



Sun Fire™ V210 and V240 Servers Installation Guide

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Preface

This document provides you with a detailed guide through the unpacking, rackmounting, and initial set up procedures for the Sun Fire V210 and V240 servers.

Using UNIX Commands

This document does not contain information on basic UNIX® commands and procedures such as shutting down the system, booting the system, and configuring devices.

See one or more of the following for this information:

- *Solaris Handbook for Sun Peripherals*
- Other software documentation that you received with your system

Typographic Conventions

Typeface	Meaning	Examples
AaBbCc123	The names of commands, files, and directories; on-screen computer output	Edit your <code>.login</code> file. Use <code>ls -a</code> to list all files. % You have mail.
AaBbCc123	What you type, when contrasted with on-screen computer output	% su Password:
<i>AaBbCc123</i>	Book titles, new words or terms, words to be emphasized. Replace command-line variables with real names or values.	Read Chapter 6 in the <i>User's Guide</i> . These are called <i>class</i> options. You <i>must</i> be superuser to do this. To delete a file, type <code>rm filename</code> .

Shell Prompts

Shell	Prompt
C shell	<i>machine-name%</i>
C shell superuser	<i>machine-name#</i>
Bourne shell and Korn shell	\$
Bourne shell and Korn shell superuser	#
ALOM shell	sc>
OpenBoot PROM shell	ok

Related Documentation

Application	Title	Part Number
Latest information	<i>Sun Fire V210 and V240 Servers Product Notes</i>	816-4828-xx
Compliance and safety	<i>Sun Fire V210 and V240 Servers Compliance and Safety Guide</i>	816-4827-xx
Unpacking	<i>Sun Fire V210 and V240 Servers Quick Start Guide</i>	816-4824-xx
Administration	<i>Sun Fire V210 and V240 Servers Administration Guide</i>	816-4826-xx
Lights-Out Management	<i>Advanced Lights-Out Manager Online Help</i>	817-0076-xx
Servicing	<i>Sun Fire V210 and V240 Servers Parts Replacement Manual</i>	817-0743-xx

Read the *Sun Fire V210 and V240 Servers Compliance and Safety Guide* before performing any of the procedures documented in this manual.

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Please include the part number (816-4825-10) of your document in the subject line of your email.

Introduction to the Sun Fire V210 and V240 Servers

This chapter provides a description of the Sun Fire V210 and V240 servers and gives an overview of the installation process. The chapter contains the following sections:

- “Overview of the Sun Fire V210 and V240 Servers” on page 2
- “Sun Advanced Lights-Out Manager” on page 4
- “Contents of the Ship Kit” on page 5
- “Installation Overview” on page 6
- “Using the Sun Fire V210 and V240 Servers Documentation” on page 7

Overview of the Sun Fire V210 and V240 Servers

The Sun Fire V210 and V240 servers are 1 rack unit (RU) or 2 RU servers with one or two processors.



FIGURE 1-1 The Sun Fire V210 Server



FIGURE 1-2 The Sun Fire V240 Server

Features

The Sun Fire V210 and V240 servers share these features:

- UltraSPARC IIIi processor
- Four DDR DIMM slots per processor
- Four 10/100/1000Base-T Ethernet ports
- One Ultra160 SCSI port
- One RJ-45 serial port for server management
- One DB-9 general purpose serial port
- Two USB ports
- One 10Base-T management port
- PCI expansion
- Optional DVD-ROM drive
- Up to four SCSI hard disk drives
- System configuration card
- Front and back service indicators
- Advanced Lights-Out Manager

Differentiating Features

TABLE 1-1 Differences Between the Sun Fire V210 and V240 Servers

	Sun Fire V210	Sun Fire V240
Height	1 RU	2 RU
PCI expansion	1x64-bit, 33/66-MHz, 3.3V PCI slot	1x64-bit, 33/66-MHz, 3.3V PCI slot 2x64-bit, 33 MHz, 5V PCI slots
Hard disk drive bays	2 Ultra160 SCSI	4 Ultra160 SCSI
Power supply units	Single AC	Dual redundant AC
Keyswitch	None	Behind front bezel

For detailed information about the features of the server, see the *Sun Fire V210 and V240 Servers Administration Guide*.

Sun Advanced Lights-Out Manager

The Sun Fire V210 and V240 servers are shipped with the Sun™ Advanced Lights Out Manager (ALOM) software installed. The system console is directed to ALOM by default and is configured to show server console information on startup.

ALOM enables you to monitor and control your server over either a serial connection (using the SERIAL MGT port), or Ethernet connection (using the NET MGT port). For information about configuring an Ethernet connection, refer to the ALOM Online Help.

Note – The ALOM serial port, labelled SERIAL MGT, is for server management only. If you need a general purpose serial port, use the serial port labeled 10101.

ALOM can be configured to send email notification of hardware failures and other events related to the server or to ALOM.

The ALOM circuitry uses standby power from the server. This means that:

- ALOM is active as soon as the server is connected to a power source, and remains active until power is removed by unplugging the power cable.
- ALOM continues to be effective even when the operating system is offline and when the server is in Standby mode.

TABLE 1-2 lists the components monitored by ALOM and describes the information provided for each component.

TABLE 1-2 What ALOM Monitors

Component	Status
Hard disk drives	Presence and status
System and CPU fans	Speed and status
CPUs	Presence, temperature and any thermal warning or failure conditions
Power supplies	Presence and status
System temperature	Ambient temperature and any thermal warning or failure conditions
Server front panel	Keypad position and LED status
Voltages	Status and thresholds
SCSI and USB circuit breakers	Status

Contents of the Ship Kit

The server is supplied with the components listed in TABLE 1-3. Make sure that all the parts are present in the ship kit. If any components are missing, contact your Sun sales representative.

TABLE 1-3 Contents of the Sun Fire V210 and V240 Servers Ship Kit

Description	Quantity	Part Number
Rackmount kit	1	370-5707-xx
System key (For use with Sun Fire V240 server only)	1	250-1317-xx
Antistatic wrist strap	1	250-1691-xx
RJ-45 to DB-9 adapter	1	530-3100-xx
RJ-45 to DB-25 adapter	1	530-2889-xx
Cat5 RJ-45 cable	1	530-2961-xx
<i>Sun Fire V210 and V240 Server Quick Start Guide</i>	1	816-4824-xx

TABLE 1-3 Contents of the Sun Fire V210 and V240 Servers Ship Kit

Description	Quantity	Part Number
<i>Sun Fire V210 and V240 Server Compliance and Safety Guide</i>	1	817-1462-xx
<i>Sun Fire V210 and V240 Server Installation Guide</i>	1	816-4825-xx
<i>Sun Fire V210 and V240 Server Documentation CD</i>	1	818-0325-xx

Installation Overview

Each step in this procedure refers you to the relevant section of the documentation for more information. Complete each step in the order listed.

1. Verify that you have received all of the components that ship with your server.

- See TABLE 1-3.

2. Install the server into a rack or cabinet.

- See “Rackmounting the Server” on page 10.

3. Install any optional components shipped with your system.

Note – See the installation procedures for these components in the *Sun Fire V210 and V240 Servers Administration Guide*, which is included on the *Sun Fire V210 and V240 Servers Documentation CD*.

4. Set up a terminal or console for installing your server.

You can either establish a `tip` connection from another server or use an ASCII terminal connected to the SERIAL MGT port.

- See “Setting Up a Console Connection to the Server” on page 36.

5. Power on and configure the server.

The Solaris operating environment is preinstalled on the server. When you power on, you will automatically be taken through the Solaris operating environment configuration procedure.

- See “Powering On The Server” on page 42.

6. Set any desired OpenBoot PROM configuration options (optional).

You can control several aspects of system behavior through OpenBoot™ PROM commands and configuration variables.

- See the *Sun Fire V210 and V240 Servers Administration Guide*.
- 7. **Load additional software from the Solaris media kit (optional).**

The Solaris media kit (sold separately) includes several CDs containing software to help you operate, configure, and administer your server. See the documentation provided with the Solaris media kit for a complete listing of included software and detailed installation instructions.
- 8. **Load online documentation from the Sun Fire V210 and V240 Documentation CD.**
- See the installation instructions that accompany the Sun Fire V210 and V240 Documentation CD for more information.

Using the Sun Fire V210 and V240 Servers Documentation

The following documents are shipped in hardcopy:

- *Sun Fire V210 and V240 Servers Quick Start Guide*
- *Sun Fire V210 and V240 Servers Installation Guide*
- *Sun Fire V210 and V240 Servers Compliance and Safety Manual*
- *Sun Fire V210 and V240 Servers Product Notes*

The following documents are shipped in PDF format on the documentation CD-ROM:

- *Sun Fire V210 and V240 Servers Administration Guide*
- *Advanced Lights-Out Manager Version 1.0 Online Help*

▼ To View Documentation on CD

1. Load the documentation CD into the CD tray.
2. Navigate to the CD directory.
3. Open the file named `HOME.PDF`

Installing the Hardware

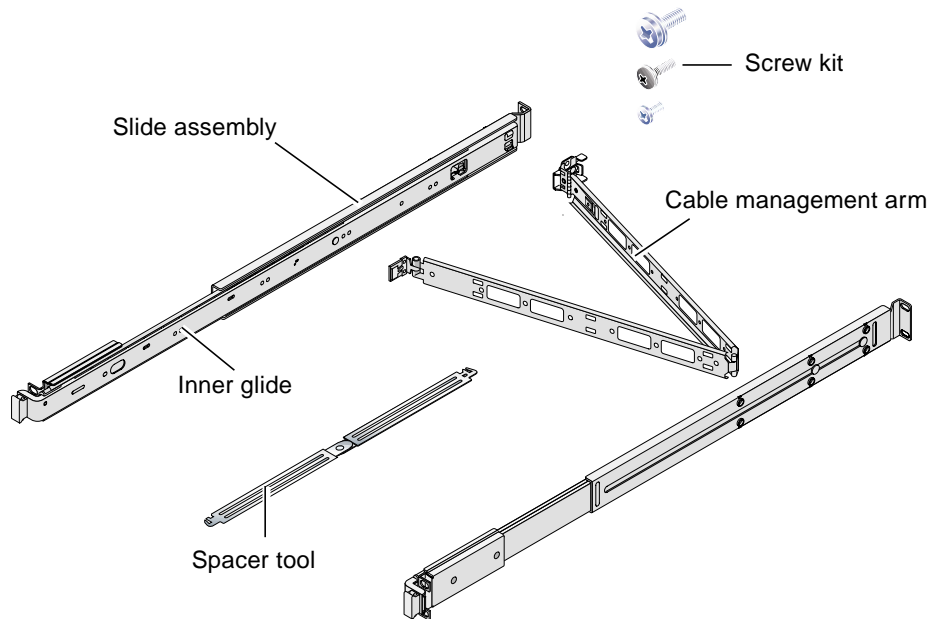
This chapter describes how to mount the Sun Fire V210 and V240 servers into a rack and attach the cables, and provides environmental and operating information. It includes the following sections:

- “Rackmounting the Server” on page 10
- “Connecting the Cables” on page 21
- “Status Indicators” on page 26
- “Physical Specifications” on page 28
- “Environmental Requirements” on page 28
- “Acoustic Noise Generated” on page 31
- “Operating Power Limits and Ranges” on page 32

Rackmounting the Server

The rackmount kit consists of:

- slide assemblies
- spacer tool
- cable management arm
- screw kit



Rackmounting Overview

- The inner glides come out of the slide assemblies and attach to the server.
- The slide assembly outers attach to the rack (use the spacer tool for correct alignment).
- The server slides into the mounted slide assemblies.
- The cable management arm clips into the slide assemblies (without screws).
- Velcro straps hold cables in place along the length of the cable management arm.

Compatible Racks

Use the slide rail kit to mount the server into the rack types listed below:

- Sun Microsystems Sun Rack 900
- Sun Microsystems Sun Fire Expansion Cabinet

▼ To Rackmount the Server

1. **Remove the inner glides from the slide assemblies.** See FIGURE 2-1.
 - a. **Press the release tabs on the catch at the end of the inner glide.**
 - b. **Run the glide out to the first stop.**
 - c. **Release the inner glide from the locked position by pulling the trigger on the inside of the inner glide.** See FIGURE 2-1.

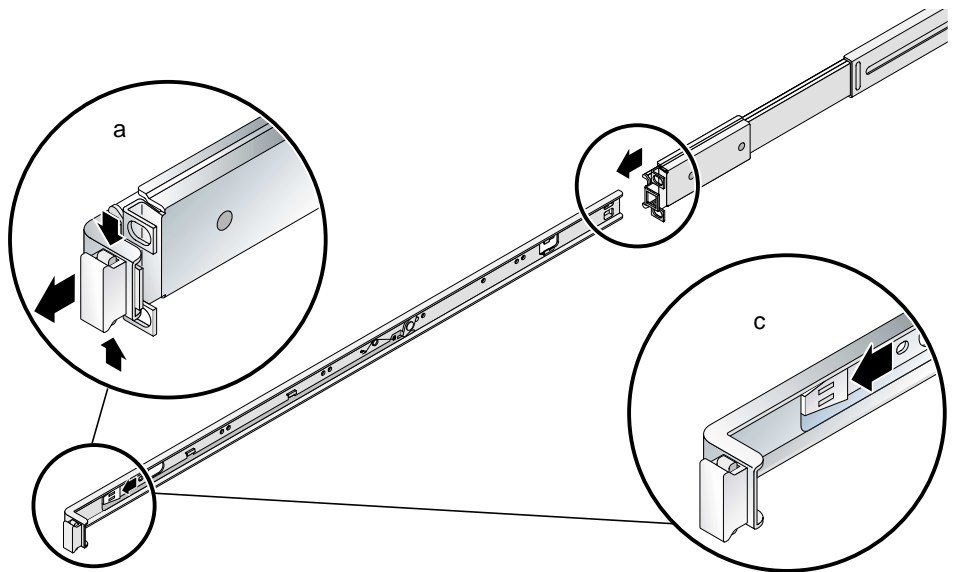


FIGURE 2-1 Removing the Inner Glide from the Slide Assembly

Caution – When you operate the triggers to slide the server into and out of the rack, move your fingers away from the trigger area once the server is released. There is a pinch risk if you do not.

d. Remove the inner glides from the slide assemblies.

2. Attach the inner glides to the sides of the server using the screws provided.

The inner glides are marked F and R for Front and Rear. The catches should be at the front of the server (see FIGURE 2-2).



FIGURE 2-2 Attaching the Inner Glides to the Server

3. Screw the slide assemblies to the rack. Do not tighten the screws fully, leave them loose enough to allow movement.

Screws on the inside of the slide assemblies allow for adjustment to fit different rack depths. See FIGURE 2-3.

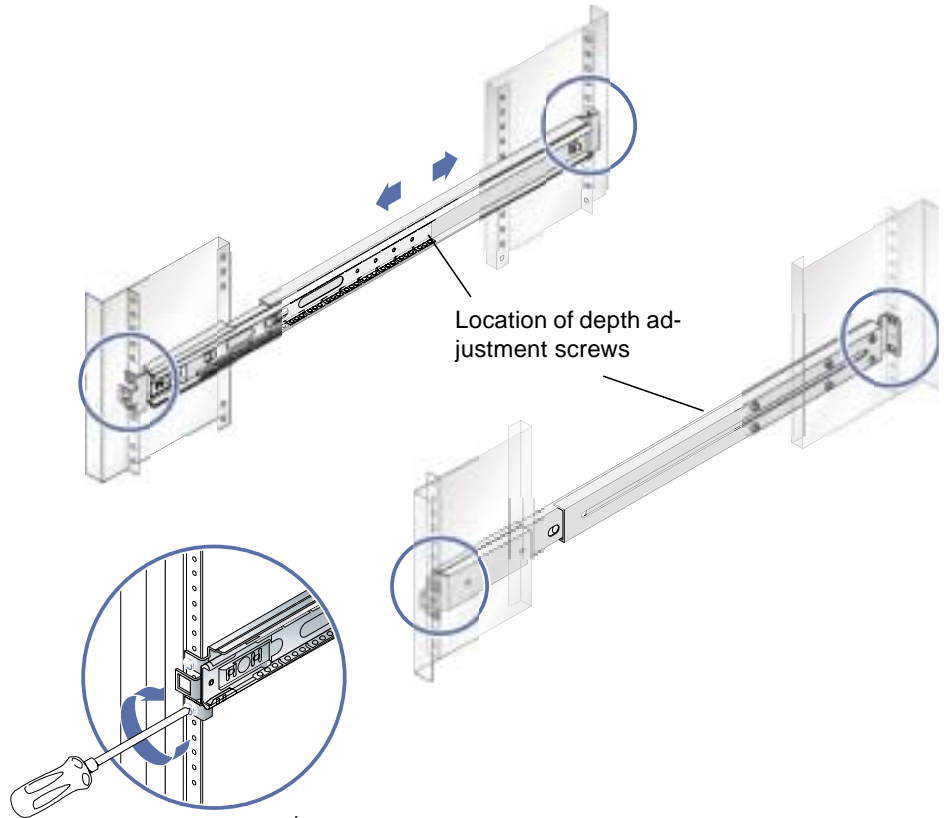


FIGURE 2-3 Attaching the Slide Assemblies to the Rack

4. If you adjusted the depth of the slide assemblies, make sure that the adjustment screws have been re-tightened.
5. At the front of the rack, use the spacer tool to make sure that the assemblies are mounted centrally in the rack and are vertical.

Place the wider cutouts in the spacer tool over the square catches at the front of the slide assemblies. See FIGURE 2-4.

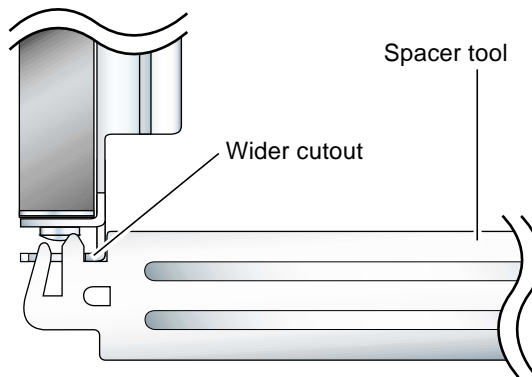


FIGURE 2-4 Spacer Tool Placement (Plan View)

- a. Place the spacer tool at the top of the catches, and tighten the screws enough to allow precise placement of the slide assemblies.

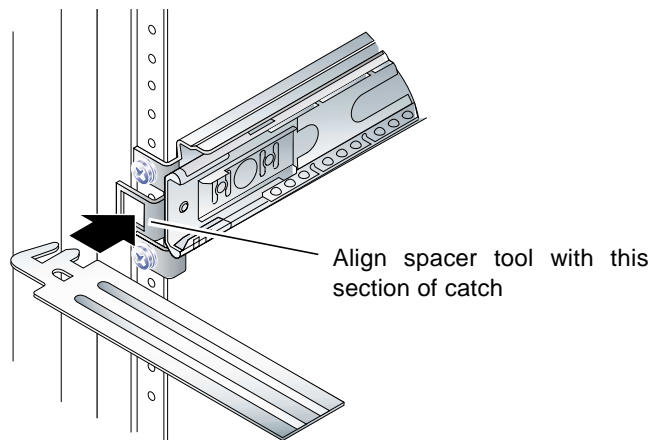


FIGURE 2-5 Using the Spacer Tool

- b. Move the spacer tool to the bottom of the catches.

6. Ensure the slide assemblies are aligned vertically as shown in FIGURE 2-6.

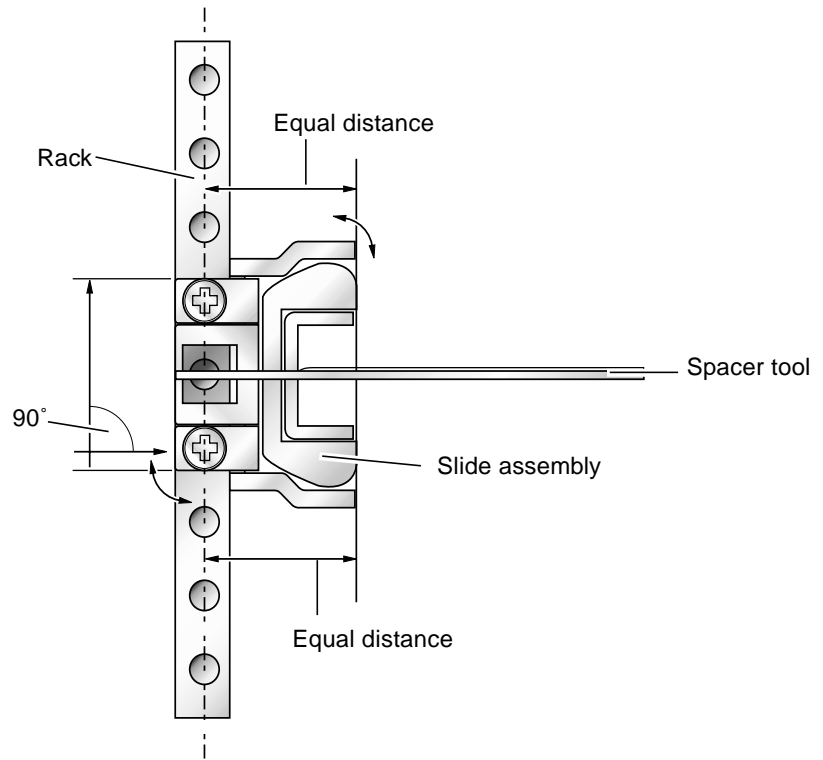


FIGURE 2-6 Slide Assembly Vertical Alignment

7. With the spacer tool still in place and the slide assemblies vertical, fully tighten the screws at the front of the rack.

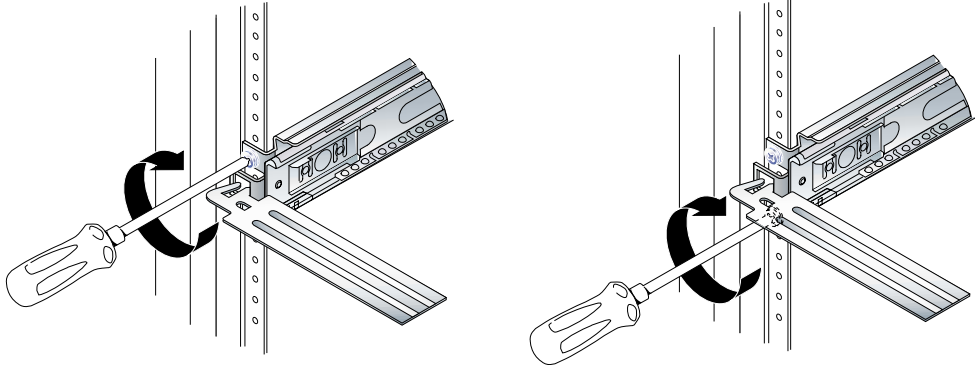


FIGURE 2-7 Tightening the Front Screws

8. Remove the spacer tool.
9. Extend both slide assemblies to reveal the slot towards the back of each.

10. At the back of the rack, insert the narrow cutouts in the spacer tool into the slots in the slide assemblies.

See FIGURE 2-8 for slot location.

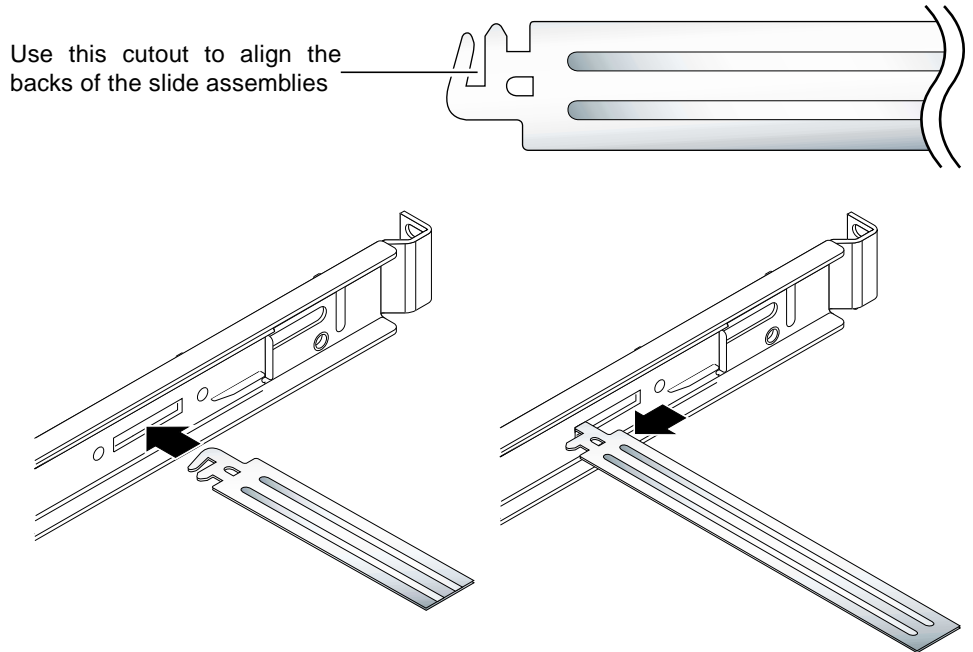


FIGURE 2-8 Using the Spacer Tool at the Back of the Rack

11. Fully extend the spacer tool.

This ensures that the slide assemblies are parallel. See FIGURE 2-9.

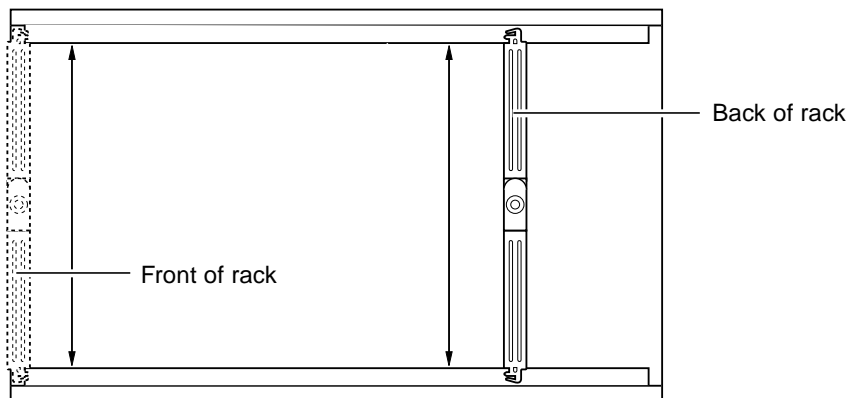


FIGURE 2-9 Slide Assembly Parallel Alignment

12. Ensure that the brackets on the back of the slide assemblies are mounted centrally in the rack and are vertical.

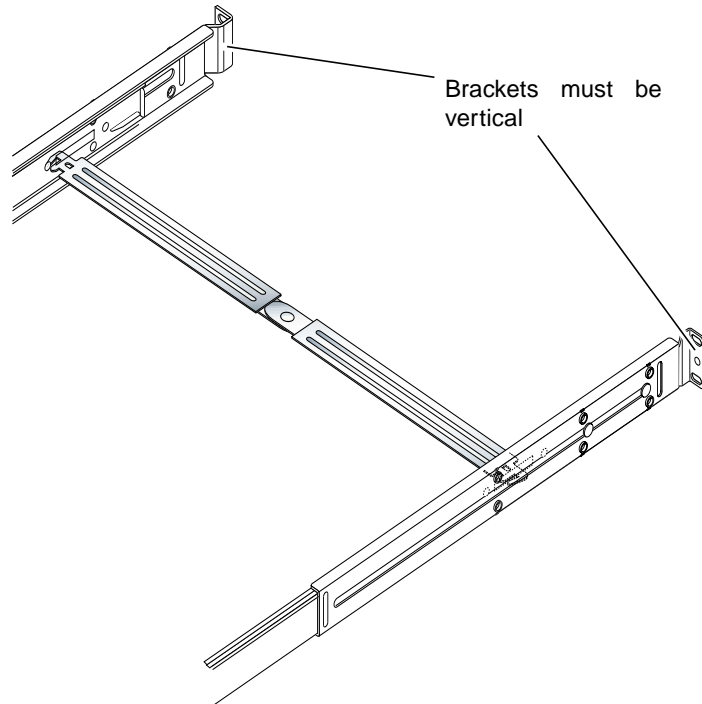


FIGURE 2-10 Using Spacer Tool at the Back of the Rack

13. With the spacer tool in place, fully tighten the screws at the back of the rack.
14. Remove the spacer tool.
15. At the front of the rack, ensure that the slide assemblies are not extended.
Lift the release catch to close the slide assemblies. You can use the spacer tool to lift the catches. For latch location, see FIGURE 2-11.

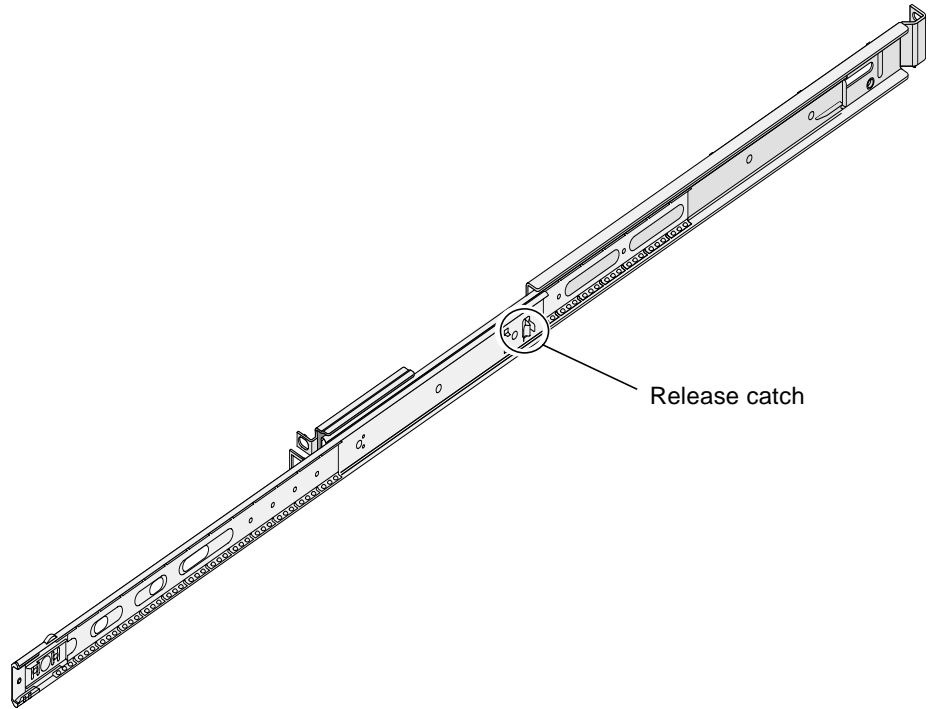


FIGURE 2-11 Location of Slider Release Catch

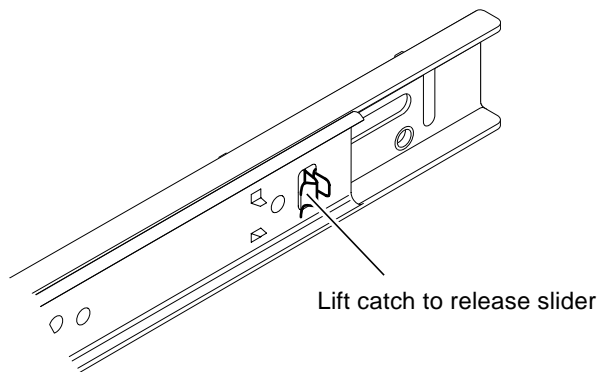


FIGURE 2-12 Release Catch Operation

16. Run the server into the slide assembly.

When the server comes to its stop point, pull the green trigger on the outside of the inner glides to allow the server to slide fully into the rack.

Caution – When you operate the triggers to slide the server into and out of the rack, move your fingers away from the trigger area once the server is released. There is a pinch risk if you do not.

17. Clip the cable management arm to the slide assembly.

There are clips at each end of the cable management arm which attach to the slide assemblies. See FIGURE 2-13.

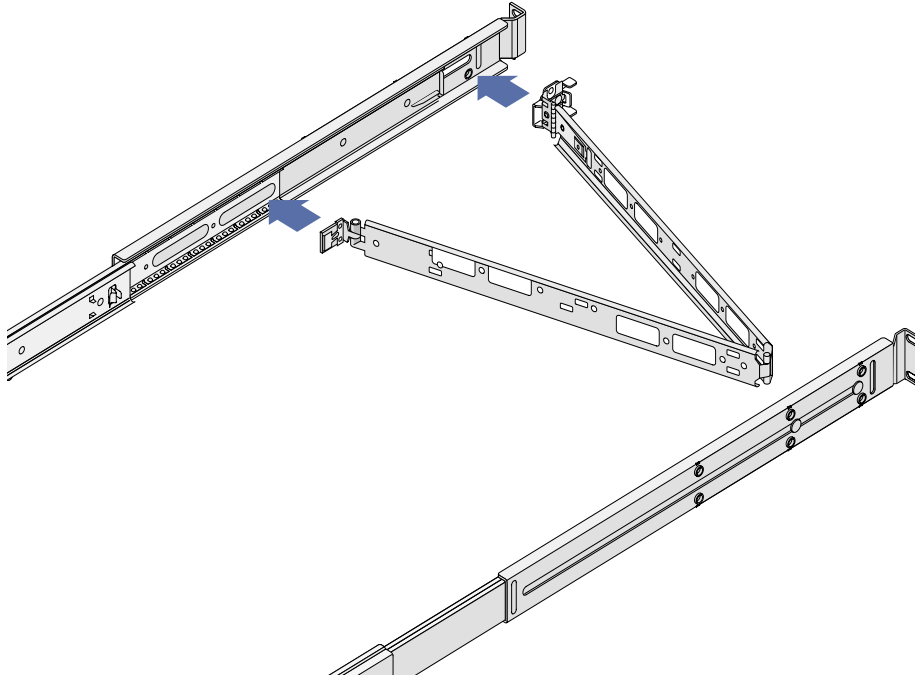


FIGURE 2-13 Attaching the Cable Management Arm

18. Thread the velcro straps through the holes in the cable management arm.

19. Secure the cables along the length of the cable management arm using the velcro straps.

Caution – Leave enough slack in the cable to allow for articulation of the cable management arm and extension of the slide assemblies.

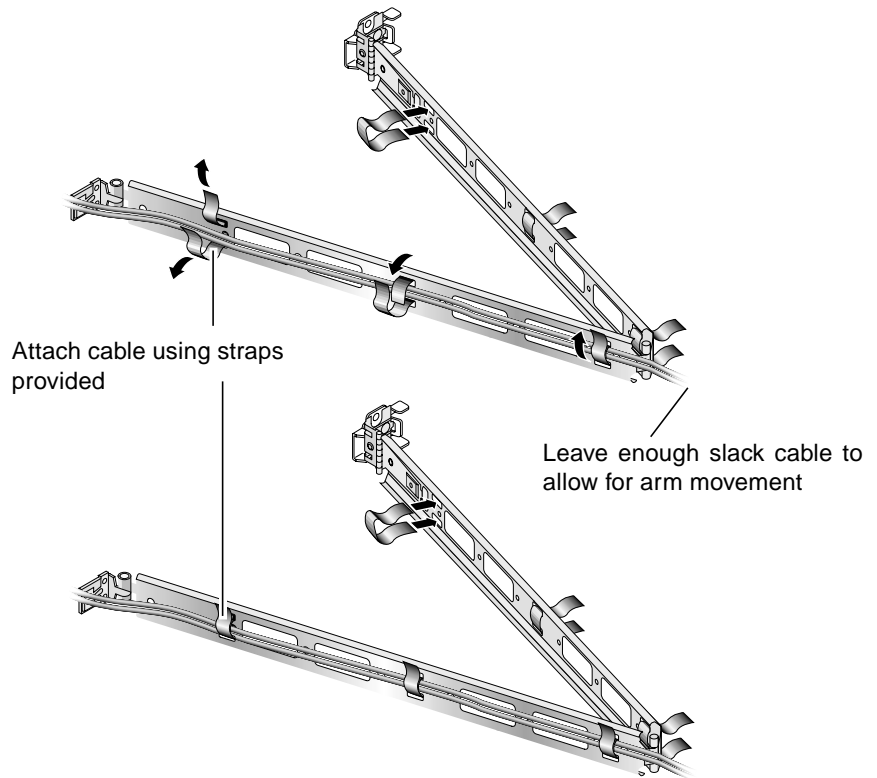


FIGURE 2-14 Attaching Cables to the Cable Management Arm

20. Use the screw at the end of the cable management arm to adjust the angle of the arm when it is fixed in the rack.

Connecting the Cables

This section shows the location of the I/O ports on the back of the servers.

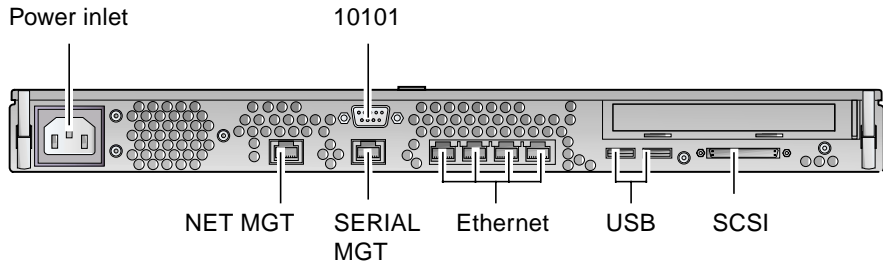


FIGURE 2-15 Sun Fire V210 Server Back Panel

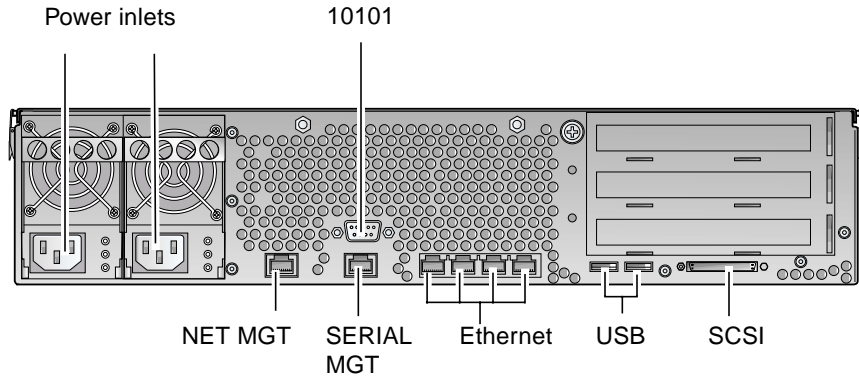


FIGURE 2-16 Sun Fire V240 Server Back Panel

Power

The Sun Fire V210 server has a single AC inlet on the back of the server. The Sun Fire V240 server has two inlets, one for each power supply unit. The operating range is shown in TABLE 2-10. As long as the server is connected to a power source, the server is in Standby power mode. The only way to turn the server fully off is to remove the server from the power source by unplugging the power cable.

Ethernet Ports

The Sun Fire V210 and V240 servers each have four autonegotiating 10/100/1000Base-T Ethernet system domain ports. All the Ethernet ports use a standard RJ-45 connector, the transfer rates for which are given in TABLE 2-1.

TABLE 2-1 Ethernet Connection Transfer Rates

Connection Type	IEEE Terminology	Transfer Rate
Ethernet	10Base-T	10 Mbit/s
Fast Ethernet	100Base-TX	100 Mbits/s
Gigabit Ethernet	1000Base-T	1000 Mbit/s

In addition, each server has one 10Base-T Ethernet management domain interface, labelled NET MGT. For information on configuring this port for managing the server with ALOM, see the ALOM Online Help which is included on the *Sun Fire V210 and V240 Server Documentation CD*.

Serial Ports

The server has two serial ports, labelled SERIAL MGT and 10101.

The SERIAL MGT port accepts an RJ-45 connector. Use this port *only* for server management.

The port labelled 10101 accepts a DB-9 connector. Use this port for general purpose serial data transfer.

The default serial connection settings are listed in TABLE 2-2.

TABLE 2-2 Default Serial Connection Settings

Parameter	Setting
Connector	SERIAL MGT or 10101
Rate	9600 baud
Parity	None
Stop bits	1
Data bits	8

If you need to connect to the SERIAL MGT port using either a DB-9 or a DB-25 connector, use an adapter to perform the crossovers given for each in TABLE 2-3 and TABLE 2-4.

RJ-45 to DB-9 Adapter Crossovers

TABLE 2-3 RJ-45 to DB-9 Adapter Crossovers

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

RJ-45 to DB-25 Adapter Crossovers

TABLE 2-4 RJ-45 to DB-25 Adapter Crossovers

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

USB Ports

The server has two USB ports for attaching supported devices.

External SCSI Port

The SCSI port is a multimode Ultra 160SCSI interface. To operate at Ultra 160SCSI speeds, it must be in LVD mode. If a single-ended device is connected to the server, it automatically switches to single-ended mode.

Status Indicators

The servers have LED indicators associated with the server itself and with various components. The server status indicators are located on the bezel and repeated on the back panel. The components with LED indicators to convey status are power supply units, Ethernet ports and hard disk drives.

The tables below explain the indicators.

TABLE 2-5 Server Status Indicators

Indicator	LED Colour	LED State	Meaning
Activity	Green	On	The server is powered up and running the Solaris operating environment.
		Off	Either power is not present, or Solaris is not running.
Service Required	Yellow	On	The server has detected a problem and requires the attention of service personnel.
		Off	The server has no detected faults.
Locator	White	On	Identifies the server from others in a rack.

TABLE 2-6 Hard Disk Drive Indicators

Indicator	LED Colour	LED State	Component Status
Activity	Green	Flashing	Active SCSI transactions
		Off	No activity
Ready to remove	Blue	On	Ready to remove
		Off	Not ready to remove

TABLE 2-7 Network Link Indicators

LED Colour	LED State	Network Link Status
Green	On	Link is established.
	Blinking	Link is transferring data.
	Off	Link is not established.

TABLE 2-8 Network Speed Indicators

LED Colour	LED State	Network Speed Status
Green	On	The network link is established and running at its maximum supported speed.
	Off	<ul style="list-style-type: none">• If the network link indicator is on, the network link is established but not running at its maximum supported speed.• If the network link indicator is also off, network link is not established.

Physical Specifications

TABLE 2-9 Sun Fire V210 and V240 Servers: Physical Specifications

	Dimension	Metric
Sun Fire V210 server	Height	43.2mm
	Width	425mm excluding rackmounts
	Depth	635mm
	Weight	15 kg including rackmounts
Sun Fire V240 server	Height	87.6mm
	Width	425mm excluding rackmounts
	Depth	635mm
	Weight	22 kg including rackmounts

Environmental Requirements

You can operate and store the system safely in the conditions detailed in TABLE 2-10, FIGURE 2-17 and FIGURE 2-18.

TABLE 2-10 Operating and Storage Specifications

Specification	Operating	Storage
Ambient temperature	5°C to 40°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

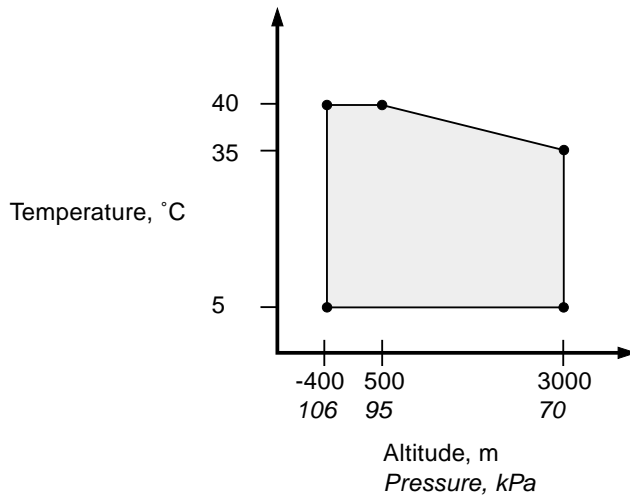


FIGURE 2-17 Temperature and Altitude Operating Ranges

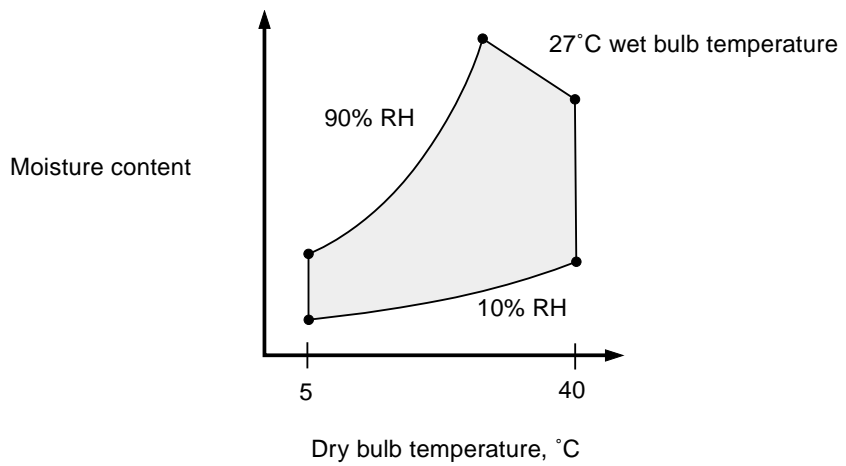


FIGURE 2-18 Temperature and Relative Humidity Ranges

Recommended Operating Environment

Your environmental control system must provide intake air for the server which complies with the limits specified in “Environmental Requirements” on page 28.

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 2-10 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%.

Airflow Considerations

The Sun Fire V210 and V240 servers self-cool when operated in still air.

- Ensure unobstructed airflow through the chassis.
 - The Sun Fire V210 server uses internal fans that can achieve a total airflow of 30cfm in normal operating conditions.
 - The Sun Fire V240 server uses internal fans that can achieve a total airflow of 60cfm in normal operating conditions.
- Inlet air enters at the front of the server and exits from the back.
- Ventilation openings for both the inlet and exhaust of the system should provide:
 - Sun Fire V210 server: a minimum open area of 85 cm² (13 in²) each
 - Sun Fire V240 server: a minimum open area of 170 cm² (26 in²) each
- Allow a minimum of 88.9mm (3.5inches) clearance at the front and rear of the server when mounted, unless an unobstructed airflow can be ensured.

Acoustic Noise Generated

TABLE 2-11 Acoustic Noise Generated

Server	Noise generated
Sun Fire V210 Server	less than 6.7B sound power in ambient temperature of up to 27°C, measured on a standalone system to ISO 9296 requirements
Sun Fire V240 Server	less than 7.1B sound power in ambient temperature of up to 27°C, measured on a standalone system to ISO 9296 requirements

Operating Power Limits and Ranges

The table below gives operating power for the Sun Fire V210 and V240 servers.

TABLE 2-12 Operating Power Limits and Ranges for the Sun Fire V210 and V240 Servers

Description	Sun Fire V210 Server	Sun Fire V240 Server
Operating Input Voltage Range	90 - 264 Volts	90 - 264 Volts
Operating Frequency Range	47 - 63 Hz	47 - 63 Hz
Maximum Operating Current	3.58 Amps @ 90 VAC	4.17 Amps @ 90 VAC
Maximum Operating Power	322 Watts	375 Watts
Worst Case Power Factor	0.94	0.96

Note – The figures for the maximum operating current are provided to help you specify the fusing and cabling you need to deliver power to your equipment. However, these figures represent “worst-case” scenarios. Such occurrences are unlikely in a real installation.

Calculating Power Consumption

TABLE 2-13 shows the estimated power consumed in a fully powered system.

TABLE 2-13 Power Consumption

Server Model	Configuration	Average Power (Watts)	Instantaneous Power (VA)
Sun Fire V210	1x1064 MHz CPU 512 MB DIMM 1xHDD	141	144
Sun Fire V210	1x1064MHz CPU 1G MB DIMM 2xHDD	160	163
Sun Fire V210	2x1064MHz CPU 2G DIMM 2xHDD	228	232

TABLE 2-13 Power Consumption

Server Model	Configuration	Average Power (Watts)	Instantaneous Power (VA)
Sun Fire V210	2x1064MHz CPU 4G DIMM 2xHDD	232	236
Sun Fire V240	1x1064MHz CPU 512M DIMM 1xHDD	137	138
Sun Fire V240	2x1064MHz CPU 2G DIMM 2xHDD	220	223
Sun Fire V240	2x1280MHz CPU 2G DIMM 2xHDD	233	235
Sun Fire V240	2x1280MHz CPU 4G DIMM 2xHDD	247	250

Note – Power consumption figures refer to the power drawn from the AC feed. No correction is required for PSU efficiency.

Calculating Heat Dissipation

To calculate the heat generated by a server so that you can estimate the heat your cooling system must dissipate, convert the figure for the system's power requirement from watts to BTU/hr. A general formula for doing this is to multiply the power requirement figure in watts by 3.412.

Communicating With The Server

This chapter provides information on connecting a console device to the server.

The chapter contains the following section.

- “Setting Up a Console Connection to the Server” on page 36
- “Connecting to the Server Using a System Running Microsoft Windows” on page 37
- “Using the Sun Fire V210 and V240 Server With a Terminal Server” on page 39

Setting Up a Console Connection to the Server

In order to communicate with the server you must connect a console to it.

Whichever type of device you use as a console, make the physical connection to the server by connecting to the appropriate port on the console and to the SERIAL MGT port on the back of the server.

▼ To Connect to the Server Using a Sun Workstation

1. Connect to the server using an RJ-45 patch cable.
2. From a terminal session, type:

```
# tip /dev/term/a -9600
```

The `tip` command above is for a workstation that is using its `ttya` serial port to connect to the server. If you later configure your workstation to use `ttyb`, type the following to set up a `tip` session:

```
# tip /dev/term/b -9600
```

Note – The commands given here will change if the serial connection settings have been reconfigured.

▼ To Connect to the Server Using an ASCII Terminal

1. Set up a connection between the terminal and the Sun Fire V210 and V240 server.
2. For the General terminal settings, refer to the terminal's operating manual.

3. Make the setting changes shown below.

Property	Setting
Duplex	Full
Bit Rate	9600
Parity	No
Data Bits	8
Stop Bit	1
Flow Control	None
VT100 Emulation	On (if applicable)

For information about how to power on and configure the server, go to “Powering On The Server” on page 42.

Connecting to the Server Using a System Running Microsoft Windows

If you want to configure and operate a Sun Fire V210 or V240 server from a PC or laptop running Microsoft Windows, you can do so using the Windows Hyperterminal.

Note – The following procedure relates to Windows 98. Other variants of Microsoft Windows may differ slightly.

Note – If you use a Palm Pilot or similar device, make sure that Hot Sync Manager is closed. If it is not, you will not be able to communicate with the server from your PC or laptop.

▼ To Connect to the Server

1. Connect the RJ-45 patch cable to the port labeled **SERIAL MGT** on the rear of the server.

2. Connect the other end of the patch cable to the DB-9 adapter.
3. Connect the DB-9 serial adapter to the COM1 serial port on your PC or laptop.
4. Open a Windows Hyperterminal:
 - a. Choose Start > Programs > Accessories > Communications > Hyperterminal
 - b. Run `Hyperttrm.exe`
5. In the Set Up New Session window:
 - a. Name the session.
 - b. Choose an icon.
 - c. Click OK.
6. In the Connect To window:
 - a. Click Edit.
 - b. Click Connect Using.
 - c. In the drop-down menu, click Direct to COM1.

Note – If you connected the DB-9 adaptor to a port other than COM1 on your PC or laptop, choose the appropriate option from the list in the drop-down menu.

- d. Click OK.
7. In the COM1 Properties window:
 - a. Change the Bits Per Second value to 9600.
 - b. Set Flow Control to Xon/Xoff.

The correct values for all settings in this window are as shown below.

Property	Setting
Bits Per Second	9600
Data Bits	8
Parity	None
Stop Bits	1
Flow Control	Xon/Xoff

c. Click OK.

The `sc>` prompt appears in the Windows Hyperterminal.

Using the Sun Fire V210 and V240 Server With a Terminal Server

The serial ports on the Sun Fire V210 and V240 server are DTE ports. If you connect these to other DTE ports, then the cabling between them must perform a crossover (also known as a roll-over).

If the pinouts for the server's serial ports correspond with the pinouts for the RJ-45 ports on the terminal server, you have two connection options:

- Connect a serial interface breakout cable directly to the Sun Fire V210 and V240 server.
- Connect a serial interface breakout cable to a patch panel and use the straight-through patch cable (supplied by Sun) to connect the patch panel to the server.

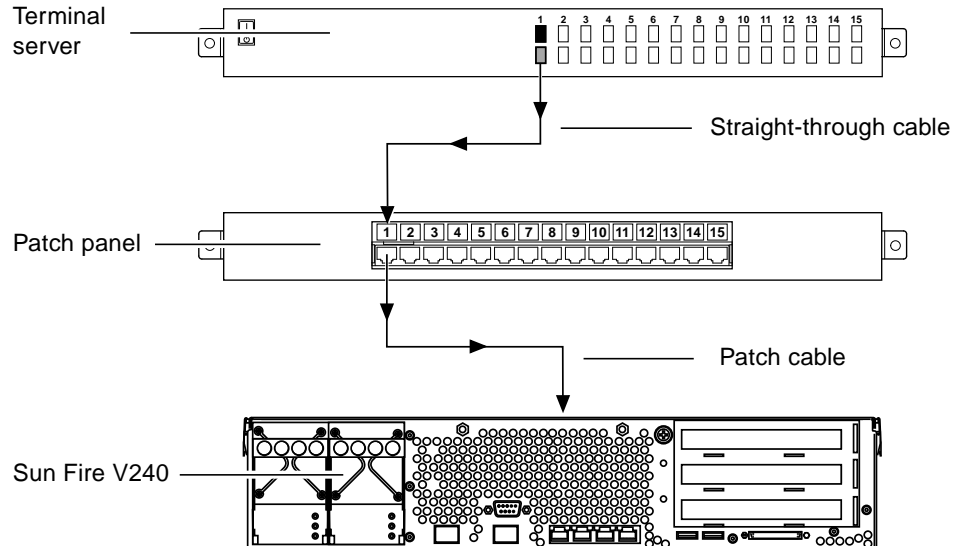


FIGURE 3-1 Patch Panel Connection Between a Terminal Server And A Sun Fire V240

If the pinouts for the server's serial ports *do not* correspond with the pinouts for the RJ-45 ports on the terminal server, you need to make a crossover cable that takes each pin on the Sun Fire V210 and V240 server's serial port to the corresponding pin in the terminal server's serial port.

TABLE 3-1 shows the crossovers that the cable must perform.

TABLE 3-1 Pin Crossovers for Connecting to a Typical Terminal Server

Sun Fire V210 and V240 Serial Port (RJ-45 Connector) Pin	Terminal Server Serial Port Pin
Pin 1 (RTS)	Pin 1 (CTS)
Pin 2 (DTR)	Pin 2 (DSR)
Pin 3 (TXD)	Pin 3 (RXD)
Pin 4 (Signal Ground)	Pin 4 (Signal Ground)
Pin 5 (Signal Ground)	Pin 5 (Signal Ground)
Pin 6 (RXD)	Pin 6 (TXD)
Pin 7 (DSR /DCD)	Pin 7 (DTR)
Pin 8 (CTS)	Pin 8 (RTS)

▼ To Connect to a Sun Fire V210 and V240 Server Through a Terminal Server

1. Attach the appropriate cables as described in “Using the Sun Fire V210 and V240 Server With a Terminal Server” on page 39.
2. Open a terminal session on the console, and type:

```
# telnet IP-address-of-terminal-server port-number
```

For example, for a Sun Fire V210 and V240 server connected to port 10000 on a terminal server whose IP address is 192.20.30.10, you would type:

```
# telnet 192.20.30.10 10000
```

Powering On and Configuring the Server

This chapter tells you how to power on and configure the server to suit your application. It contains the sections:

- “Powering On The Server” on page 42
- “Configuring The Server” on page 44
- “Accessing Advanced Lights-Out Manager (ALOM)” on page 47

Powering On The Server

To power on the server, you can use either the On/Standby switch located behind the front bezel, or you can use the keyboard. Powering on from the keyboard is better because you can see system output as the server powers on.

Keyswitch (Sun Fire V240 only)

Before you begin the procedures in this section, make sure that the keyswitch is in the *normal* position. This position allows the On/Standby switch to control the power state of the server. For more information on the operation of the keyswitch, see the *Sun Fire V210 and V240 Server Administration Guide*.

The Sun Fire V210 server does not have a keyswitch.

▼ To Power On From The Keyboard

1. Connect the server to the power supply.

The server automatically goes into Standby power mode when it is connected to a power source.

2. Set up a connection to the SERIAL MGT port.

For details, see “Setting Up a Console Connection to the Server” on page 36.

When you switch to the ALOM prompt after initial poweron, you will be logged in as the admin user and prompted to set a password. You must set this password in order to execute certain commands.

3. If you are prompted to do so, set a password for the admin user.

The password must:

- contain at least two alphabetic characters
- contain at least one numeric or one special character
- be at least six characters long

Once the password is set, the admin user has full permissions and can execute all ALOM CLI commands.

4. Turn on power to any peripherals and external storage devices you have connected to the server.

Read the documentation supplied with the device for specific instructions.

5. At the console `sc>` prompt, type the following command to power on the server:

```
sc> poweron
```

▼ To Power On Using the On/Standby Switch



Caution – Never move the system when the system power is on. Movement can cause catastrophic disk drive failure. Always power off the system before moving it.

1. **Connect the server to the power supply.**

The server automatically goes into Standby power mode when it is connected to a power source.

2. **Turn on power to any peripherals and external storage devices you have connected to the server.**

Read the documentation supplied with the device for specific instructions.

3. **Open the front bezel.**

4. **Sun Fire V240 only: insert the system key into the keyswitch and set it to the Normal or Diagnostics position.**

5. **Press the On/Standby switch.**

6. **Sun Fire V240 only:**

- a. **Turn the key switch to the Locked position.**

This prevents anyone from accidentally powering off the system.

- b. **Remove the system key from the keyswitch and store it in a secure place.**

7. **Close the front bezel.**

▼ To Power Off The System Using The On/Standby Switch

Note – Applications running on the Solaris operating environment can be adversely affected by a poorly executed system shutdown. Make sure you have gracefully shut down any applications before powering off the system.

1. **Notify users that the system will be powered down.**
2. **Back up the system files and data, if necessary.**
3. **Sun Fire V240 only: ensure that the keyswitch is in the Normal or Diagnostics position.**
4. **Press and release the On/Standby switch behind the front bezel.**

The system begins an orderly software system shutdown.

Note – Pressing and releasing the On/Standby switch initiates an orderly software shutdown. Pressing and holding the switch for four seconds causes an immediate hardware shutdown. Whenever possible, you should initiate an orderly shutdown. Forcing an immediate hardware shutdown can corrupt the disk drive and cause loss of data.

5. **Wait for the front panel green LED to go out.**
6. **Sun Fire V240 only: remove the system key from the keyswitch and store it in a secure place.**

Configuring The Server

The Sun Fire V210 and V240 server comes preinstalled with the Solaris 8 operating environment. When you power on the server for the first time, you will automatically be taken through a configuration procedure. This procedure consists of a number of questions. The answers you give determine how the server is configured.

Choose the configuration that best suits your requirements from the list below, and follow the instructions in the appropriate section to power on and configure your server.

- “To Configure With the Server’s Details Registered at a Name Server” on page 45
- “To Configure Without the Server’s Details Registered at a Name Server” on page 45
- “To Configure a Standalone Server for the First Time” on page 46
- “To Clear the Configuration and Start Again” on page 47

▼ To Configure With the Server's Details Registered at a Name Server

Note – Follow the instructions in this section only if you have a name server installed on your network. For instructions on using a name server to automate the process of configuring the Solaris operating environment on multiple servers, refer to the *Solaris Advanced Installation Guide* that accompanies the Solaris operating environment CDs.

During booting you will be prompted for certain information. The information you provide determines the configuration of the server.

1. **Specify the type of terminal with which you are communicating with the server.**
2. **Specify whether you need IPv6 enabled, and then follow the instructions on the screen.**
3. **Specify whether you want to enable the Kerberos Security mechanism, and then follow the instructions on the screen.**
4. **When prompted, give a password (if any) for users logging in as root.**

▼ To Configure Without the Server's Details Registered at a Name Server

Follow the instructions in this section if you do not have a Name Server configured on your network.

Tip – Read these instructions through before you follow them, to see what information the system will prompt you for when you start it for the first time.

During booting you will be prompted for certain information. The information you provide determines the configuration of the server.

1. **Specify the type of terminal with which you are communicating with the server.**
2. **When asked if you want the server to be networked, answer Yes.**
If manually, specify an IP address when prompted.
3. **Specify whether the IP address is to be configured by DHCP.**
4. **Specify which of the Ethernet ports you intend to use as the primary Ethernet connection.**

5. **Specify a host name for the server.**
6. **If prompted, specify the IP address for the system.**

The system prompts you for this address if you declined to use DHCP in Step 3. It also asks you whether the server is to be part of a subnet, and if you answer Yes it prompts you to provide the netmask of the subnet.
7. **Specify whether you need IPv6 enabled, and then follow the instructions on the screen.**
8. **Specify whether you want to enable the Kerberos Security mechanism, and then follow the instructions on the screen.**
9. **Specify the name service you want the server to use.**
10. **Specify the name of the domain of which the server will be a part.**
11. **Specify whether you want the system to search the network for a name server or whether you want it to use a particular name server.**
12. **If you chose to use a particular name server, specify the host name and IP address of the name server.**
13. **At the name server, create entries in the network administration files for the system you are setting up.**
14. **At the system you are setting up, follow the prompts to provide time and date information.**
15. **When prompted, give a password (if any) for users logging in as root.**

▼ **To Configure a Standalone Server for the First Time**

1. **Specify the type of terminal you are using to communicate with the server.**
2. **When prompted to indicate whether you want the server to be networked, specify No.**
3. **Specify a Host Name for the server.**
4. **Confirm the information you have given.**
5. **Specify the date and time information.**
6. **When prompted, give a password (if any) for users logging in as root.**

Clearing Your Configuration

If you want to start the power on process again, as if from a previously unused server, you must clear the configuration of the server.

▼ To Clear the Configuration and Start Again

1. At the Solaris prompt, type:

```
# sys-unconfig
```

2. When prompted to confirm that you want to create a “blank” server, type *y*.
3. When the OBP prompt appears, type:

```
ok> boot
```

4. Follow the instructions in one of the following sections:
 - “To Configure With the Server’s Details Registered at a Name Server” on page 45 or
 - “To Configure Without the Server’s Details Registered at a Name Server” on page 45
 - “To Configure a Standalone Server for the First Time” on page 46

Accessing Advanced Lights-Out Manager (ALOM)

For a brief introduction, see “Sun Advanced Lights-Out Manager” on page 4. For detailed ALOM instructions, and configuration information, refer to the ALOM Online Help which is included on the *Sun Fire V210 and V240 Server Documentation CD*.

The ALOM software is preinstalled on the server and is ready to run as soon as power is applied to the server. However, you need to perform some basic configuration steps to customize the ALOM software to suit your application.

▼ To Display The ALOM Prompt

1. Type the default keystroke sequence:

```
# #.
```

Note – When you switch to the ALOM prompt after initial poweron, you will be logged in as the admin user and prompted to set a password. You must set this password in order to execute certain commands.

- If you are prompted to do so, set a password for the admin user.

The password must:

- contain at least two alphabetic characters
- contain at least one numeric or one special character
- be at least six characters long

Once the password is set, the admin user has full permissions and can execute all ALOM CLI commands.

▼ To Display the Console Prompt

1. Type:

```
sc> console
```

More than one ALOM user can be connected to the server console stream at a time, but only one user is permitted to type input characters to the console.

If another user is logged on and has write capability, you will see the message below after issuing the `console` command:

```
sc> Console session already in use. [view mode]
```

▼ To Take Console Write Capability Away From Another User

1. Type:

```
sc> console -f
```


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