



# Sun Fire™ V210 and V240 Servers Getting Started Guide

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# Introducing the Sun Fire V210 and V240 Servers

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This guide provides you with a starting point for understanding the scope of the November 2005 release of the Sun Fire™ V210 and V240 servers. This guide also includes links to the resources available with these servers, instructions for planning the installation of a Sun Fire V210 or V240 server, and information for locating the cable connections, configuring the server and preinstalled software, and finding more information about these servers.

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## Servers Overview

The Sun Fire V210 and V240 servers are both UltraSPARC® IIIi based machines that are rackmountable. Both servers come with the Solaris™ 10 Operating System (OS), the Java™ Enterprise System, and the Advanced Lights Out Manager software preinstalled as a software image on the boot drive.

Both servers feature four Gigabit Ethernet ports, one 10BASE-T Ethernet port for ALOM, two serial ports, two USB ports, one UltraSCSI LVD port, and up to 16 gigabytes of memory. The servers have the following differentiating features:

**TABLE 1** Server Differentiating Features

	Sun Fire V210	Sun Fire V240
Height	1 rack unit	2 rack units
CPUs	1 or 2	1 or 2

**TABLE 1** Server Differentiating Features (*Continued*)

	Sun Fire V210	Sun Fire V240
PCI expansion	1	3
Hard disk bays (SCSI)	2	4
Power supplies	1	2 (redundant)

For a detailed list of features, available configurations, and compatible options, go to:

<http://www.sun.com/servers/>

For detailed information about these servers, go to:

<http://sunsolve.sun.com/>

See: *Sun System Handbook*

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## Server Installation Process

This section contains a list of tasks that you must complete during the installation process. Each task includes a reference to the appropriate instructions. Each task must be completed in order.

1. Preparing the site according to the power, clearance, and environmental requirements.

If you are installing the server into a new Sun™ rack, you must fully prepare the site for the installation. If you are installing the server into an existing rack, you must conduct some site preparation to satisfy the additional power and environmental requirements. See [“Site Preparation” on page 4](#) for specific instructions.

2. Verifying that you have received all of the components.

The Sun Fire server ships in several packages. See [“Shipping Kit Contents” on page 7](#) for a list of the shipping kit.

3. Installing the server into the rack.

The installation of the rack slides and cable management arm (CMA) represent the majority of physical work during the installation. This release of the Sun Fire servers includes new rack slides, so the slide installation differs greatly from prior

releases. In addition, the *Sun Fire V210 and V240 Servers Installation Guide* replaces the rackmounting instructions that shipped with prior Sun Fire V210 and V240 servers.

4. Installing the optional components, if any, shipped with your server.

To install optional components, refer to the *Sun Fire V210 and V240 Servers Administration Guide* for instructions.

5. Setting up a console to communicate with the server.

You can communicate with the Sun Fire server using either a Tip connection from another server or an ASCII terminal connected to the SERIAL MGT port.

To set up the console, refer to the *Sun Fire V210 and V240 Servers Installation Guide* for instructions.

6. Powering on the server and configuring the preinstalled software.

The Solaris OS and the Java Enterprise System is preinstalled on the server. When you power the server on, you will automatically be taken through the Solaris OS configuration procedure. However, you must first go to the preinstalled software site for the latest updates and patches.

To power on the server and configure the preinstalled software, refer to the *Sun Fire V210 and V240 Servers Installation Guide* for instructions.

7. Setting the desired OpenBoot™ PROM configuration options.

The initial boot will test the entire system. You can change the level of testing by using the OpenBoot PROM commands and configuration variables. To change the boot test level and other boot variables, refer to the *OpenBoot PROM Enhancements for Diagnostics Operation*.

8. Loading additional software from the Solaris OS media kit (optional).

The Solaris OS media kit includes several CDs containing software to help you operate, configure, and administer your server. Refer to the documentation provided with the media kit for a complete listing of included software and detailed instructions.

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# Site Preparation

Before you install the Sun Fire server, you must prepare the site. This section includes information and links to information you will need to prepare the site.

## Physical Specifications

[TABLE 2](#) shows the physical specifications for the Sun Fire V210 and V240 servers.

**TABLE 2** Physical Specifications

	<b>Dimension</b>	<b>Value</b>
<b>Sun Fire V210 server</b>	Height	43.2 mm (1.7 in.)
	Width	425 mm (16.73 in.)
	Depth	635 mm (25 in.)
	Weight	12.3 kg unpackaged
<b>Sun Fire V240 server</b>	Height	87.66 mm (3.4 in.)
	Width	425 mm (16.73 in.)
	Depth	635 mm (25 in.)
	Weight	18.7 kg unpackaged

# Environmental Requirements

You can operate and store the system safely in the conditions detailed in [TABLE 3](#).

**TABLE 3** Operating and Storage Specifications

Specification	Operating	Storage
Ambient temperature	5° C to 40° C maximum ambient temperature is derated by 1° C (V240) and 2° C (V210) per 500 m altitude above 500 m	-40° C to 65° C
Relative humidity	10% to 90% RH noncondensing, 27° C max wet bulb	up to 93% RH noncondensing, 38° C max wet bulb
Altitude	-400 m up to 3000 m	-400 m up to 12000 m

## Recommended Operating Environment

Your environmental control system must provide intake air for the server that complies with the limits specified in [“Environmental Requirements” on page 5](#).

To avoid overheating, *do not* direct warmed air:

- Towards the front of the cabinet or rack
- Towards the server access panels

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

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The operating environmental limits in [TABLE 3](#) reflect the limits to which the systems have been tested 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 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.
  - Sun Fire V210 servers use internal fans that can achieve a total airflow of 30 cfm in normal operating conditions.
  - The Sun Fire V240 server uses internal fans that can achieve a total airflow of 60 cfm 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 cm<sup>2</sup> (13 in<sup>2</sup>) each
  - Sun Fire V240 server—a minimum open area of 170 cm<sup>2</sup> (26 in<sup>2</sup>) each
- Allow a minimum of 88.9 mm (3.5 inches) clearance at the front and rear of the server when mounted, unless an unobstructed airflow can be ensured.

## Acoustic Noise

TABLE 4 shows the amount of acoustic noise generated by the Sun Fire V210 and V240 servers.

**TABLE 4** Acoustic Noise

Server	Noise Generated
Sun Fire V210 server	Less than 7.3B sound power in ambient temperature of up to 24° C, measured on a standalone system to ISO 9296 requirements
Sun Fire V240 server	Less than 7.3B sound power in ambient temperature of up to 24° C, measured on a standalone system to ISO 9296 requirements

# Operating Power Limits and Ranges

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

**TABLE 5** 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 AC input	459 Watts	546 Watts

## Calculating Power Consumption

The estimated power consumed in a fully powered server depends on the configuration of the server. For more information on calculating power consumption, go to the following site:

<http://www.sun.com/servers/entry/v210/calc.html>

## 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.

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## Shipping Kit Contents

The server is supplied with the components described in the following list:

- Rackmount kit
- Cat5 RJ-45 cable
- Accessories kit
  - System key (V240 server only)
  - Antistatic wrist strap
  - RJ-45 to DB-9 adapter
  - RJ-45 to DB-25 adapter

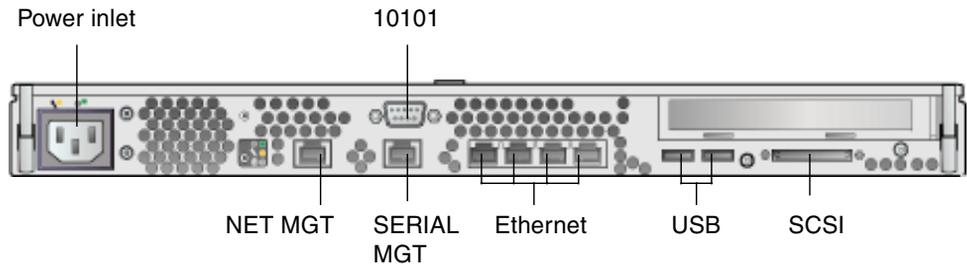
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**Note** – The contents of the shipping kit might vary, depending on any options that you have ordered. Make sure that all the basic parts, as described in the list, are present in the shipping kit. If any component is missing, contact your Sun sales representative.

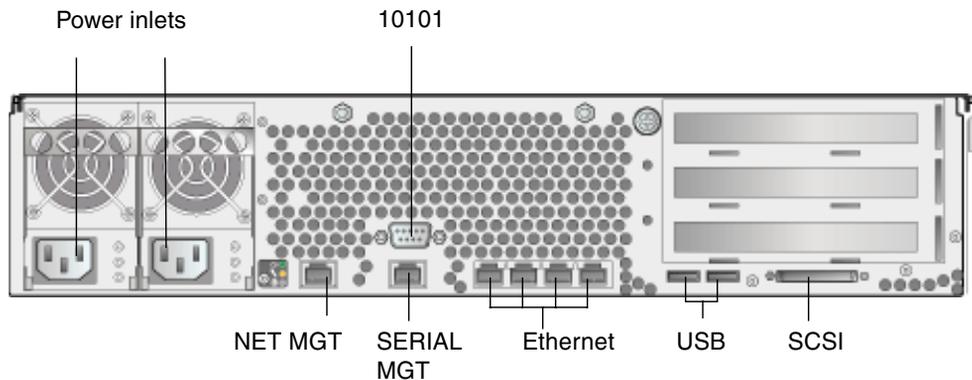
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## Power Inlets and I/O Ports

Before you attach and route the cables, become familiar with the location of the power inlets and I/O ports on the back of the servers. [FIGURE 1](#) shows the back panel for the V210 server, and [FIGURE 2](#) shows the back panel for the V240 server.



**FIGURE 1** Sun Fire V210 Server Back Panel



**FIGURE 2** 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. 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 6](#).

**TABLE 6** 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 *Sun Advanced Lights Out Management Software User's Guide*.

# 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 7](#).

**TABLE 7** 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. See the *Sun System Handbook* for more information about the crossovers.

## 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, the port must be in LVD mode. If a single-ended device is connected to the server, it automatically switches to single-ended mode.

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## Preinstalled Software

Your Sun Fire V210 and V240 server is shipped with the Solaris 10 Operating System (OS) and the Java Enterprise System software. You must configure the preinstalled software as part of the installation process. However, before you begin the configuration process, go to:

<http://www.sun.com/servers>

This site contains the latest information about the preinstalled software and links to the software updates and patches you must install.

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# OpenBoot PROM Diagnostics

With the upgrade to OpenBoot PROM 4.18.5 or a subsequently compatible version of the OpenBoot PROM, diagnostics are enabled by default. This ensures complete diagnostic test coverage on the initial boot and after error reset events. This change results in increased boot time.

To change the system defaults and diagnostic settings after the initial boot, refer to the *OpenBoot PROM Enhancements for Diagnostic Operation (817-6957)* document in the shipping kit. You can also view or print this document at:

<http://www.sun.com/documentation>

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# Sun Advanced Lights Out Manager

The Sun Fire V210 and V240 servers ship 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 *Sun Advanced Lights Outs Manager Software User's Guide*.

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**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.

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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.

For more information about ALOM, see the *Sun Advanced Lights Out Management Software User's Guide*.

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# Sun Fire V210 and V240 Documentation

The documentation set has changed for the RoHS-compliant release of the Sun Fire V210 and V240 servers. The following list contains summaries of the changes:

- Documentation CD has been discontinued.
- *Sun Fire V210 and V240 Servers Quick Start Guide* (816-4824-11) has been replaced by the *Sun Fire V210 and V240 Servers Getting Started Guide*.
- *Sun Fire V210 and V240 Servers Parts Replacement Manual* is now the *Sun Fire V210 and V240 Servers Service Manual*.

The documents listed as online are available at:

<http://www.sun.com/documentation/>

Application	Title	Part Number	Format	Location
Getting Started	<i>Sun Fire V210 and V240 Servers Getting Started Guide</i>	819-4206	PDF, HTML, and hard copy	Accessories kit
Installation	<i>Sun Fire V210 and V240 Servers Installation Guide</i>	819-4209	PDF and HTML	Online
Administration	<i>Sun Fire V210 and V240 Servers Administration Guide</i>	819-4208	PDF and HTML	Online
Service	<i>Sun Fire V210 and V240 Servers Service Guide</i>	819-4207	PDF and HTML	Online
Safety and Compliance	<i>Sun Fire V210 and V240 Safety and Compliance Manual</i>	817-4827	PDF and HTML	Online
Late-breaking news	<i>Sun Fire V210 and V240 Servers Product Notes</i>	819-4205	PDF and HTML	Online
OpenBoot PROM	<i>OpenBoot PROM Enhancements for Diagnostic Operation</i>	817-6957	Hard copy	Shipping kit
ALOM	<i>Sun Advanced Lights Out Manager Software User's Guide</i>		PDF and HTML	

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## Other Documentation, Support, and Training

Sun Function	URL	Description
Documentation	<a href="http://www.sun.com/documentation/">http://www.sun.com/documentation/</a>	Download PDF and HTML documents and order printed documents
Support and Training	<a href="http://www.sun.com/supporttraining/">http://www.sun.com/supporttraining/</a>	Obtain technical support, download patches, and learn about Sun courses

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