Sun Fire™ V20z Server Installation Guide

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CHAPTER 1

Hardware Installation and Startup

Before performing any procedures, become familiar with the physical orientation and features of your Sun Fire™ V20z server, including the front and back panels. Refer to the *Sun Fire V20z Server 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 Server User Guide* or the documentation shipped with the hardware option for instructions on removing 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 5 of this guide.
4. Connect your peripherals. Refer to FIGURE 1-5 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 7 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 Server Management Guide* for details.

Installing the Server Into a Rack

Caution – 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

Note – Ensure that all PCI expansion cards, additional memory, and any other additional options are installed before installing the server into the rack. For ease of installation, do not attach cables to the server before installing to the rack.

1. **Install one mounting bracket to each side of the server as shown in** FIGURE 1-1**.**

   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.

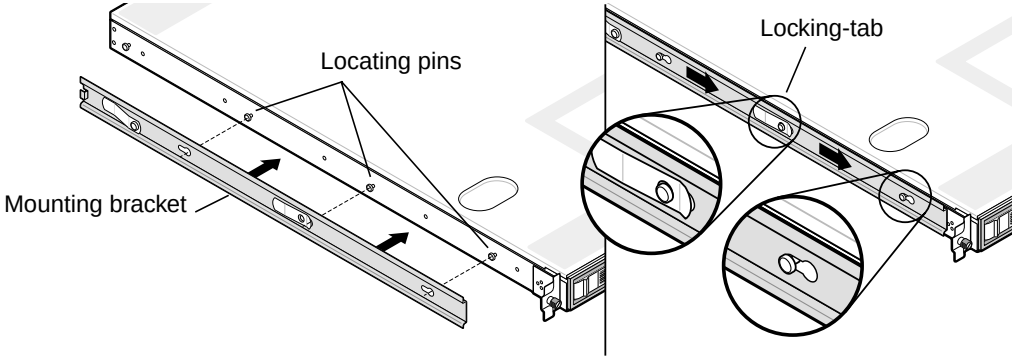

FIGURE 1-1 Installing the Slide-Rail Bases Onto the Server

2. **Install one slide-rail assembly to each side of the rack as shown in** FIGURE 1-2**, 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.

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

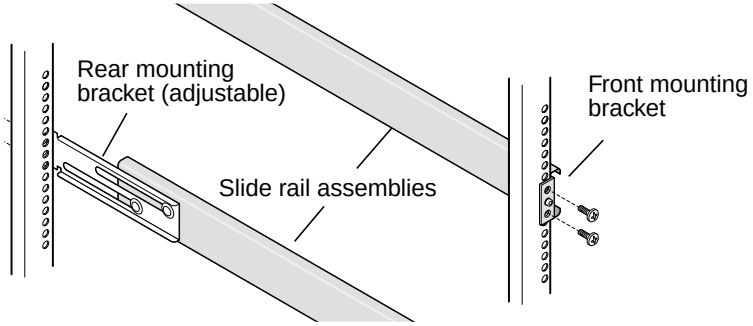

FIGURE 1-2 Installing the Slide-Rails Into the Rack

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 1-3**).**

   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.

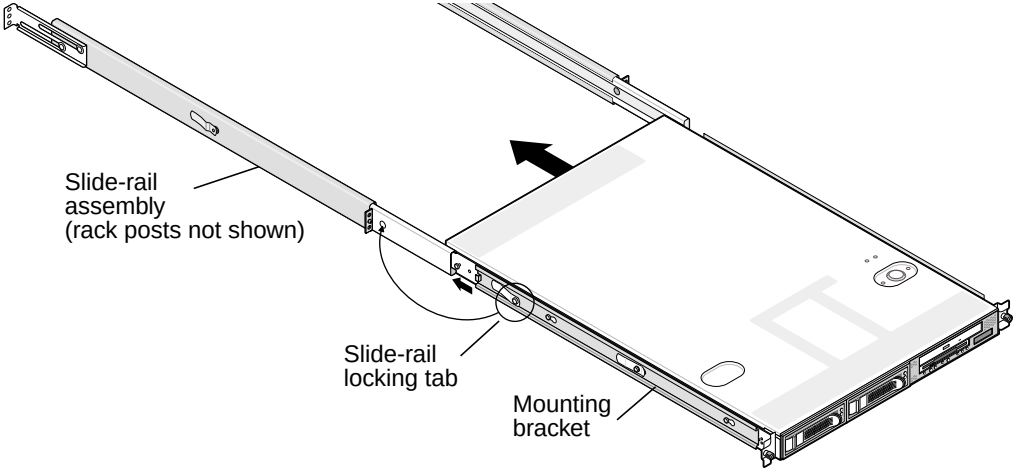

FIGURE 1-3 Installing the Slide-Rails Into the Rack

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 1-4**).**

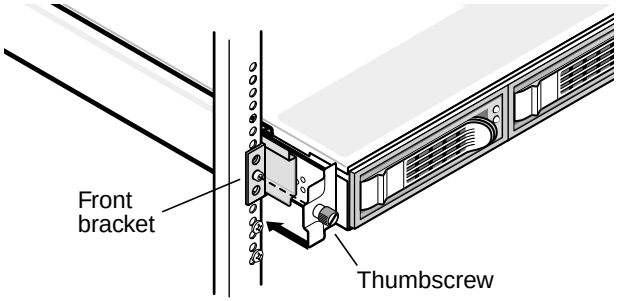

FIGURE 1-4 Installing the Server Into the Slide-Rails and Rack

Cabling

Connect cables to the rear of the server as follows. See FIGURE 1-5 for the locations of the connector ports.

1. **Connect the AC power cord to the AC power connector.**
2. **Connect the keyboard cable to the keyboard connector.**
3. **Connect the mouse cable to the mouse connector.**
4. **Connect a video monitor cable to the video connector.**

   VGA multisynch monitors are supported with this server.

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

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

   See “Interconnecting Servers” on page 6 for information about interconnecting servers and connecting them to a LAN.

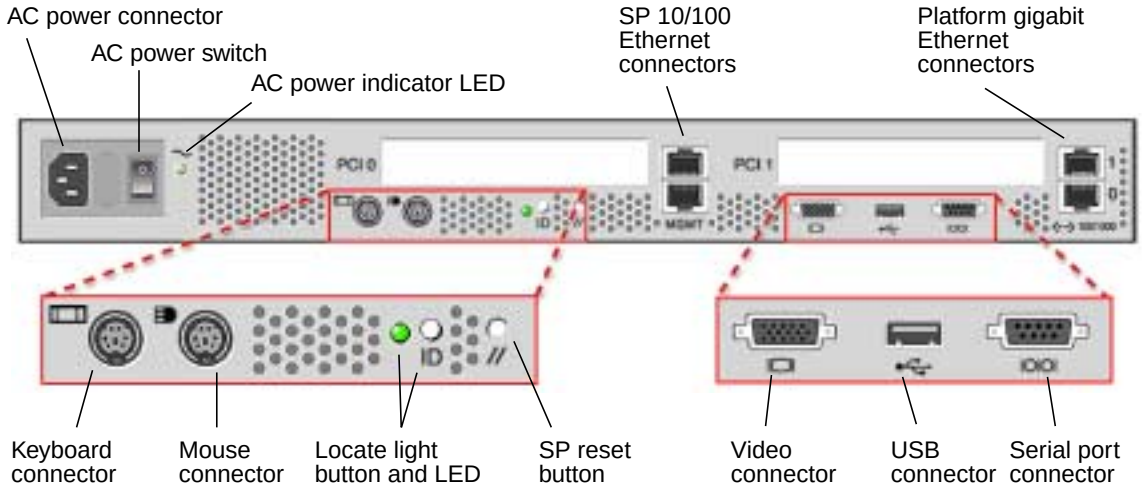

FIGURE 1-5 Sun Fire V20z Server Back Panel

Interconnecting Servers

You can interconnect multiple servers in a daisy chain configuration by using the SP connectors to form a management LAN as shown in FIGURE 1-6. This figure also shows how the servers are connected to external LANs using the platform gigabit connectors.

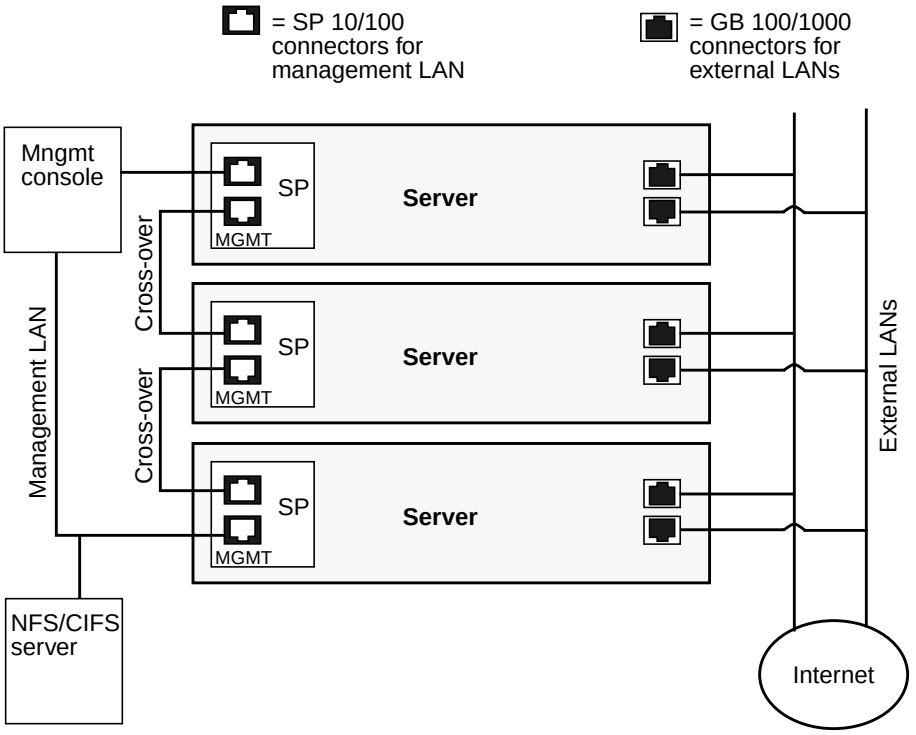

FIGURE 1-6 Daisy Chain Architecture

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:

1. **Ensure that a grounded AC power cord is plugged into the AC power connector on the rear of the server and into an AC power outlet. See** FIGURE 1-5 **for the connector location.**

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

2. **Turn on the AC power switch on the server back panel (see** FIGURE 1-5**).**

   This switch provides AC power to the SP and basic hardware. Wait until the SP finishes booting and the message, `Main Power Off`, appears on the LCD display on the front panel before you go to the next step.

3. **Push and release the platform power button on the server front panel (see** FIGURE 1-7**).**

   This button provides power to the BIOS, operating system, and drivers.

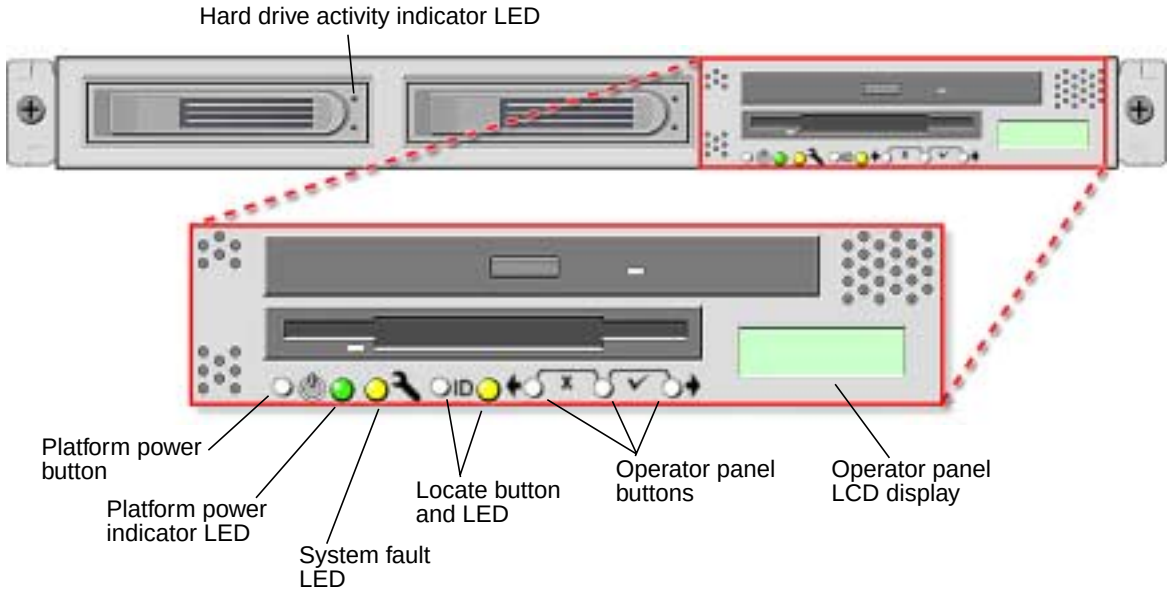

FIGURE 1-7 Sun Fire V20z Server Front Panel

Note – If this is the first time you are booting 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.

4. **Continue with initial software setup tasks, as described in Chapter 2 of this guide.**

CHAPTER 2

Initial Software Configuration

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

- "Configuring the Service Processor" on page 10
  - "Defining SP Network Settings" on page 10
  - "Defining the Default Server Name" on page 15 (optional)
  - "Creating the Initial Manager Account" on page 14
- "Installing and Mounting the NSV Software" on page 18
- "Setting up the Platform Operating System and Drivers" on page 20

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

Configuring the Service Processor

The Sun Fire V20z servers include a dedicated service processor (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 server, 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 10
- "Assigning Static SP Network Settings" on page 12

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 12.

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
   ```

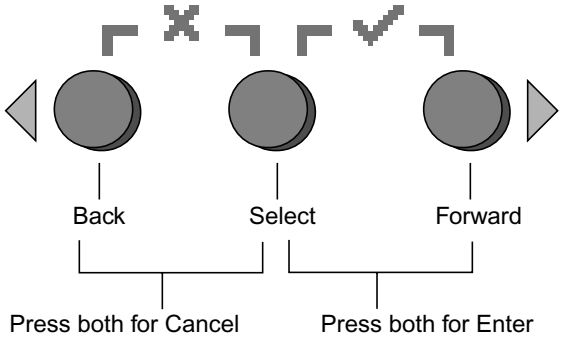

FIGURE 2-1 Operator Panel Buttons

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 14 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. See "Autoconfiguring the SP" on page 14.

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: 10.10.30.202
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 1-7**).**

   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. See “Autoconfiguring the SP” on page 14.

12. **Continue with “Creating the Initial Manager Account” on page 14.**

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.

Login 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.

   After you create the initial manager account, continue with “Defining the Default Server Name” on page 15 or “Server Management and Platform Software” on page 16.

Defining the Default Server Name

This procedure is optional, but you can follow these steps to define a name for the SP that can be displayed in the LCD panel when the server is in a background state. When the server is in a background state, the top line of the LCD panel displays the SP IP address, as in the following example:

```
123.45.67.89
OS running
```

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 combination 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, “Installing and Mounting the NSV Software” on page 18.

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, regular users can only view the current configuration with read-only access.

The following software components are included with your server:

- Platform BIOS (preinstalled)
- SP Base Software (preinstalled)
- SP Value-Add Software (preinstalled)
- Java Runtime Environment (JRE) installation 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 18.

Network Share Volume Structure

The following compressed packages are included with your server:

TABLE 2-1 Network Share Volume Compressed Packages

File Name	File Contents
`nsv.zip`	SP software
`nsv-redhat.zip`	BIOS, drivers for Red Hat Linux
`nsv-suse.zip`	BIOS, drivers for SUSE Linux

When extracted, the compressed packages in TABLE 2-1 populate the following files on the NSV:

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

Where NSV_*version* is the version that s displayed after you unzip the packages. For example:

```
NSV_V2.0.0.42
```

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.
`snmp`	SNMP MIBS. Refer to the *Sun Fire V20z Server Management Guide* for details.
`spupdate`	The server for updating the SP. Refer to the *Sun Fire V20z Server Management Guide* 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 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 LAN 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 5 for the location of the SP connectors and guidelines for connecting servers to management LANs.

2. **Insert the Sun Fire V20z Server 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/NSV_version/
diags
logs
snmp
spupdate
sw_images
```

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

   # chmod 777 /mnt/nsv/NSV_*version*/diags/*NSV_version_number*/scripts
   # chmod -R 755 /mnt/nsv/NSV_*version*/diags/*NSV_version_number*/mppc

6. **Log in to the Sun Fire V20z 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 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 20.**

Setting up the Platform Operating System and Drivers

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

After setting up the SP and network share volume software, you can install the platform operating system and drivers.

- For details about installing a supported Linux operating system and the required drivers, refer to the *Sun Fire V20z Server Operating System Installation Guide*.
- For Solaris operating system installation, refer to the documentation that is provided with the Solaris software, or at the URL:

  `http://docs.sun.com/db/prod/solaris`
- For additional Solaris operating system considerations specific to this server, also refer to the *Sun Fire V20z Server Release Notes* on the Documentation and Support Files CD, or at the URL:

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