



# Sun Fire™ V20z and Sun Fire V40z Servers Installation Guide

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# Hardware Installation and Startup

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Before performing any procedures, become familiar with the physical orientation and features of your Sun Fire™ V20z or Sun Fire V40z server, including the front and back panels. Refer to the *Sun Fire V20z and Sun Fire V40z Servers User Guide* for detailed information about the server.

---

## Installation Overview

After unpacking your server, perform the following tasks, which are described in the documentation as indicated:

1. Add any PCI expansion cards or hardware options that you want to install. Refer to the *Sun Fire V20z and Sun Fire V40z Servers User Guide* or the documentation shipped with the hardware option for instructions on removing and replacing the system cover and installing the option.
2. If desired, install the server in a rack using orderable slide-rails. See [“Installing the Server Into a Rack” on page 2](#).
3. Connect all cables and power cords. Refer to [“Cabling” on page 7](#) of this guide.
4. Connect your peripherals. Refer to [FIGURE 1-8](#) of this guide for an illustration of the server’s back panel connector ports.
5. Power on and boot the server as described in [“Powering On and Booting the Server” on page 11](#) of this guide.
6. Perform initial software setup as described in [Chapter 2](#) of this guide.
7. Configure your server to customize it for your use. Refer to the *Sun Fire V20z and Sun Fire V40z Servers—Server Management Guide* for details.

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# Safety Guidelines

You can safely connect the Sun Fire V20z server to an IT Power System.



The use of the black-on-yellow “exclamation-point-in-a-triangle” symbol on the product indicates a reference to the following important safety information, concerning National Deviations for Finland, Norway and Sweden:

- **English:** The earthed-style attachment plug on the power-supply cord requires the socket outlet to be an earthing type.
- **Finnish:** Laite on liitettävä suojamaadoituskoskettimilla varustettuun pistorasiaan.
- **Norwegian:** Apparatet må tilkoples jordet stikkontakt.
- **Swedish:** Apparatens skall anslutas till jordat uttag.

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## Installing the Server Into a Rack



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**Caution** – The Sun Fire V40z server weighs 75 pounds (34 kilograms). Use caution when lifting or moving the server to avoid personal injury. It is recommended that you use two people for moving and mounting the server. Always load a rack from the bottom up and load the heaviest item in the rack first.

---

Use the following procedure to install the server into a rack using slide-rails.

### *Tools Required*

- #3 cross-point screwdriver for mounting screws

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**Note** – Before you install the server in a rack, ensure that all PCI expansion cards, additional memory and any other additional options are installed. For ease of rack mounting, do not attach cables to the server before installing into the rack.

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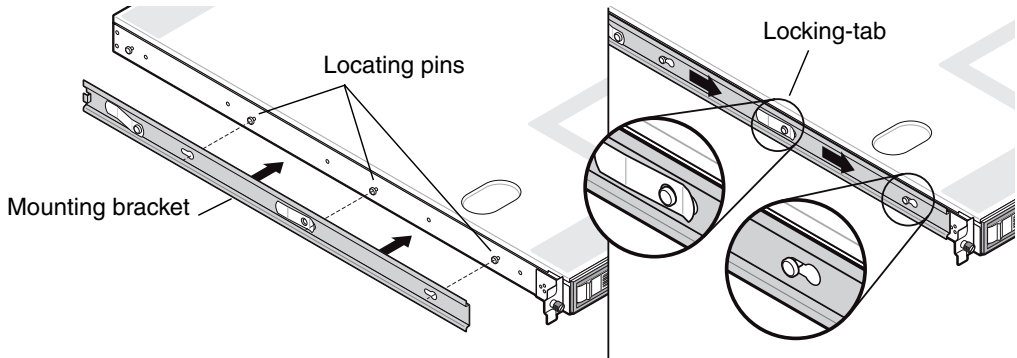
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**Caution** – Before you power on a Sun Fire V40z server for the *first time*, you must remove the packaging inserts from the server’s PCI card slots and CPU card slot to ensure proper air flow and cooling. You can discard these packaging inserts, which serve as protection during shipping. See [“Powering On and Booting the Server” on page 11](#) for instructions on removing the inserts.

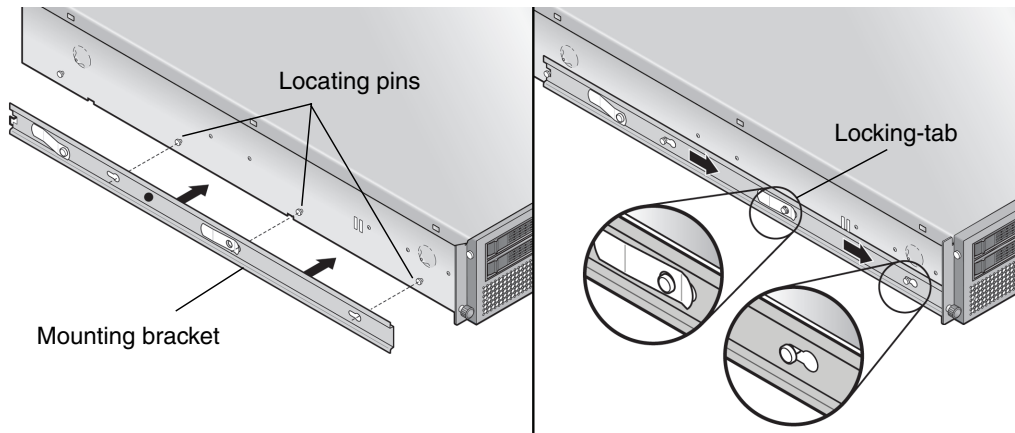
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1. Install one mounting bracket to each side of the server as shown in [FIGURE 1-1](#) or [FIGURE 1-2](#).

Position the three holes in the mounting bracket over the front three locating pins on the server's side and push forward on the mounting bracket until the middle locking-tab clicks over the middle pin.



**FIGURE 1-1** Installing the Slide-Rail Mounting Brackets Onto the Sun Fire V20z Server



**FIGURE 1-2** Installing the Slide-Rail Mounting Brackets Onto the Sun Fire V40z Server

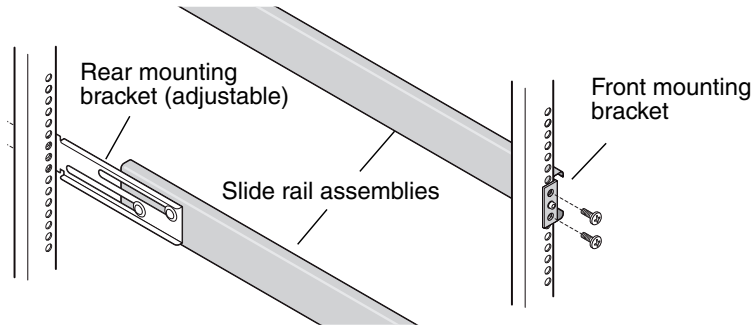
2. Install one slide-rail assembly to each side of the rack as shown in [FIGURE 1-3](#), securing them with the screws provided.

The end of the rail with the adjustable bracket must be positioned toward the back of the rack as shown.

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**Note** – Leave the middle screw holes on each front mounting bracket open for the thumb screws on the server.

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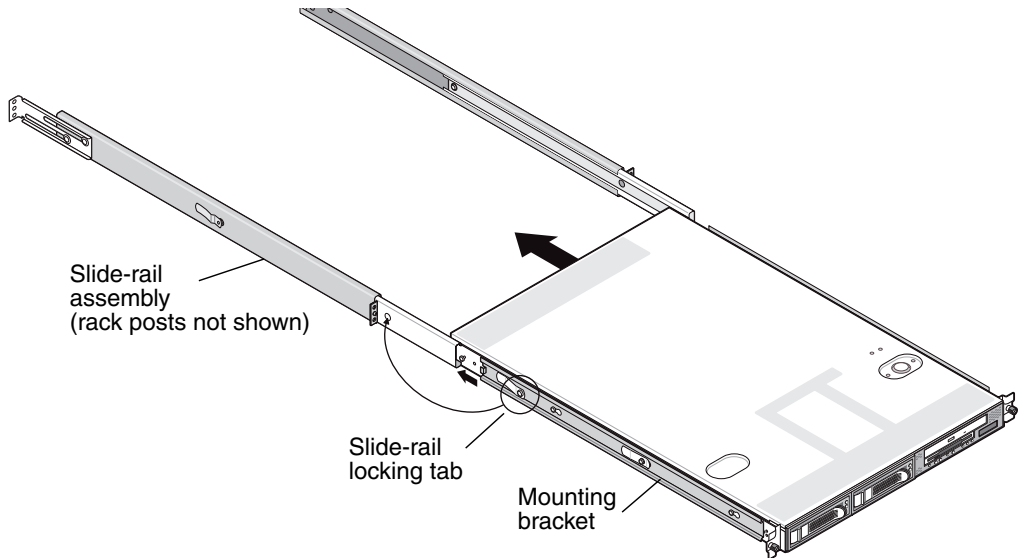


**FIGURE 1-3** Installing the Slide-Rails Into the Rack

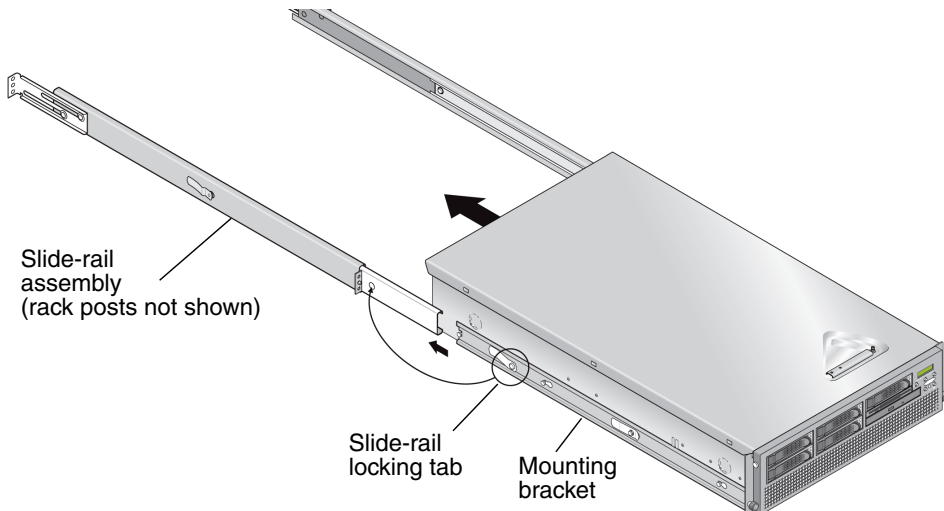


3. Slide the server, with mounting brackets installed, into the rack so that the mounting bracket bases fit inside the slide rail assemblies (see [FIGURE 1-4](#) or [FIGURE 1-5](#)).

As you slide the server into the rack, press down on the outer slide-rail locking-tab to allow the mounting bracket to pass through.

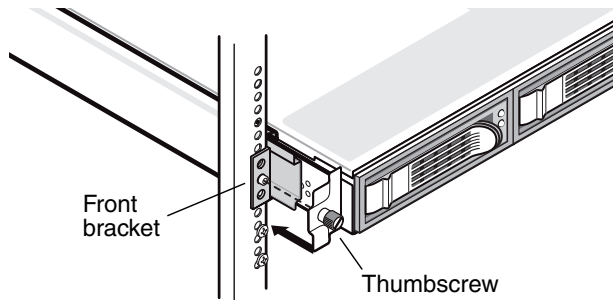


**FIGURE 1-4** Installing the Sun Fire V20z Server Into the Rack

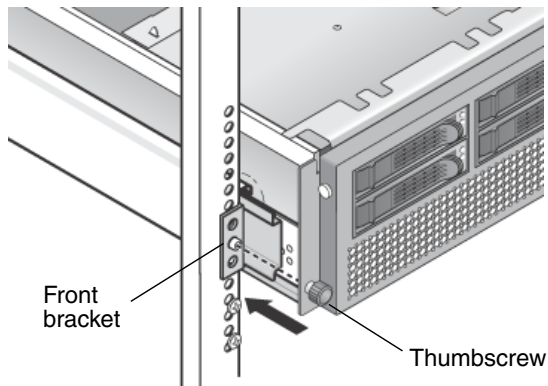


**FIGURE 1-5** Installing the Sun Fire V40z Server Into the Rack

4. With the server pushed into place in the rack, tighten the captive thumbscrews on the server front by screwing them into the middle hole on the slide-rail assembly front bracket (see [FIGURE 1-6](#) or [FIGURE 1-7](#)).



**FIGURE 1-6** Securing the Sun Fire V20z Server Into the Rack



**FIGURE 1-7** Securing the Sun Fire V40z Server Into the Rack

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# Cabling

Connect cables to the rear of the server as follows. See [FIGURE 1-8](#) or [FIGURE 1-9](#) for the locations of the connector ports on your server.

1. **Connect the keyboard cable to the keyboard connector.**
2. **Connect the mouse cable to the mouse connector.**
3. **Connect a video monitor cable to the video connector.**

VGA multisynch monitors are supported with these servers.

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**Note** – Keyboard, mouse and video are optional with an operating system that supports headless operation.

---

4. **Connect Ethernet cables to the service processor (SP) connectors and the platform gigabit connectors.**

See [“Interconnecting Servers” on page 10](#) for information about interconnecting servers and connecting them to a LAN.

5. **Connect the AC power cord(s) to the AC power connector(s).**



---

**Caution** – In a Sun Fire V40z server, AC power is supplied to the SP and basic hardware whenever there is an AC power cord plugged into either of the server’s two power supplies. The SP boots and the message `Main Power Off` appears on the LCD display on the front panel when the SP is finished booting.

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## Notes on the Sun Fire V20z Server

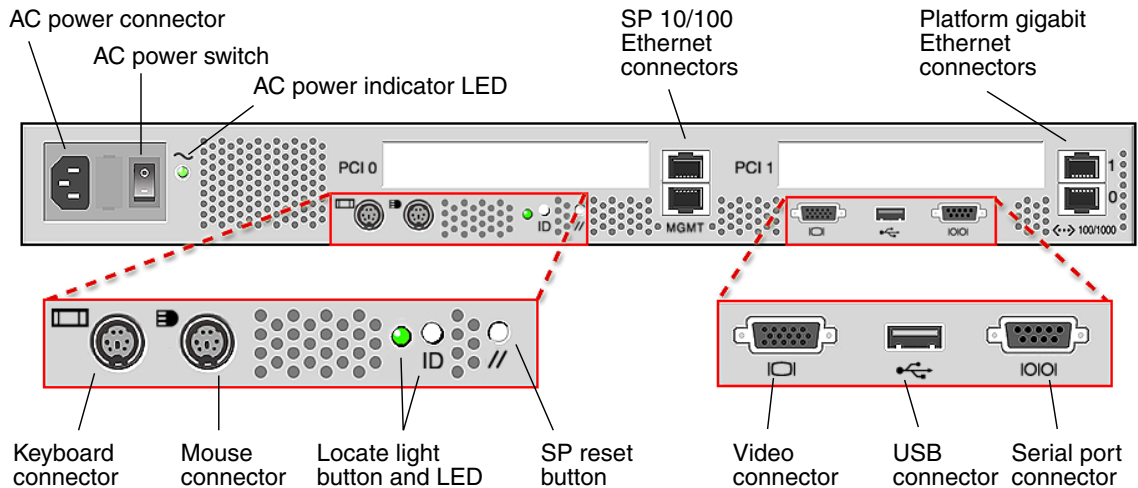
### Ethernet Port Labelling

It is important to note the labelling of the Ethernet ports on the back panel of the Sun Fire V20z server. As shown on the far right side of the server illustrated in [FIGURE 1-8](#), interfaces `eth1` and `eth0` are labelled as “1” on the upper port and “0” on the bottom port, respectively.

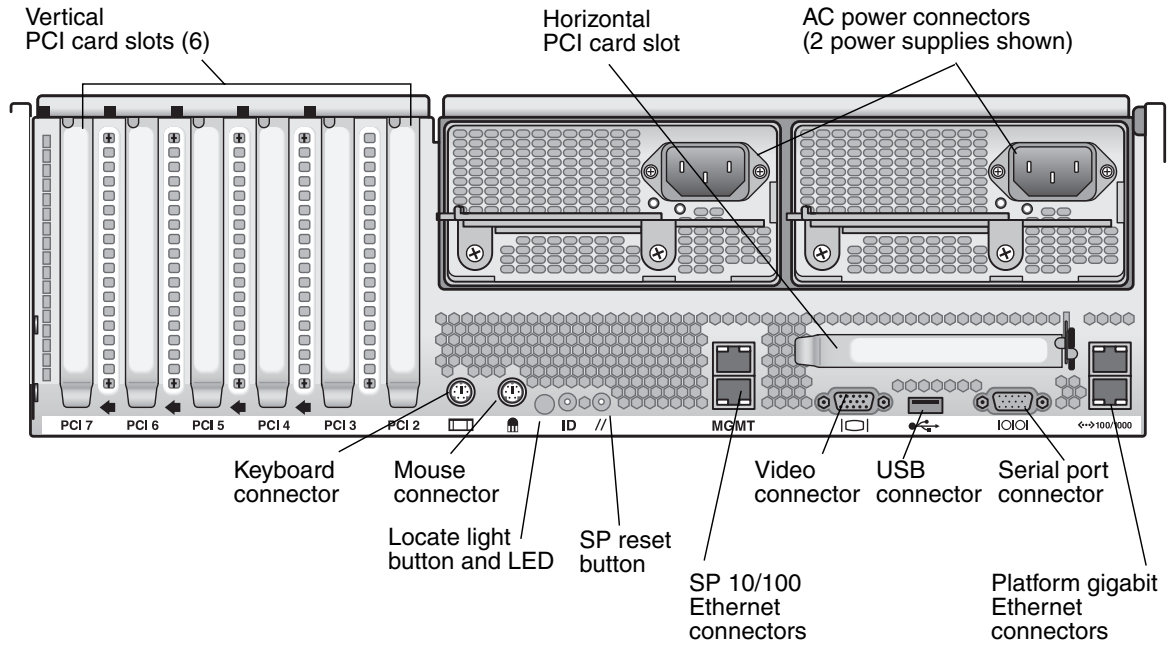
## PCI Slot Labelling

The PCI slots are labelled on the server back panel as PCI 0 (next to the power supply) and PCI 1 (between the SP and platform ethernet ports). See [FIGURE 1-8](#).

- The slot on the motherboard that corresponds to PCI 0 is identified by the silkscreen label “Slot 2 133MHz”.
- The slot on the motherboard that corresponds to PCI 1 is identified by the silkscreen label “Slot 1 66MHz”.



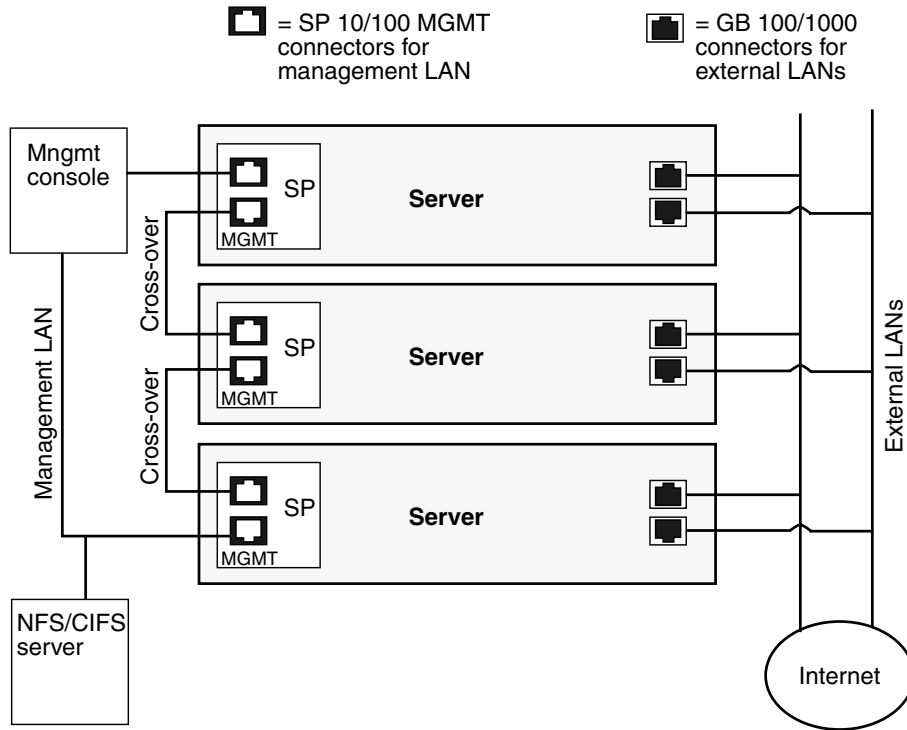
**FIGURE 1-8** Sun Fire V20z Server Back Panel



**FIGURE 1-9** Sun Fire V40z Server Back Panel

# Interconnecting Servers

You can interconnect multiple servers in a daisy-chain configuration by using the SP management (MGMT) connectors to form a management LAN as shown in [FIGURE 1-10](#). This figure also shows how the servers are connected to external LANs using the platform gigabit connectors.



**FIGURE 1-10** Daisy Chain Architecture

To interconnect the servers, you must use an RJ-45 cross-over cable. Cables can be connected to either the top or bottom SP port. To configure servers in a daisy chain, connect the first and last server in the chain to different switches.

---

# Powering On and Booting the Server

Follow these steps to power on and boot the server:



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**Caution** – Do not operate this server without all fans, component heatsinks, air baffles and the cover installed. Severe damage to server components will occur if operated without adequate cooling mechanisms.

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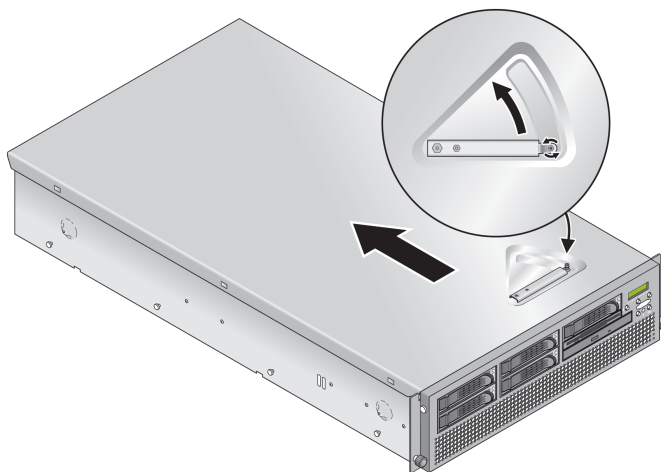


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**Caution** – Before you power on a Sun Fire V40z server for the *first time*, you must remove the packaging inserts from the server's PCI card slots and CPU card slot to ensure proper air flow and cooling. You can discard these packaging inserts, which serve as protection during shipping.

---

1. Perform this step to remove packaging inserts if you are powering on a *Sun Fire V40z* server the *first time*. Otherwise, skip to [Step 2](#).
  - a. Loosen the captive screw on the cover latch, then rotate the latch toward the system rear to push back the cover (see [FIGURE 1-11](#)).

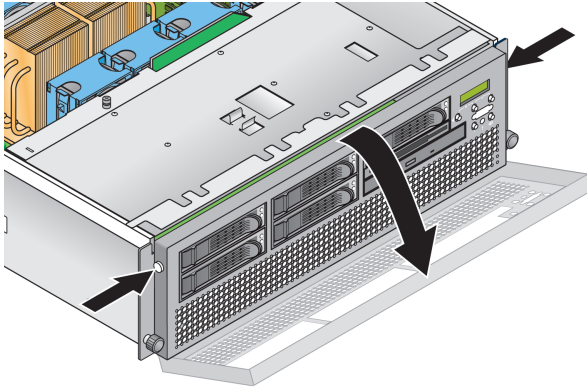


**FIGURE 1-11** Removing the Cover

- b. Lift the cover up and remove it.
- c. Remove the plastic-foam packaging inserts from the PCI slot area near the back panel of the system.

Do not remove the air baffle PCI slot inserts.

- d. Remove the front bezel from the server by pressing in on the rubberized buttons on each side of the bezel, then swinging the bezel top downward (see [FIGURE 1-12](#)).



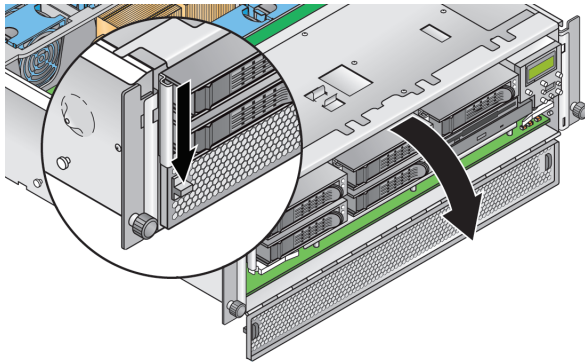
**FIGURE 1-12** Removing the Front Bezel

- e. Open the CPU card door, which is located under the hard drive bays, to access the CPU card. Press down on the two buttons on the door and swing it downward so that it is open 180 degrees from the closed position (see [FIGURE 1-13](#)).

---

**Note** – This procedure can be done with the server mounted in a rack. If it is in a rack, pull the server forward from the rack about 3 inches (76 mm) to provide clearance before opening the CPU card door.

---



**FIGURE 1-13** Opening the CPU Card Door

- f. Remove the packaging insert from the CPU card slot.



- g. Close the CPU card door and replace the front bezel onto the server.
  - h. Replace the cover onto the server and tighten the captive screw that secures the cover latch.
2. Ensure that a grounded AC power cord is plugged into all AC power connectors on the rear of the server and into AC power outlet(s). See [FIGURE 1-8](#) or [FIGURE 1-9](#) for the connector location.



---

**Caution** – In a Sun Fire V40z server, AC power is supplied to the SP and basic hardware whenever there is an AC power cord plugged into either of the server’s two power supplies. The SP boots and the message `Main Power Off` appears on the LCD display on the front panel when the SP is finished booting.

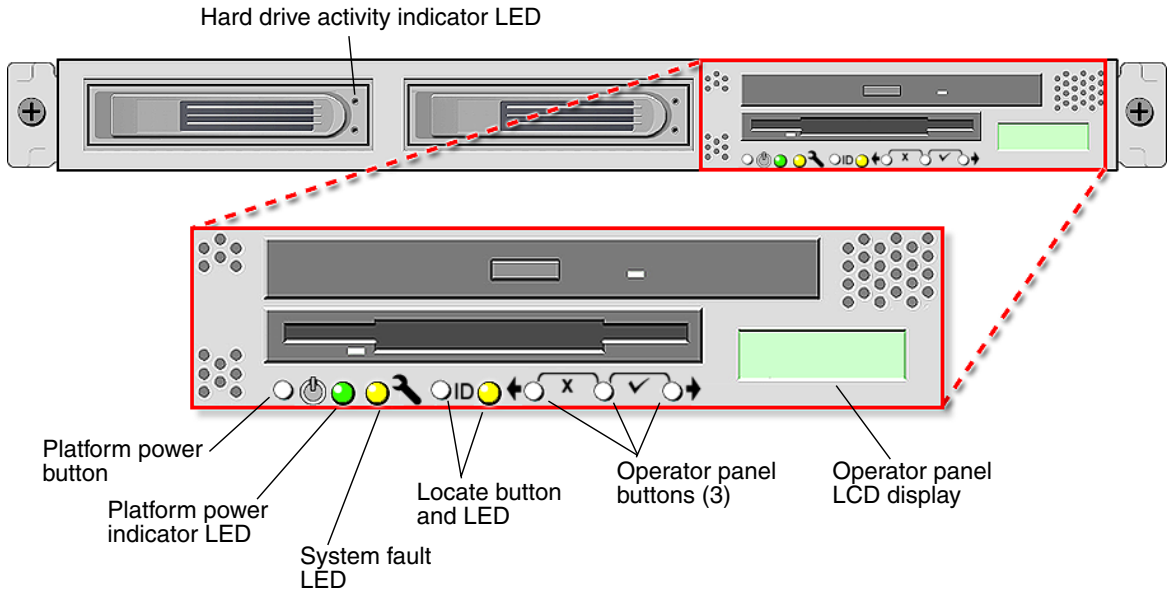
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3. Power on the server using one of the following two methods, depending on which server type you have:
  - If you have a Sun Fire V20z server, use these steps:
    - a. Turn on the AC power switch on the server back panel (see [FIGURE 1-8](#)).  
This switch provides AC power to the SP and basic hardware.
    - b. Push and release the platform power button on the server front panel (see [FIGURE 1-14](#)).  
This button provides power to the BIOS, operating system and drivers.
  - If you have a Sun Fire V40z server, push and release the platform power button on the server front panel (see [FIGURE 1-15](#)).  
This button provides power to the BIOS, operating system and drivers. There is no separate AC power switch on the Sun Fire V40z server; basic AC power was already applied when you plugged in a power cord to a power supply.

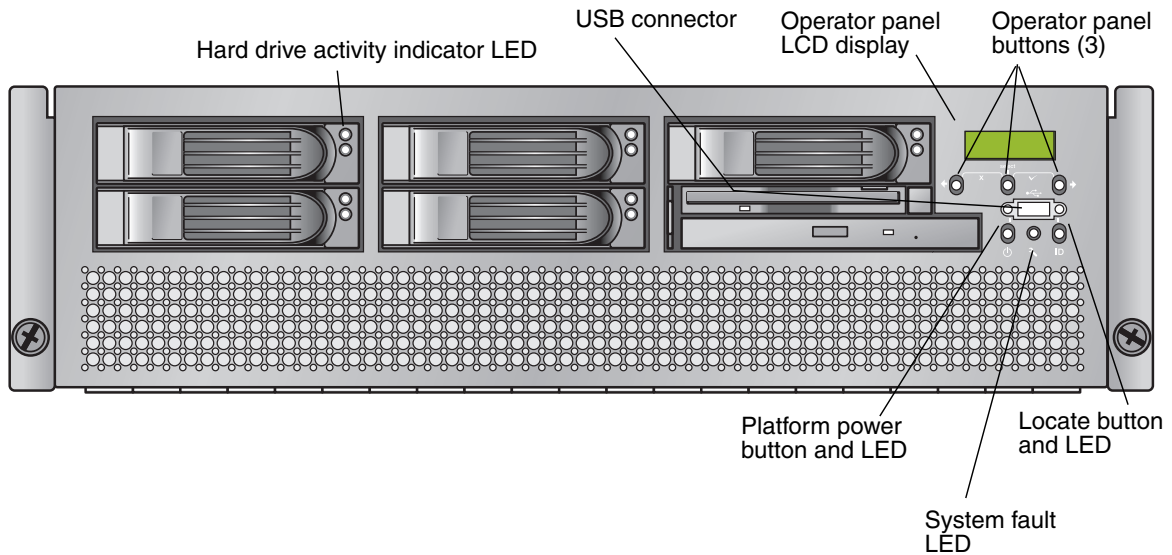
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**Note** – The first time you boot the server, the booting stops and displays a message on the monitor, `Operating system not found`, and the LCD on the front panel displays the message `OS Booting`. This is normal until after you install an operating system.

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**FIGURE 1-14** Sun Fire V20z Server Front Panel



**FIGURE 1-15** Sun Fire V40z Server Front Panel

**4. Continue with initial software setup tasks, as described in [Chapter 2](#) of this guide.**

## Initial Software Configuration

---

To set up your Sun Fire V20z or Sun Fire V40z server the first time, you should perform some initial configuration tasks. This chapter explains these initial steps:

- [“Configuring the Service Processor” on page 16](#)
  - [“Defining SP Network Settings” on page 16](#)
  - [“Defining a Name for the Server” on page 21 \(optional\)](#)
  - [“Creating the Initial Manager Account” on page 20](#)
- [“Installing and Mounting the NSV Software” on page 24](#)
- [“Setting up the Platform Operating System and Drivers” on page 26](#)

---

**Note** – An operating system can be installed on the server without configuring the service processor (SP) or the network share volume (NSV). However, if you choose to skip the SP and NSV setup, you will not be able to use the remote-management capabilities of the system or the diagnostics.

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# Configuring the Service Processor

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**Caution** – The service processor (SP) must be secured with a user name and password when the server is first deployed. Failure to secure the SP can expose the server to security and availability risks through the SP network interface.

---

The Sun Fire V20z and Sun Fire V40z servers include a dedicated SP for complete server independence and maximum availability of server management. The SP is an embedded PowerPC that provides the following functions:

- Environmental monitoring of the platform (such as temperatures, voltages, fan speeds and panel switches)
- Alert messages when problems occur
- Remote control of server operations (boot, shutdown and reboot of the server's operating system, turning the server's power on and off, stopping the server's boot process in BIOS, and upgrading BIOS)

After supplying AC power to the server, you are ready to begin configuring the SP by setting an IP address and associated network settings for the SP. You can configure the SP network settings by using DHCP or by using a static IP address.

## Defining SP Network Settings

This section contains two alternate methods you can use to define SP network settings:

- [“Assigning SP Network Settings Using DHCP” on page 16](#)
- [“Assigning Static SP Network Settings” on page 18](#)

## Assigning SP Network Settings Using DHCP

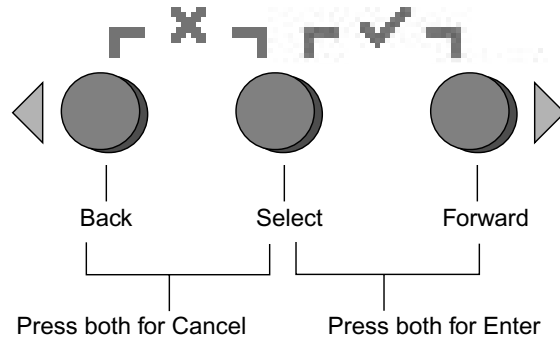
The following procedure describes how to set the SP network settings using DHCP from the Operator Panel. If your network does not use DHCP, or you want to assign a static IP address to the SP, follow the instructions in [“Assigning Static SP Network Settings” on page 18](#).

1. **Press any operator panel button on the server front panel (see [FIGURE 2-1](#)).**

The LCD panel displays the first menu option:

Menu :

Server Menu



**FIGURE 2-1** Operator Panel Buttons

**2. Press the Forward button until you reach the SP menu:**

```
Menu:
SP menu
```

**3. Press the Select button to display the SP menu options.**

```
SP Menu:
Set SP IP info?
```

**4. Press the Select button.**

The following prompt appears with the default response:

```
SP use DHCP?
No
```

**5. Press the Forward button to change to Yes, then press the Select button.**

**6. Press the Select button at the confirmation prompt.**

```
SP use DHCP:
Yes?
```

The server attempts to contact a DHCP server for an IP address. Once a DHCP server is contacted, the LCD panel displays the default SP settings. The SP address is configured and the server is ready for use.

**7. Continue with [“Creating the Initial Manager Account” on page 20](#) for instructions on creating the initial manager account.**

---

**Note** – A prompt appears that asks if you want to perform autoconfiguration. As an alternative to configuring an SP manually, you can run autoconfiguration, which replicates the configuration of one SP to another. Refer to the *Sun Fire V20z and Sun Fire V40z Servers—Server Management Guide* for instructions on autoconfiguration.

---

## Assigning Static SP Network Settings

Follow these steps to set the SP network settings using a static IP address. You must specify a subnet mask and default gateway. This example uses the following sample settings:

IP Address: 10.10.30.5  
Subnet Mask: 255.255.255.0  
Default Gateway: 10.10.30.254

1. **Press any operator panel button on the server front panel (see [FIGURE 2-1](#)).**

The LCD panel displays the first menu option:

```
Menu:  
Server Menu
```

2. **Press the Forward operator panel button until you reach the SP menu:**

```
Menu:  
SP menu
```

3. **Press the Select operator panel button to display the SP menu options.**

```
SP Menu:  
Set SP IP info?
```

4. **Press the Select operator panel button. The following prompt displays with the default response:**

```
SP use DHCP?  
No
```

5. **Press the Select operator panel button.**

The LCD displays as follows:

```
SP IP Address:  
0.0.0.0
```

6. **With the cursor in the first field, increase or decrease the value using the Back and Forward operator panel buttons.**

This field can hold a value between 0 and 255.

```
SP IP Address:  
10.0.0.0
```

7. After reaching your desired value, press the Select operator panel button to advance the cursor to the next field.

```
SP IP Address:  
10.0.0.0
```

---

**Note** – The Back and Forward operator panel buttons automatically scroll, repeating the action as long as the button is held down.

---

8. Repeat [Step 6](#) and [Step 7](#) for each field until the desired IP address is displayed, then use the Enter button combination to save the IP Address.

The process continues to the next network setting, the Subnet Mask. The LCD displays as follows:

```
SP netmask:  
255.255.255.0
```

9. Edit the subnet mask setting in the same manner as you did for the IP address. When finished, use the Enter button combination to save the subnet mask.

The process continues to the next network setting, the default gateway. The LCD displays as follows:

```
SP IP Gateway  
10.10.30.1
```

10. Edit the default gateway setting in the same manner as you did for the IP address and the subnet mask. When finished, use the Enter button combination to save the default gateway.

The LCD displays the following confirmation prompt:

```
Use new IP data:  
Yes?
```

11. Press the Select operator panel button to use the new data, or use the Cancel button combination to disregard.

The SP address is now configured and the server is ready for use.

---

**Note** – A prompt appears that asks if you want to perform autoconfiguration. As an alternative to configuring an SP manually, you can run autoconfiguration, which replicates the configuration of one SP to another. Refer to the *Sun Fire V20z and Sun Fire V40z Servers—Server Management Guide* for instructions on autoconfiguration.

---

12. Continue with [“Creating the Initial Manager Account”](#) on page 20.

---

# Creating the Initial Manager Account

After you install the server and configure the SP, you must create the initial manager account to access the server. You can then perform initial configuration of the server and create additional user accounts.

A setup account is included with each server. This setup account has no password. When you log in to the SP the first time using the setup account, you are prompted to define the initial manager account with a password and an optional public key.

Log in to the setup account and create the initial manager account by following this procedure:

1. **Using an SSHv1 or SSHv2 client, connect to the IP address of the SP.**
2. **Authenticate as the user *setup* with no password required:**  

```
# ssh sp_ip_address -l setup
```
3. **Follow the on-screen prompts to create the initial manager account.**

After you create the initial manager account, the setup account is deleted and you are logged out of the server. You can then log in using the new manager account, from which you can create other user accounts.

---

**Note** – If you are prompted for a password, this indicates that the SP has already been secured with an account. If you do not know the management user name and password, you can reset the SP from the operator panel by navigating to the SP menu and selecting the `Use defaults` option. Note that all current settings for users and networks will be lost and the SP will reboot.

---

After you create the initial manager account, continue with [“Defining a Name for the Server” on page 21](#) or [“Server Management and Platform Software” on page 22](#).



---

# Defining a Name for the Server

If desired, you can define a name for the server that will be displayed in the operator-panel LCD when the SP is idle. After you define a name, the name and the IP address of the SP alternate every few seconds in the LCD.

---

**Note** – This is a descriptive name for the server, for your convenience only. It is not a DNS host name for the server on the network.

---

1. **When the server is in background state, press any operator-panel button (see [FIGURE 2-1](#)).**

After you press a button, the LCD panel displays the first menu option:

```
Menu:  
Server Menu
```

2. **Press the Forward button until you reach the Panel menu:**

```
Menu:  
Panel menu
```

3. **Press the Select button to display the Panel menu options.**

4. **Press the Forward button until the Name for LCD menu option displays:**

```
Panel Menu:  
Name for LCD?
```

5. **Press the Select button to enable data entry.**

6. **Enter an alphanumeric string to display on the first line of the LCD.**

You can enter letters A through Z, digits 0 through 9, hyphen and space.

- a. **Use the Forward and Reverse buttons to locate the character you wish to enter in each field.**
  - b. **Press the Select button when you locate the character you want.**
  - c. **Repeat this process until the entire name is complete.**
7. **Use the Enter button combination (Forward plus Select) to save your entry.**

---

# Server Management and Platform Software

This section includes descriptions of the network share volume (NSV) structure that is included with your server on CD, and a procedure for extracting and installing the software (see [“Installing and Mounting the NSV Software” on page 24](#)).

Although the SP functions normally without access to an external file system, a file system is required to enable several features, including event log files, software updates, diagnostics and the troubleshooting dump utility. You can configure the NSV to be shared among multiple SPs. Admin- and manager-level users can configure the external file system; however, monitor users can only view the current configuration with read-only access.

The following software components are included with your server:

- Platform BIOS
- SP Base Software
- SP Value-Add Software
- The update file for downloading Java™ Runtime Environment (JRE) packages
- Network Share Volume, which includes diagnostics
- Platform Software
- Motherboard platform drivers

All of these software packages are packaged with the NSV and are installed on the file server when the external file system is installed and configured, as described in [“Installing and Mounting the NSV Software” on page 24](#).

# Network Share Volume Structure

The following compressed packages are included with your server on the Sun Fire V20z and Sun Fire V40z Servers Network Share Volume CD:

**TABLE 2-1** Network Share Volume Compressed Packages

File Name	File Contents
nsv_V2.1.0.x.zip	SP and platform diagnostics with some support for the SP software
nsv-redhat_V2.1.0.x.zip	Drivers for Red Hat Linux OS
nsv-solaris9_V2.1.0.x.zip	Drivers for Solaris 9 OS
nsv-suse_V2.1.0.x.zip	Drivers for SUSE Linux OS

When extracted, the compressed packages in [TABLE 2-1](#) populate the following files on the NSV:

```
/mnt/nsv/  
diags  
logs  
scripts  
snmp  
spupdate  
sw_images (this folder appears after you extract one of the OS-specific Zip files)
```

**TABLE 2-2** Extracted Files on the Network Share Volume

File Name	Description
diags	Offline location of the server diagnostics.
logs	Offline location of the log files for the SP.
scripts	Sample scripts that can be used for scripting commands.
snmp	SNMP MIBS. Refer to the <i>Sun Fire V20z and Sun Fire V40z Servers, Server Management Guide</i> for details.
spupdate	The server for updating the SP. Refer to the <i>Sun Fire V20z and Sun Fire V40z Servers, Server Management Guide</i> for details.
sw_images	Contains a directory hierarchy of platform and SP components, including subdirectories for each version.

# Installing and Mounting the NSV Software

## *Equipment Needed For This Procedure*

- Sun Fire V20z and Sun Fire V40z Servers Network Share Volume CD, which contains the NSV packages
- An NFS server, to which you will copy the NSV packages from CD

---

**Note** – The NFS server can be any server that supports NFS and that is connected to the same network as the server's SP ports. The following procedure assumes that your NFS server is running Linux or UNIX. If you are using a different OS, consult the documentation for that OS for the exact commands to use.

---

To install and configure the NSV, follow these steps:

1. **Connect the SP of the server to the same network as your NFS server.**  
See "[Cabling](#)" on page 7 for the location of the SP connectors and guidelines for connecting servers to management LANs.
2. **Insert the Sun Fire V20z and Sun Fire V40z Servers Network Share Volume CD into the NFS server and mount the CD.**
3. **Copy the folder that contains the NSV packages from the CD to the NFS server by typing the following command:**  

```
# cp -r /mnt/cdrom/NSV_file_directory /mnt/nsv/
```
4. **Change to the directory on the server that now contains the compressed NSV packages and extract them by typing the following commands:**  

```
# cd /mnt/nsv/  
# unzip -a *.zip
```

---

**Note** – When unzipping a compressed file on a Linux platform, use the **-a** switch as shown to force text files to convert to the target operating system's appropriate end-of-line termination.

---

The extracted packages populate these files:

```
/mnt/nsv/  
diags  
logs  
snmp  
spupdate  
sw_images
```

5. If you will be running the server diagnostics, run the following commands to create the appropriate permissions within the `diags` directories:

```
# chmod 777 /mnt/nsv/diags/NSV_version_number/scripts  
# chmod -R 755 /mnt/nsv/diags/NSV_version_number/mpcc
```

6. Log in to the Sun Fire V20z or Sun Fire V40z server SP via SSH by typing the following command at the NFS server's command prompt:

```
# ssh -l admin_or_higher_login SSH_hostname
```

---

**Note** – Verify that NFS is enabled on the network before going to the next step. On systems running Linux, this must be done manually. Refer to the documentation for the version of Linux you are running for the instructions on enabling NFS.

---

7. Mount the NSV onto the Sun Fire V20z or Sun Fire V40z server SP by typing the following command:

```
# sp add mount -r NFS_server_hostname:/directory_with_NSV_files -l /mnt
```

---

**Note** – If you did not set up the SP on a DHCP network, you must use the `NFS_server_IP_address`, rather than the `NFS_server_hostname`.

---

8. Continue with [“Setting up the Platform Operating System and Drivers” on page 26](#).

---

# Setting up the Platform Operating System and Drivers

---

**Note** – An operating system can be installed on the server without configuring the SP or the NSV. However, if you choose to skip the SP and NSV setup, you will not be able to use the remote-management capabilities of the system, or the diagnostics.

---

After setting up the SP and NSV software, you can install the platform operating system (OS) and drivers.

- For details about installing a supported Linux OS and the required drivers, refer to the *Sun Fire V20z and Sun Fire V40z Servers Linux Operating System Installation Guide*.
- For Solaris™ OS installation, refer to the documentation that is provided with the Solaris OS software, or at the URL:  
`http://docs.sun.com/db/prod/solaris`
- For additional Solaris OS considerations specific to this server, also refer to the *Sun Fire V20z and Sun Fire V40z Servers Release Notes* on the Documentation and Support Files CD, or one of the following URLs:

`http://www.sun.com/products-n-solutions  
/hardware/docs/Servers/Workgroup_Servers/Sun_Fire_V20z/index.html`

or

<http://www.sun.com/servers/entry/v20z/>. Click on the Documentation link on the right side. On the next page, click on 'Sun Fire V20z and V40z Servers' in the list.

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