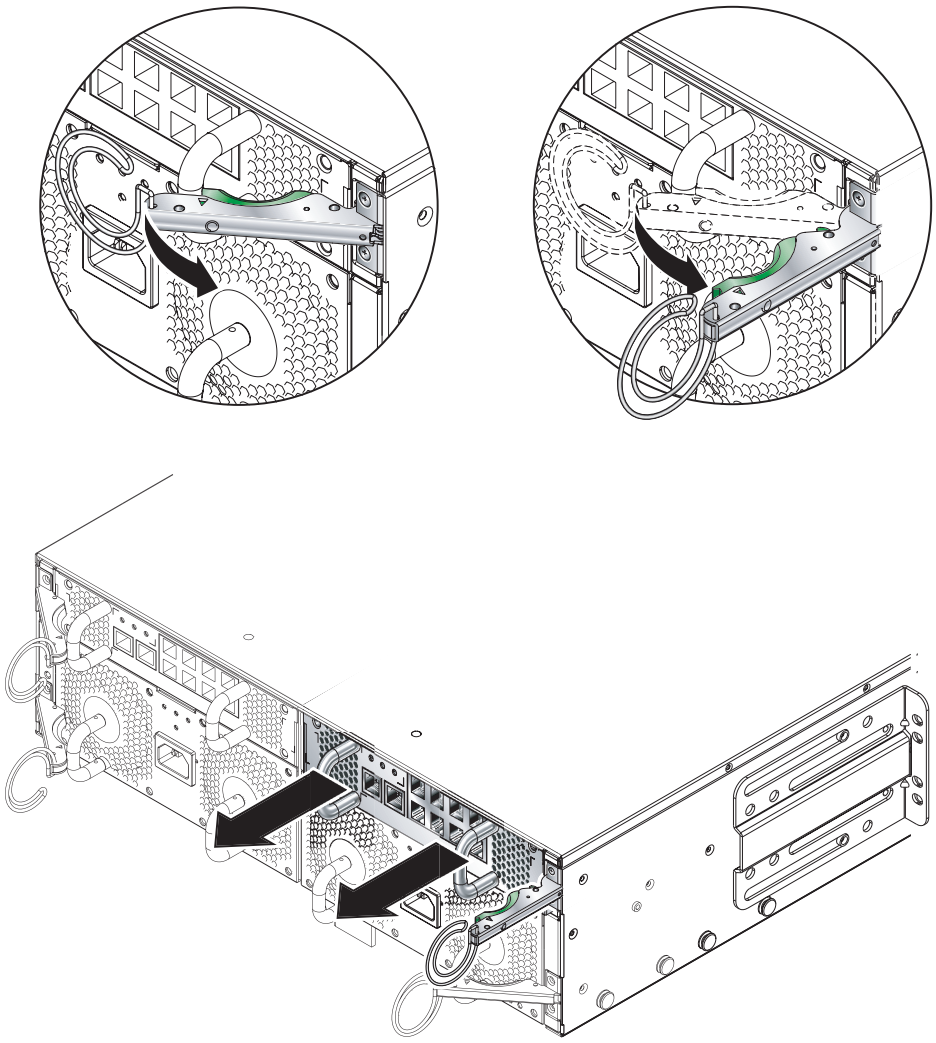

FIGURE 4-14 SSC Ejector Lever

2. **Check that the ejector lever is open fully and clear of the SSC module (**FIGURE 4-14**).**

3. **Remove the SSC from the system chassis by pulling on the vertical handles attached to the back of the SSC (FIGURE 4-15).**

   Support the bottom of the SSC while removing the module from the system chassis.

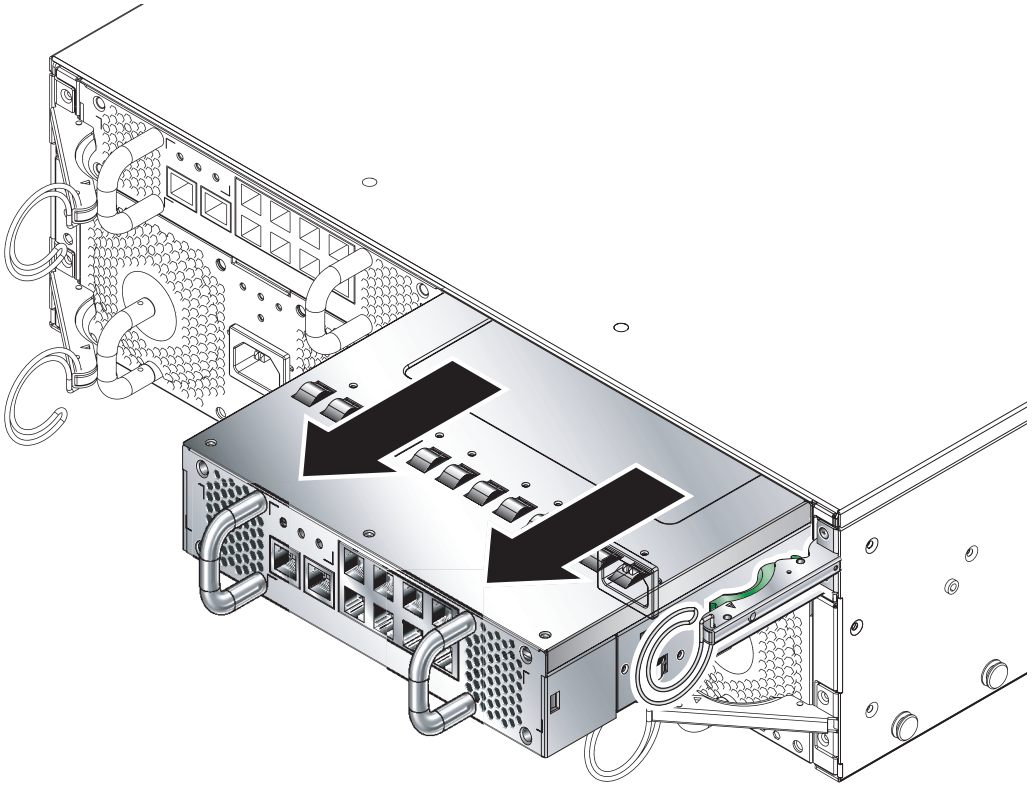

FIGURE 4-15 Removing the SSC From the System Chassis

4.3.3 Installing the SSC

1. **Align the SSC with the system chassis.**

   SSC connectors must face towards the system chassis and be located on the lower half of the SSC.

2. **Ensure that the chassis ejector lever is opened fully and does not obstruct the chassis opening (**FIGURE 4-16**).**

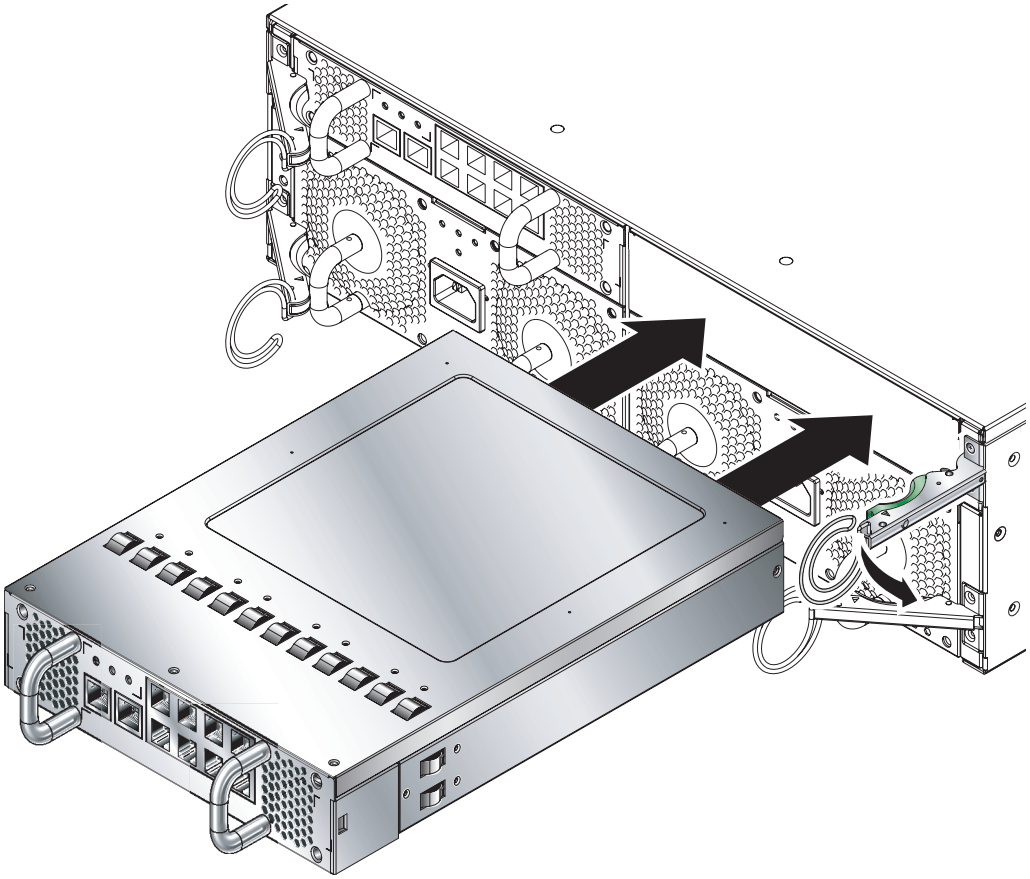

FIGURE 4-16 Aligning the SSC Before Insertion

3. **Slide the SSC into the empty chassis slot.**

   Push the SSC into the slot until the ejector lever engages (FIGURE 4-17).

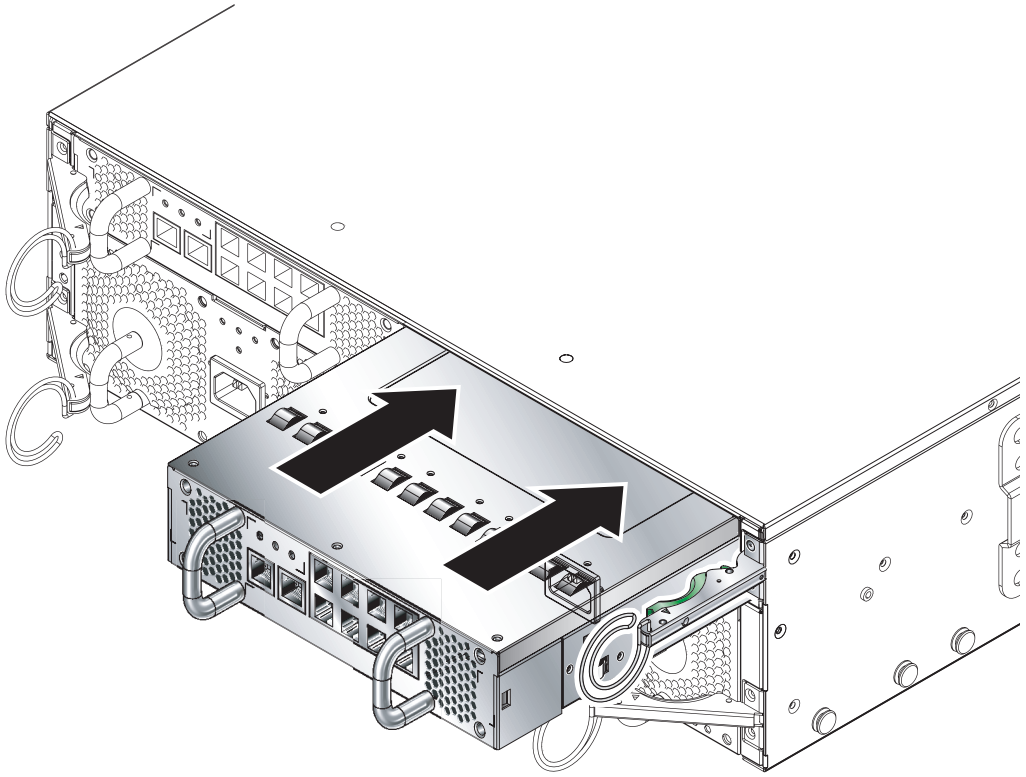

FIGURE 4-17 Inserting the SSC

4. **Complete insertion by closing the ejector lever.**

   Check that the latch engages onto the SSC pull handle. This engages the SSC into the system chassis (FIGURE 4-18).

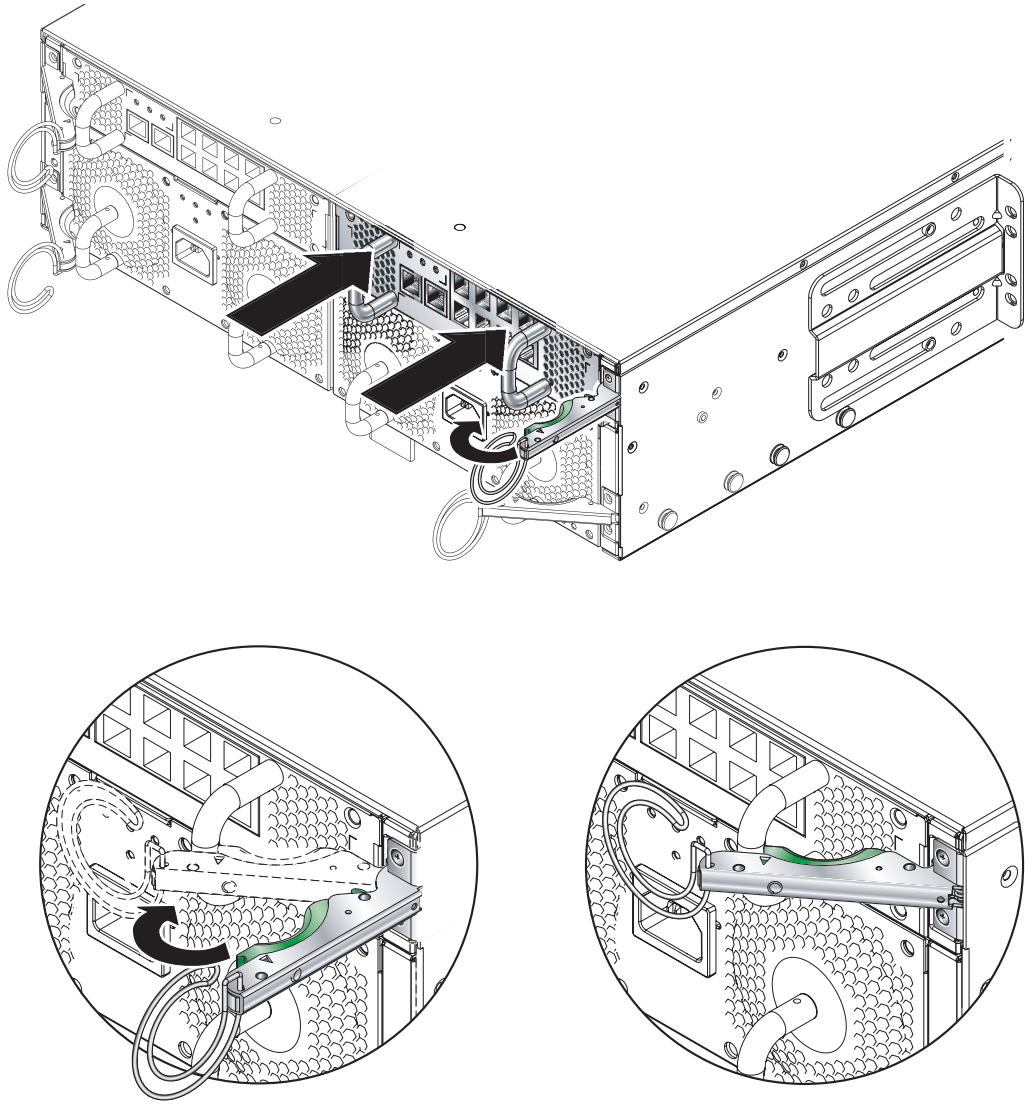

FIGURE 4-18 Closing the SSC Ejector Lever

4.4 What to Do Next

Now you have a fully populated Sun Fire B1600 blade system chassis, continue with Section 5.1, “Location of Ports and Power Inlets” on page 5-2.

CHAPTER 5

Connecting and Managing Cables

This chapter contains the following sections:

- Section 5.1, "Location of Ports and Power Inlets" on page 5-2
- Section 5.2, "Connecting the IEC Power Cords" on page 5-3
- Section 5.3, "Cable Requirements for 1000BASE-T and 10/100BASE-TX Connections" on page 5-5
- Section 5.4, "Attaching the Connector Cables" on page 5-6
- Section 5.5, "Connecting to the 10/100/1000BASE-T Data Network Ports" on page 5-7
- Section 5.6, "Connecting to the 10/100BASE-T Network Management Ports" on page 5-10
- Section 5.7, "Managing Cables for Multiple System Chassis" on page 5-12
- Section 5.8, "What to Do Next" on page 5-13

See Chapter 6 for details of Serial Port connections to other devices.

5.1 Location of Ports and Power Inlets

FIGURE 5-1 shows the ports and power inlets at the back of the Sun Fire B1600 blade system chassis.

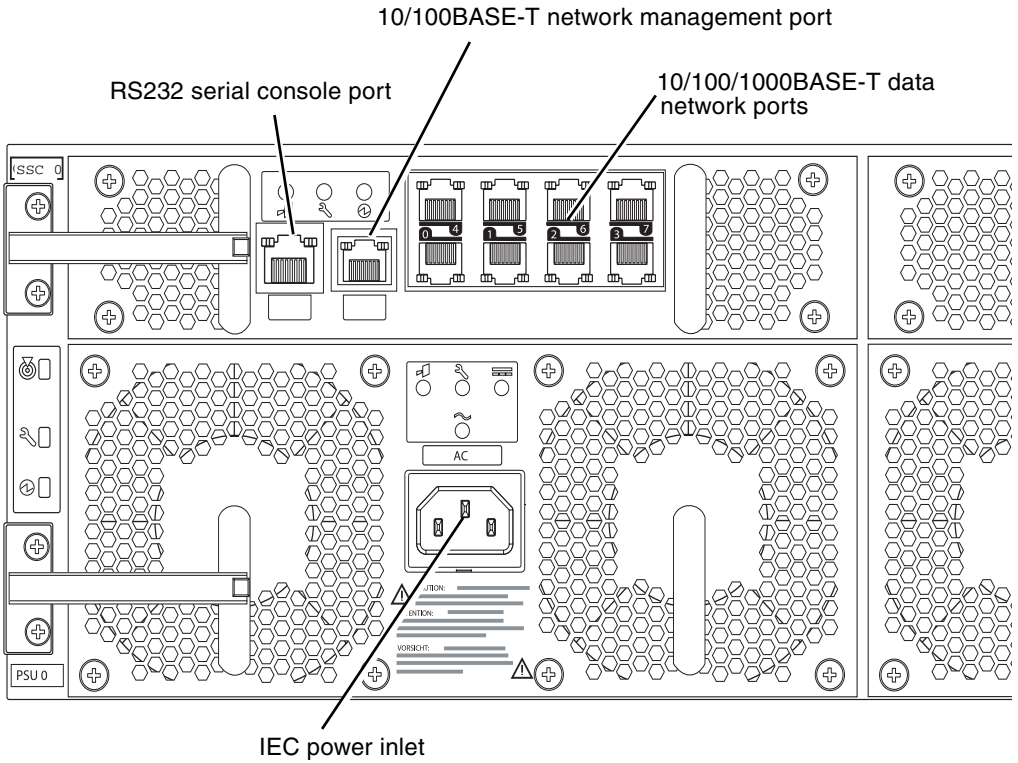

FIGURE 5-1 External Cable Ports (One SSC and PSU Shown)

Caution – Do not connect a telephone jack connector to a RJ-45 port. This can damage the switch. Instead, use only twisted-pair cables with RJ-45 connectors that conform with FCC standards, and make sure you follow local national wiring or electrical regulations.

5.2 Connecting the IEC Power Cords

You must connect an IEC power cord to each of the PSUs before you attach any other cables. Connecting each power cord to a separate circuit breaker will ensure that failure of one circuit does not compromise the system.

1. **Connect the power cord to the IEC power inlet (**FIGURE 5-2**).**

Note – The Sun B1600 blade system chassis powers on when the power cords are connected. Connection of the power cord provides a reliable earth to ground.

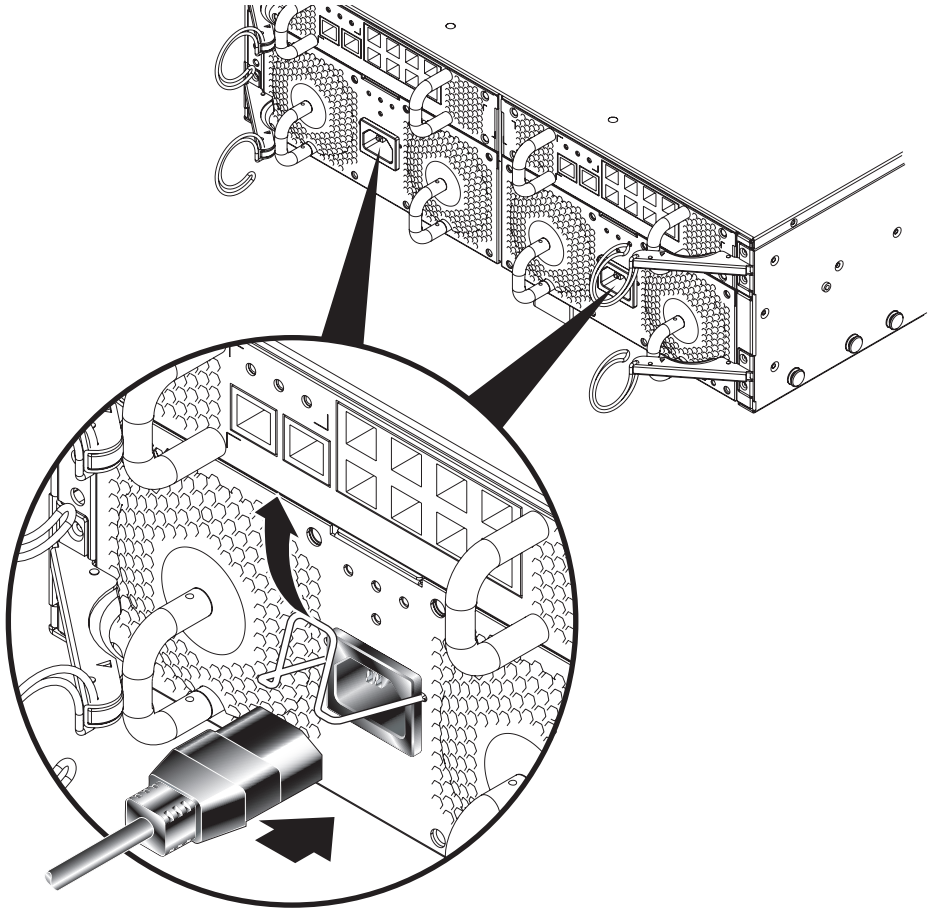

FIGURE 5-2 Inserting the IEC Power Cords

2. **Confirm that the PSU LEDs are in the correct state.**

   If the PSU fans run at high speed and the blue and amber LEDs are lit on the PSU, the unit might not be fully inserted into the system enclosure. See Section 4.3, "Removing and Installing a PSU" on page 4-8 for details of how to install the PSU correctly.

Caution – Do not attempt to install a PSU with the power cord attached.

3. **Use the power cord retention clip to hold the power cord in position (**FIGURE 5-3**).**

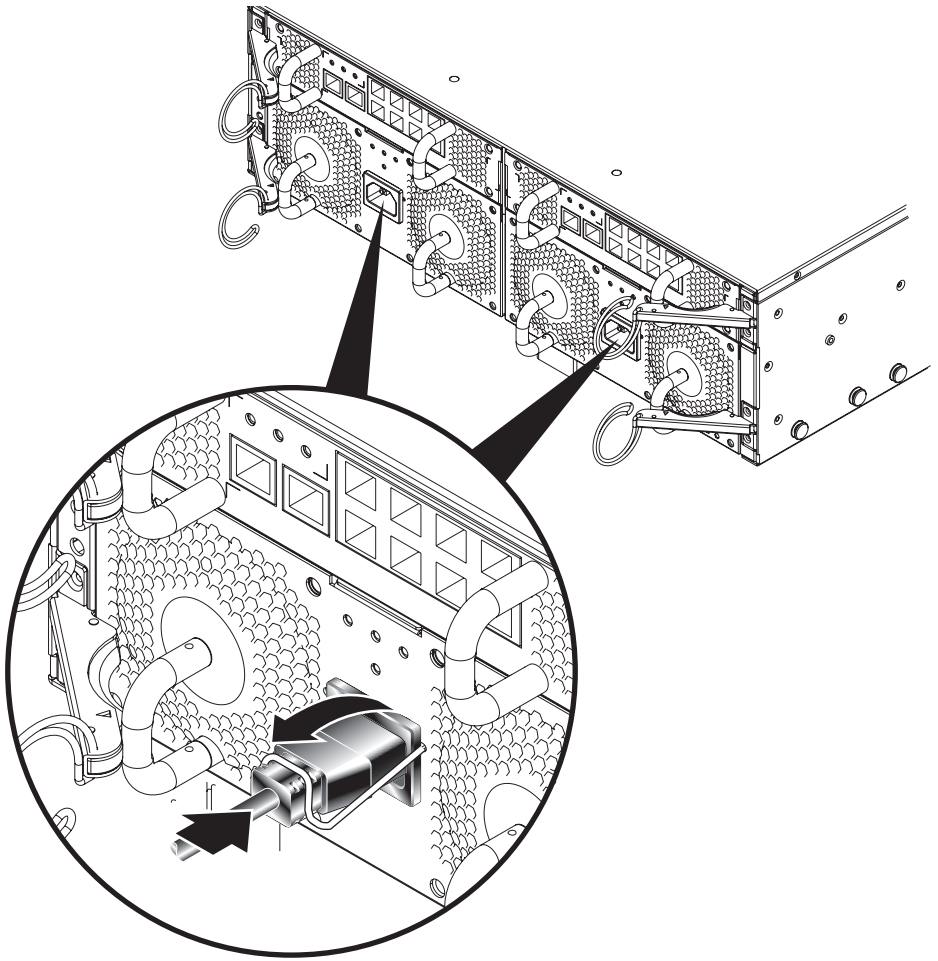

FIGURE 5-3 Clipping on the Power Cord Retention Clip

4. **Repeat Step 1 through to Step 3 for the other PSU.**

5.3 Cable Requirements for 1000BASE-T and 10/100BASE-TX Connections

This section provides details of the 1000BASE-T and 10/100BASE-TX cable requirements when connecting to a Sun Fire B1600 blade system chassis.

5.3.1 1000BASE-T Cable Requirements

All Category 5 UTP cables that are used for 100BASE-TX connections should also work for 1000BASE-T connections, providing that all four wire pairs are connected. However, for all critical connections or any new cable installations, use Category 5E (enhanced Category 5) cable. The Category 5E specification includes test parameters that are only recommendations for Category 5. Therefore, the first step in preparing existing Category 5 UTP cable for running 1000BASE-T is a simple test of the cable installation to confirm that it complies with the IEEE 802.3ab standards.

5.3.1.1 Cable Testing for Existing Category 5 Cable

Installed Category 5 UTP cables must pass tests for Attenuation, Near-End Crosstalk (NEXT), and Far-End Crosstalk (FEXT). This cable testing information is specified in the ANSI/TIA/EIA-TSB-67 standard. Additionally, cables must also pass test parameters for Return Loss, skew and Equal-Level Far-End Crosstalk (ELFEXT). These tests are specified in the ANSI/TIA/EIA-TSB-95 Bulletin, “The Additional Transmission Performance Guidelines for 100 Ohm 4-Pair Category 5 Cabling.”

5.3.2 Cable Requirements for 10/100BASE-TX Devices

The data ports on the SSC are designed to operate at an optimal speed of 1000 Mbps but can be connected to 10 or 100 Mbytes/sec devices. The SSC also includes a 10/100BASE-TX management port. For 10/100BASE-TX connections, twisted-pair cable can have two or four pairs of wires. Each wire pair is two different colors. For example, one wire might be red, and the other red with white stripes. When connecting the SSC to a device at 10 or 100 Mbytes/sec, use unshielded twisted-pair (UTP) cable with RJ-45 connectors at both ends. For 100BASE-TX connections, Category 5 cable is required. For 10BASE-T connections, Category 3, 4 or 5 cable can be used.

Note – Twisted-pair cables must not exceed 100 meters (328 feet) in length.

Note – When connected to a shared collision domain (such as a hub with multiple workstations), switch ports must be set to half-duplex mode and back pressure flow control must be disabled to avoid propagating jamming packets throughout the segment.

5.4 Attaching the Connector Cables

You must connect the power cords to the PSUs before you attach the remaining cables:

- RJ-45 10/100/1000BASE-T data network connectors
  (see Section 5.5, “Connecting to the 10/100/1000BASE-T Data Network Ports” on page 5-7 for further information)
- RJ-45 10/100BASE-T network management connectors
  (see Section 5.6, “Connecting to the 10/100BASE-T Network Management Ports” on page 5-10 for further information)
- RS232 serial connectors (see “Connecting the RS232 Serial Port to Different Devices” on page 6-1 for further information)

Attach the RJ-45 connectors by inserting the connector into the relevant port until the connector clicks in place.

The SSC is designed to connect to IEEE 802.3ab compliant devices. For most applications, the external ports on the SSC will be connected to other switches in the network backbone. It might also be connected directly to Gigabit Ethernet network cards in PCs or servers.

Caution – Do not connect a telephone jack connector to any RJ-45 port. This can damage the switch. Instead, use only twisted-pair cables with RJ-45 connectors that conform with FCC standards, or local national wiring or electrical regulations.

5.5 Connecting to the 10/100/1000BASE-T Data Network Ports

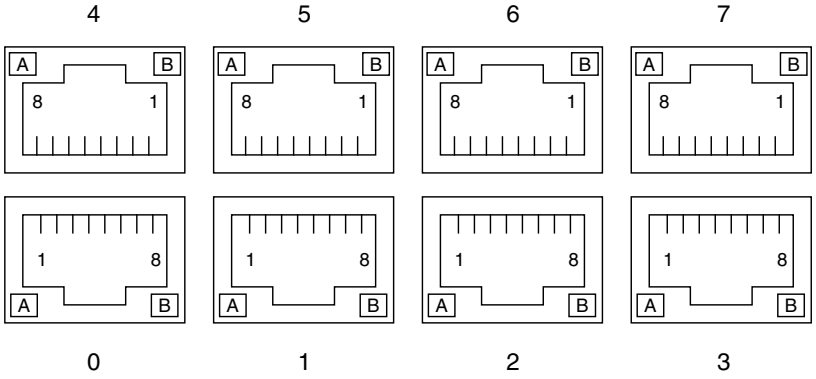

FIGURE 5-4 The 10/100/1000BASE-T Data Network Ports

The RJ-45 ports are arranged as a 4x2 array and provide the connection from the Switch and System Controller (SSC) to the network.

Each port has integral green Link Present/Active and Link Speed LED indicators.

Note – The Link Present/Active indicator is always on the left, regardless of the orientation of the RJ-45 port.

Note – The ce0 interface of each blade is connected to the switch in SSC0 and the ce1 interface of each blade is connected to the switch in SSC1. Both switches run in parallel, but separately.

TABLE 5-1 10/100/1000BASE-T Data Network Port Pinouts

Pin 1	TRD0+	Pin 2	TRD0-
Pin 3	TRD1+	Pin 4	TRD2+
Pin 5	TRD2-	Pin 6	TRD1-
Pin 7	TRD3+	Pin 8	TRD3-
LED A	Link Present/ Active	LED B	Link Speed: On = 1000BASE-T Off = 100BASE-T

When LED A is illuminated constantly it indicates that a link is established, but no packets are being transferred. When LED A is flashing it indicates that a link is established, and packets are being transferred.

FIGURE 5-5 shows how to connect the data network cables to the system chassis.

If you intend to configure your system chassis with redundant data connections, see Chapter 3 of the *Sun Fire B1600 Blade System Chassis Software Setup Guide* for details of how to duplicate connections from the SSC to your network.

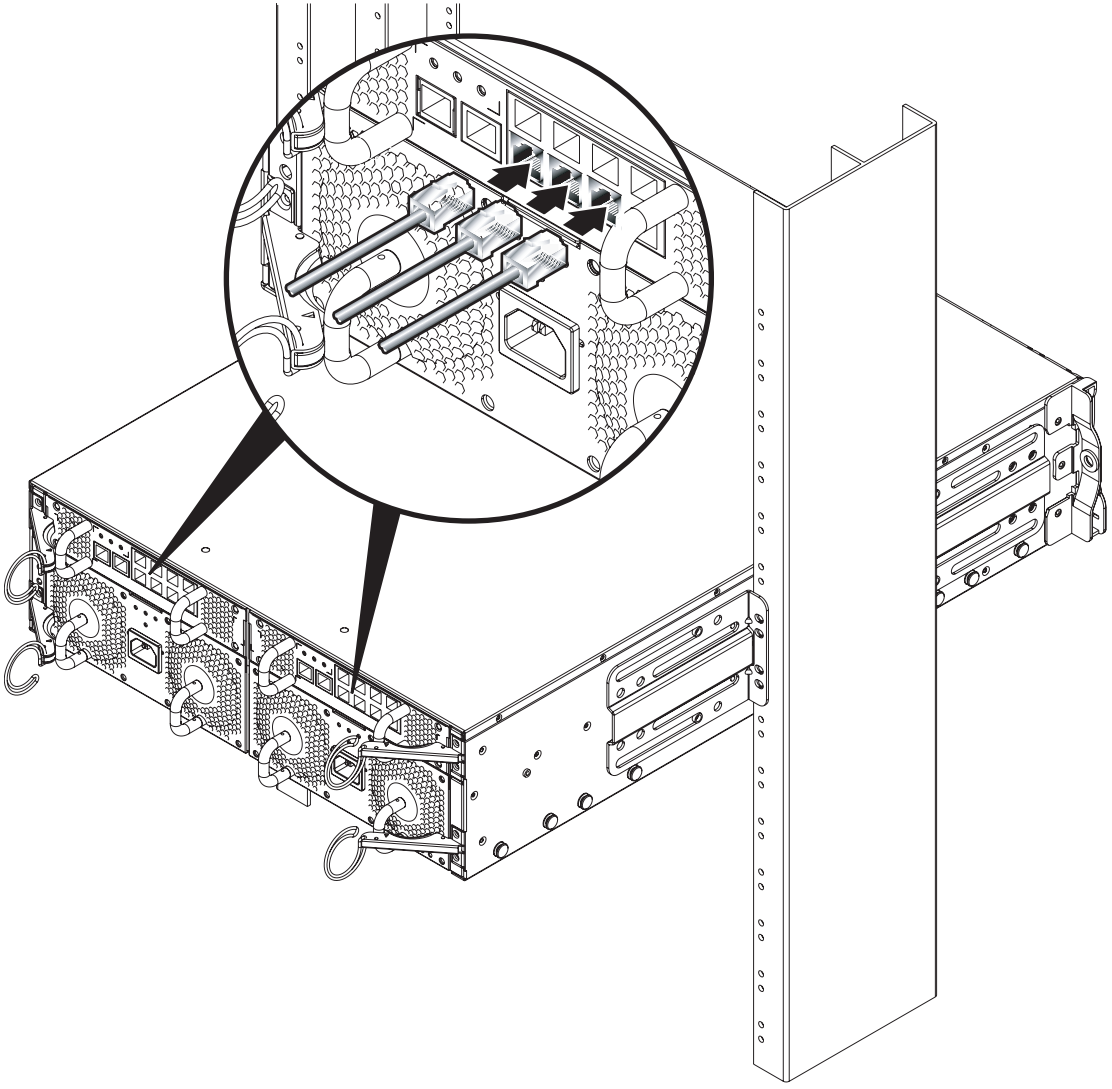

FIGURE 5-5 Attaching the Data Network Cables to the Network Ports

5.6 Connecting to the 10/100BASE-T Network Management Ports

These ports are labelled NET MGMT and are 10/100 Mbytes/sec Ethernet ports for carrying network management traffic only. If you are concerned about the security of your management network, we recommend strongly that you place the Network Management port on a different subnet from the Data Network ports.

The port has integral green Link Present/Active and Link Speed indicators.

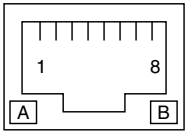

FIGURE 5-6 10/100BASE-T Network Management Ports

TABLE 5-2 100BASE-T Network Management Port Pinouts

Pin 1	TXD+	Pin 2	TXD-
Pin 3	RXD+	Pin 4	4T_D3P
Pin 5	4T_D3P	Pin 6	RXD-
Pin 7	4T_D4P	Pin 8	4T_D4P
LED A	Link Present/ Active	LED B	Link Speed: On = 100BASE-T Off = 10BASE-T

When LED A is illuminated constantly it indicates that a link is established, but no packets are being transferred. When LED A is flashing it indicates that a link is established and packets are being transferred.

Note – 4T_D3P and 4T_D4P pins provide a common-mode termination for unused lines.

FIGURE 5-7 shows how to connect the network management cables to the system chassis.

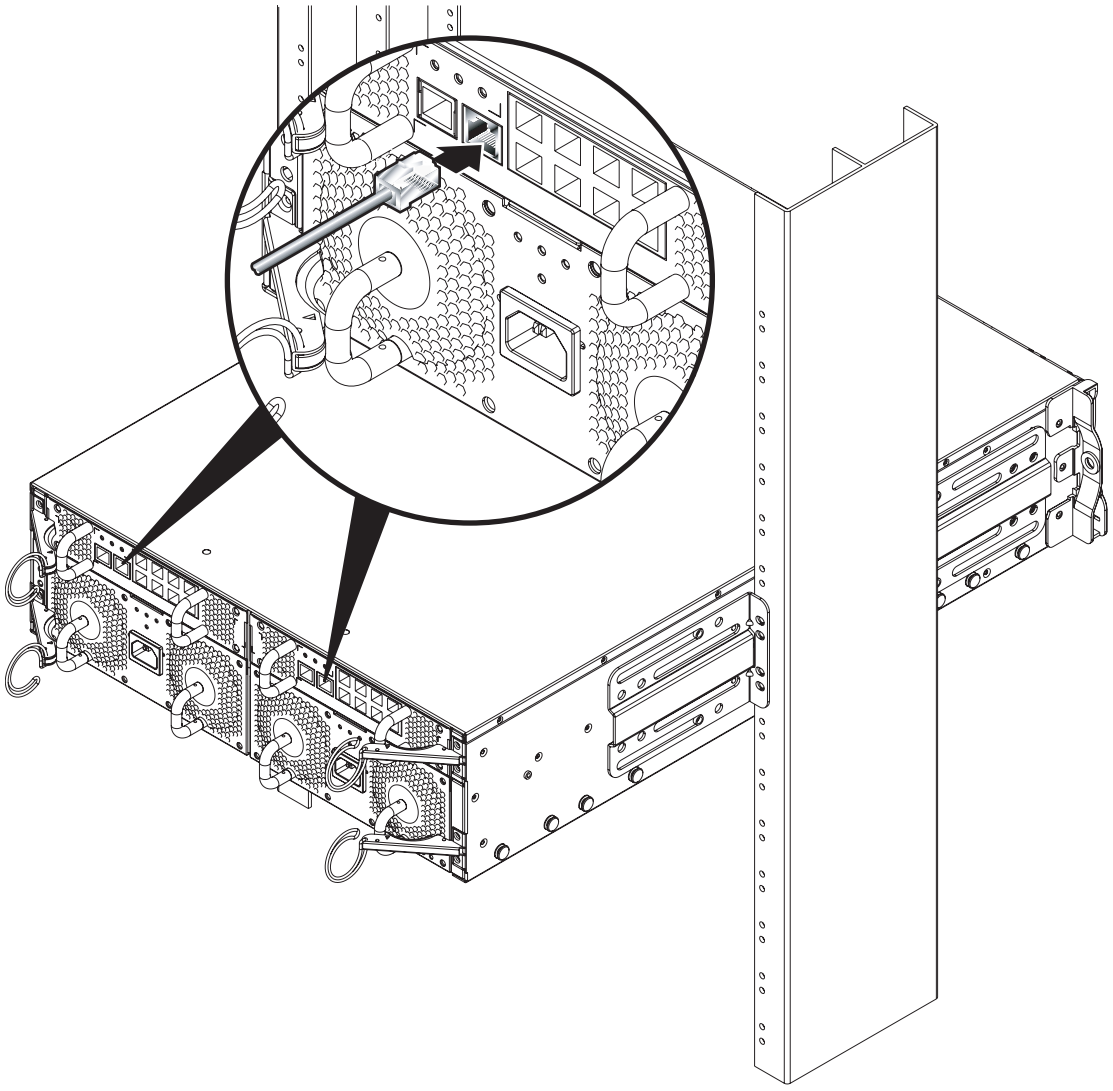

FIGURE 5-7 Attaching the Network Management Cables

5.7 Managing Cables for Multiple System Chassis

A Sun Fire B1600 blade system chassis that uses every available connection has 22 cables (including power cords) attached to the back of the system. When multiple system chassis are installed within the same rack you must use effective cable management to avoid blocking airflow through the system chassis.

Check that:

- Cables are of an adequate length
- There is adequate clearance at the back of the system chassis
- The cabling from multiple system chassis does not block the back vents of any system chassis that is installed beneath them

Cable management rings are attached to the module ejector handles on each PSU and SSC. Use each ring to gather the cables from each module and to keep them clear of the back system vents (FIGURE 5-8).

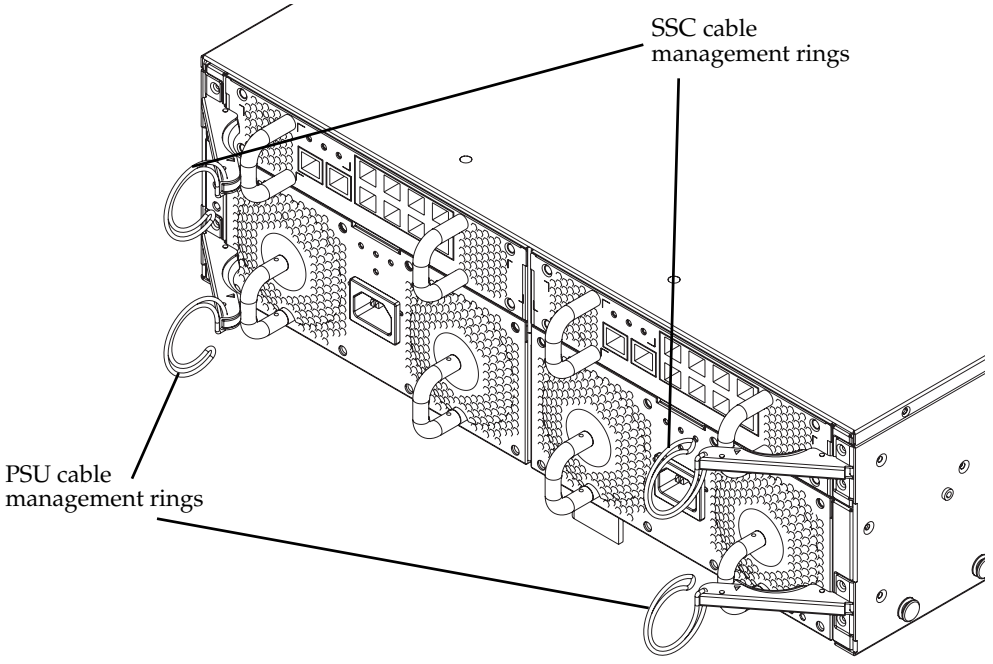

FIGURE 5-8 Back Cable Management Rings

Caution – Failure to keep the vents at the back of the system chassis clear might cause the system chassis to overheat and lead to system shutdown.

5.8 What to Do Next

See Chapter 6 for details of how to connect the Serial Port to different types of device such as a:

- Terminal server
- VT100 terminal or Sun Workstation
- Terminal that has a 9-pin adapter
- Modem

CHAPTER 6

Connecting the RS232 Serial Port to Different Devices

To perform the initial configuration when you have installed and applied power to the blade system chassis, you must either set up a serial connection to SSC0 or you must set up a DHCP server to perform the IP configuration of the chassis' active System Controller automatically. If you set up a DHCP server to do this, you can then telnet into the active System Controller to set up the chassis for the first time.

For information about configuring a DHCP server to enable you to connect to the chassis' active System Controller for the first time over a telnet instead of a serial connection, see the *Sun Fire B1600 Blade System Chassis Software Setup Guide*.

Note – When both SSCs in the chassis are powered and working normally and neither is damaged, by default SSC0 contains the active System Controller and SSC1 contains the standby System Controller. This means that, to set up the chassis for the first time using a serial connection, you need a serial connection to at least SSC0.

However, for day-to-day operation of the blade system chassis, we recommend you set up serial connections to both SSCs. This ensures that, if the active SSC fails for any reason, you do not lose serial connectivity to the chassis.

This chapter contains the following sections:

- Section 6.1, "Serial Port Pin Numbers" on page 6-2
- Section 6.2, "Connecting to a Terminal Server" on page 6-3
- Section 6.3, "Connecting to a VT100 Terminal or a Sun Workstation" on page 6-4
- Section 6.4, "Connecting to a Terminal That Has a 9-pin Adapter" on page 6-5
- Section 6.5, "Connecting to a Modem" on page 6-6
- Section 6.6, "Connecting the Cable to the Serial Port" on page 6-7
- Section 6.7, "Setting up a Serial Link to the System Controller Using a Laptop" on page 6-8

6.1 Serial Port Pin Numbers

When viewing the Sun Fire B1600 blade system chassis from the back, pin 1 of the RJ-45 serial port is on the left, and pin 8 is on the right.

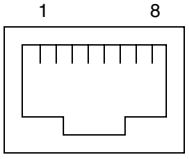

FIGURE 6-1 Serial Port Pin Numbers

TABLE 6-1 Serial Port Pinouts

Pin number on System Chassis	Signal
Pin 1	RTS
Pin 2	DTR
Pin 3	TXD
Pin 4	Signal Ground
Pin 5	Signal Ground
Pin 6	RXD
Pin 7	DSR
Pin 8	CTS

6.2 Connecting to a Terminal Server

For this connection, you can use the standard RJ-45 patch cable and DB-25 adapter supplied with the system chassis.

The serial port is a DTE port. You must be aware that if you are connecting a SSC's serial port to another DTE port - the pinouts for the serial ports on the SSCs correspond with the pinouts for the RJ-45 ports on Cisco terminal servers. This means that if you are using a Cisco AS2511-RJ terminal server you can:

- Connect a rollover cable directly to the Sun Fire B1600 blade system chassis.
- Connect a rollover cable to a patch panel and use a straight-through patch cable to connect the patch panel to the Sun Fire B1600 blade system chassis (see FIGURE 6-2).

Note – You do not have to use a Cisco terminal server. For other terminal servers, see the manufacturer's documentation to confirm whether the pinouts of the serial ports on the terminal server match the pinouts of the Sun Fire B1600 system chassis. If they do not, write down which pins on the terminal server's serial ports carry the signals listed in the right-hand column in TABLE 6-2. Then make a rollover cable taking each of the pins on either SSC's serial port to the correct pin on the terminal server's serial port.

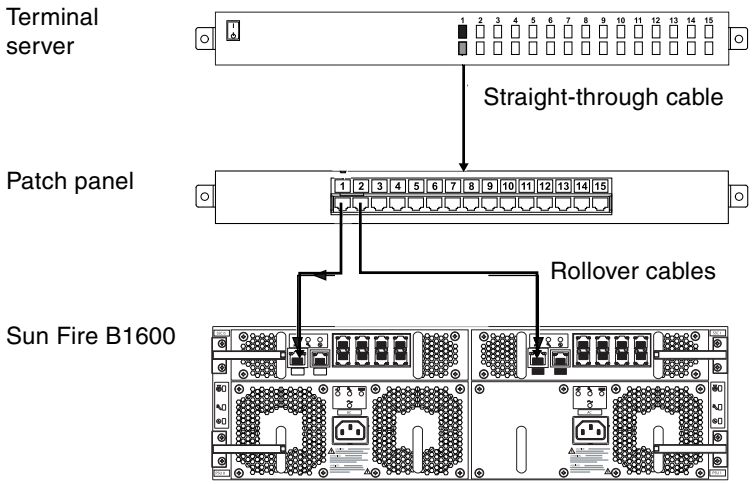

FIGURE 6-2 Patch Panel Connections to a Terminal Server

TABLE 6-2 Serial Port Pinouts to a Terminal Server

Pin number on System Chassis	Signal	Terminal Server Signal Connection
Pin 1	RTS	CTS
Pin 2	DTR	DSR
Pin 3	TXD	RXD
Pin 4	Signal Ground	Signal Ground
Pin 5	Signal Ground	Signal Ground
Pin 6	RXD	TXD
Pin 7	DSR	DTR
Pin 8	CTS	RTS

6.3 Connecting to a VT100 Terminal or a Sun Workstation

For this connection, you can use the standard RJ-45 patch cable supplied with the chassis, but you must also use the DB-25 adapter that is supplied as well.

To configure the chassis directly from a VT100 terminal or a Sun workstation:

1. **Connect one end of the serial cable to the serial port on the SSC.**
2. **Insert the other end of the serial cable into the DB-25 adapter (part number 530-2889).**
3. **Plug the adapter into the DB-25 serial connector on the VT100 terminal or Sun workstation you intend to use.**

   The DB-25 adapter supplied with your system chassis enables you to connect to any Sun system. The pin interconnections are listed in TABLE 6-3.

TABLE 6-3 Serial Port Pin Interconnections to a Sun DB-25 (25-pin) Adapter

Serial Port (RJ-45 Connector) Pin	25-pin Connector
Pin 1 (RTS)	Pin 5 (CTS)
Pin 2 (DTR)	Pin 6 (DSR)
Pin 3 (TXD)	Pin 3 (RXD)
Pin 4 (Signal Ground)	Pin 7 (Signal Ground)
Pin 5 (Signal Ground)	Pin 7 (Signal Ground)
Pin 6 (RXD)	Pin 2 (TXD)
Pin 7 (DSR)	Pin 20 (DTR)
Pin 8 (CTS)	Pin 4 (RTS)

6.4 Connecting to a Terminal That Has a 9-pin Adapter

The pinouts for the chassis serial ports correspond with the pinouts for the RJ-45 ports on the Cisco AS2511-RJ terminal server. For terminal servers from other manufacturers, you might need to obtain a suitable rollover cable (see Section 6.2, "Connecting to a Terminal Server" on page 6-3).

1. **Connect one end of the serial cable to the serial port on the SSC.**
2. **Insert the other end of the serial cable into the DB-9 adapter.**

3. **Plug the adapter into the DB-9 serial connector on the terminal you intend to use.**

   The DB-9 (9-pin) adapter must perform the pin interconnections listed in TABLE 6-4.

TABLE 6-4 Serial Port Pin Interconnections to a DB-9 (9-pin) Adapter

Serial Port (RJ-45 Connector) Pin	9-pin Connector
Pin 1 (RTS)	Pin 8 (CTS)
Pin 2 (DTR)	Pin 6 (DSR)
Pin 3 (TXD)	Pin 2 (RXD)
Pin 4 (Signal Ground)	Pin 5 (Signal Ground)
Pin 5 (Signal Ground)	Pin 5 (Signal Ground)
Pin 6 (RXD)	Pin 3 (TXD)
Pin 7 (DSR)	Pin 4 (DTR)
Pin 8 (CTS)	Pin 7 (RTS)

6.5 Connecting to a Modem

For this connection, you can use the standard RJ-45 patch cable and the DB-25 adapter supplied with the server.

1. **Connect one end of the serial cable to the serial port on the SSC.**
2. **Insert the other end of the serial cable into the DB-25 adapter that was supplied with the system chassis (part number 530-2889).**
3. **Plug the adapter into the DB-25 serial connector on the modem.**

   The settings you need to use for a modem connection are listed in TABLE 6-5.

TABLE 6-5 Default Settings for Connecting a Modem to the Serial Port

Parameter	Setting
Rate	9600 baud
Parity	No
Stop bits	1
Data bits	8

6.6 Connecting the Cable to the Serial Port

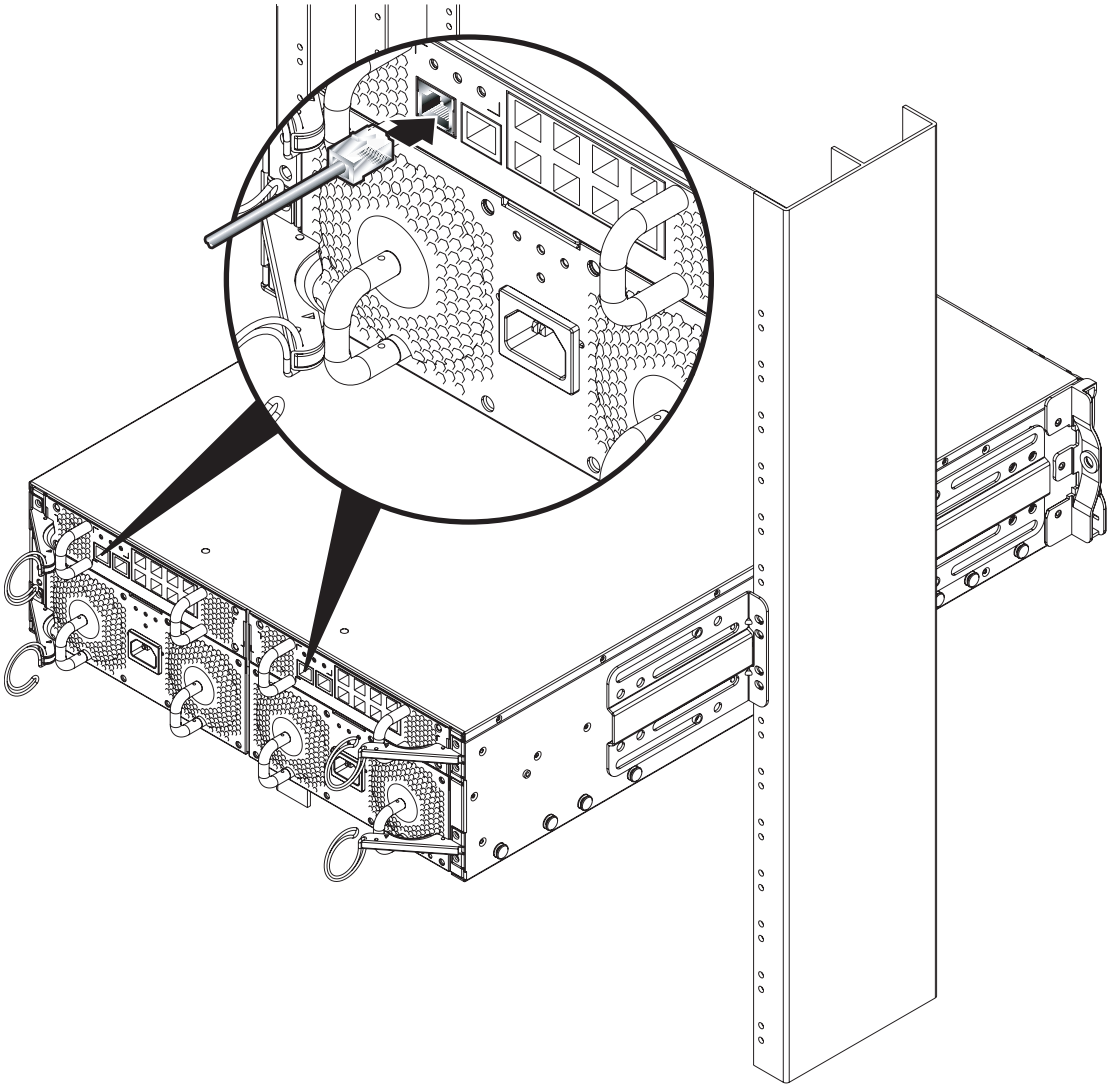

FIGURE 6-3 Attaching the Serial Cables

6.7 Setting up a Serial Link to the System Controller Using a Laptop

This section describes how to connect from a laptop computer to one of the Sun Fire B1600 blade system chassis's two Switch and System Controller (SSC) modules to access the chassis's command-line management interface.

Note – Make sure you have installed the blade system chassis into a rack or cabinet (refer to Chapter 3) before following the instructions in this chapter.

6.7.1 Connecting to a Laptop

Note – Do not attempt to use the laptop's (25-pin) parallel port instead of its serial port. The serial port is a male 9-pin D-type connector.

---

1. **Connect the RJ-45 to RJ-45 patch cable (supplied with the chassis) to the SSC's serial port.**
2. **Connect the other end of the patch cable to the RJ-45 connector on the silver-colored DB25 (25-way DSUB male-to-female 8 POS RJ-45) adapter (part number 530-2889-0x) supplied with the Sun Fire B1600.**

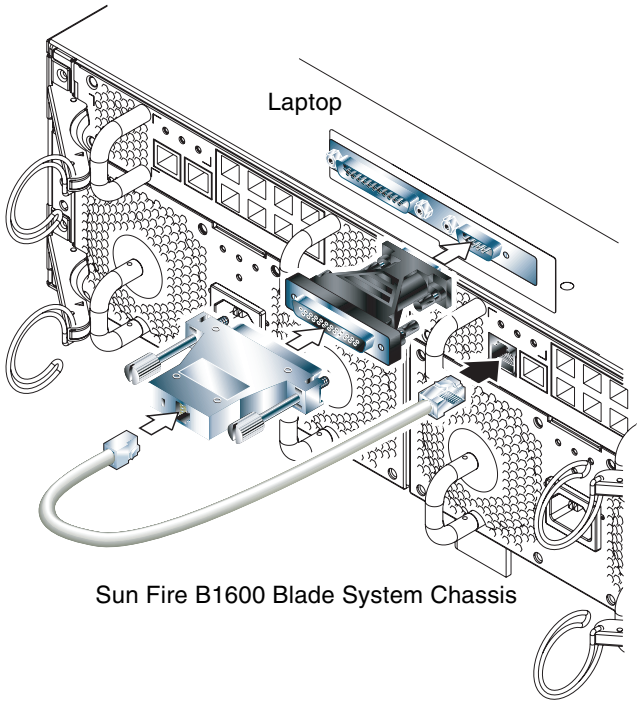

FIGURE 6-4 Connecting the SSC to the Serial Port on a Laptop

3. **Connect the 25-way D-type male connector to an adapter that has one 25-way female connector and one 9-way D-type female connector.**

   Sun does not supply a 25x9-way D-type female-to-female adapter. However, adapters like this are available from home computer suppliers and electronics stores. The pin inter-connections that the adapter must perform are listed in TABLE 6-6.

TABLE 6-6 Pin Inter-connections Required to be Performed by the 25x9-way D-type Female-to-Female Adapter

9-way Female Connector	25-way Female Connector
Pin 1	Pin 8
Pin 2	Pin 3
Pin 3	Pin 2
Pin 4	Pin 20
Pin 5	Pin 7
Pin 6	Pin 6

TABLE 6-6 Pin Inter-connections Required to be Performed by the 25x9-way D-type Female-to-Female Adapter

9-way Female Connector	25-way Female Connector
Pin 7	Pin 4
Pin 8	Pin 5
Pin 9	Pin 22

4. **Finally, connect the 9-way female connector to the serial port on the laptop.**

6.7.1.1 Using Microsoft Windows HyperTerminal

Note – If you normally connect the serial port on your laptop to a handheld device, you must close the Hot Sync Manager before following the instructions in this section. Otherwise you will not be able to use the serial port to communicate with the Sun Fire B1600 Blade System Chassis.

The instructions in this section were verified on a laptop PC running Microsoft Windows 98 and with HyperTerminal Applet version 3.0.

1. **Run the Windows HyperTerminal utility.**
2. **In the HyperTerminal window, double-click the Hypertrm.exe icon.**
3. **In the Connection Description window, specify a name for the HyperTerminal connection you are creating on the laptop.**

   Then select an icon for it and click OK.
4. **In the Connect to... window, click the arrow for the "Connect using" option and select the port you are using for your connection to the server.**

   Unless you have a particular reason for using a different port, select DIRECT TO COM1. Click OK.
5. **In the COM1 Properties Port Settings window, set the parameters as follows:**

   Bits per second: 9600
   Data bits: 8
   Parity: None
   Stop bits: 1
   Flow control: specify either "Xon/Xoff" or "None".

Note – Do not select "Hardware" for the Flow control option.

Click OK.

6. **Your HyperTerminal session is now active. From the File menu, select Properties.**

7. **In the Properties window, click the Settings tab.**

   On the Settings tab, click the arrow for the "Emulation" option and select VT100. For the "Telnet terminal" option, specify VT100. Click OK.

6.8 What to Do Next

For information on how to configure the system controllers, Switches and blades within the system chassis, see the *Sun Fire B1600 Blade System Chassis Software Setup Guide*.

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