Sun Fire V20z Server
Linux Operating System
Installation Guide

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Contents

Installing Red Hat Enterprise Linux 3 Software on Sun Fire V20z Servers

Note – The system administration procedures in this chapter are intended for users with at least basic Linux administration experience.

This chapter is organized into the following sections.

■ "Installing Red Hat Enterprise Linux 3 Software From CDs" on page 1.

■ "Installing Red Hat Enterprise Linux 3 Software From a Network" on page 5.

■ "Updating Red Hat Enterprise Linux 3 Software" on page 9.

Installing Red Hat Enterprise Linux 3 Software From CDs

The tasks for installing Red Hat Enterprise Linux 3 software from CDs consist of the following procedures.

1. Install the Red Hat Enterprise Linux 3 software. See "Installing Red Hat Enterprise Linux 3 Software" on page 2.

2. Update the Red Hat Enterprise Linux 3 software. See "Updating Red Hat Enterprise Linux 3 Software" on page 9.

Required Items

The CD installation procedure requires the following items.

- A Sun Fire V20z server equipped with:
  - A CD-ROM or DVD-ROM drive
  - A PS/2 keyboard
  - A PS/2 mouse (optional, not used for installation)
- Monitor
- Red Hat Enterprise Linux 3 Media CD Set (AS, ES, or WS version)

Installing Red Hat Enterprise Linux 3 Software

1. **Connect the keyboard and monitor to the appropriate connectors on the Sun Fire V20z server.**

2. **Power on the server and insert the Red Hat Enterprise Linux 3 CD 1 into the CD tray.**

   The server will boot off of the CD and display a `boot:` prompt.

3. **At the `boot:` prompt, type the following command:**

   `boot:` **`linux text`**

4. **When prompted to test the CD media, select OK to test the media or Skip.**

   After the CD media test (if you choose to run it), the Anaconda installer starts. This will take a few minutes.

5. **At the Welcome screen, select OK.**

6. **Make the following selections when prompted:**

   a. **Select the appropriate language.**

   b. **Select your keyboard type.**

   c. **Select No-mouse if you don't have a mouse connected, or verify that the mouse you have attached has been properly detected.**

7. **When prompted for disk partitioning, select Autopartition.**

   A dialog box appears, prompting you to choose whether you want to keep the existing partitions.

8. **Select one of the following options in the Autopartition dialog box:**

   - *Keep all partitions and use existing free space*: Select this option if you have installed other operating systems and would like to keep them available.

   - *Remove all partitions on this server*: Select this option if you want to use the entire disk and remove any operating systems that might be installed.

9. **If you chose Remove all partitions on this server, a warning about data being removed from the drives is displayed. Select Yes.**

10. **On the Partitioning screen, tab to OK and press Enter.**

    The first boot loader configuration screen is displayed.

11. **In the Boot Loader Configuration screens, make the following selections:**

    a. **In the first Boot Loader Configuration screen, select a boot loader of your choice, then select OK.**

    b. **In the second Boot Loader Configuration screen, tab to OK, then press Enter.**

    c. **If you are prompted to add a boot loader password, enter a password if desired.**

    d. **Select the default option when prompted for which operating systems to boot.**

    e. **Select MBR when asked where to install the boot loader.**

12. **In the Network Configuration screens:**

    a. **Configure each network device as prompted.**

    b. **Add the hostname for the server, if necessary.**

13. **In the Firewall screen, select whether to enable, customize, or disable the firewall.**

14. **In the Language Support screen, select any other additional languages you need to install.**

15. **In the Time Zone Selection screen, select the appropriate time zone.**

16. **In the Root Password screen, enter the superuser password of your choice.**

Note – If you forget the password, you might have to reinstall the operating system.

You will be prompted to choose whether or not to customize the package selection.

17. **In the Workstation Defaults screen, check the box to Customize software selection, then select OK.**

18. **In the Package Group Selection setup screen, select the appropriate packages for your environment.**

    Use the arrow keys to move the cursor, then press the Spacebar to check selections.

19. **Read the dialog box about the installation log, then select OK.**

   This installation of the RPMs will take about 10 minutes, depending on what you selected for installation. When you are prompted to switch a CD, the installer automatically ejects the CD.

20. **When prompted to change CDs, insert the requested CD and press OK.**

   You might not need all the CDs, depending on which options you selected for installation.

21. **If prompted, perform the following steps:**

   a. **Select the default video interface detected by the installer.**

   b. **Identify the connected monitor and select the best match in the installer.**

   c. **At the X-Customization screen, select Text Interface.**

22. **Select OK in the Complete dialog box.**

   The installation is complete.

23. **Continue to "Updating Red Hat Enterprise Linux 3 Software" on page 9 for information on updating the Red Hat Enterprise Linux 3 Software.**

Installing Red Hat Enterprise Linux 3 Software From a Network

The tasks for installing Red Hat Enterprise Linux 3 software from a networked PXE server consist of the following procedures.

1. Configure your network to support PXE installation. See "Preconfiguring Your Network to Support PXE Installation" on page 33.

2. Create a PXE install image on a system that will be the PXE server, from which the software is downloaded to other systems (PXE clients). See "Creating a PXE Install Image on the PXE Server" on page 6.

3. Install the Red Hat software to the PXE clients from the PXE server. See "Installing Red Hat Enterprise Linux 3 Software From a PXE Server" on page 8.

4. Update the Red Hat software. See "Updating Red Hat Enterprise Linux 3 Software" on page 9.

Required Items

The PXE installation procedure requires the following items.

- The DHCP server that you set up in "Preconfiguring Your Network to Support PXE Installation" on page 33, equipped with:
  - A CD-ROM drive
  - A PS/2 keyboard
- Monitor
- Red Hat Enterprise Linux 3 Media CD Set (AS, ES, or WS version)
- Sun Fire V20z Server Documentation and Support Files CD

Creating a PXE Install Image on the PXE Server

This procedure describes how to create a PXE install image on the same server that is your DHCP server, so that it will also act as your PXE server. The PXE server provides the operating system files to your PXE client.

Note – Before you start this procedure, verify that your network has been configured as described in "Preconfiguring Your Network to Support PXE Installation" on page 33.

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1. **Insert Red Hat Enterprise Linux 3 CD 1 into your DHCP/PXE server and copy its contents to your PXE server, by typing the commands listed below:**

   You can use a different target directory than the /home/pxeboot/SunFire_rhe13/ directory shown below. The examples in this procedure use this directory.

   ```
   # mkdir -p /home/pxeboot/SunFire_rhe13/
   ```

   ```
   # mount /dev/cdrom /mnt/cdrom
   ```

   ```
   # cp -a /mnt/cdrom/RedHat /home/pxeboot/SunFire_rhe13/
   ```

2. **Copy the initial ramdisk and kernel from CD 1 into the base of the PXE image with the following commands:**

   ```
   # cp /mnt/cdrom/images/pxeboot/initrd.img \
   /home/pxeboot/SunFire_rhe13/
   ```

   ```
   # cp /mnt/cdrom/images/pxeboot/vmlinuz \
   /home/pxeboot/SunFire_rhe13/
   ```

3. **Remove CD 1 from the server after you type the following command:**

   ```
   # umount /dev/cdrom
   ```

4. **Insert Red Hat Enterprise Linux 3 CD 2 into your server and copy its contents to your PXE server, by typing the following commands:**

   ```
   # mount /dev/cdrom /mnt/cdrom
   ```

   ```
   # cp -a /mnt/cdrom/RedHat /home/pxeboot/SunFire_rhe13/
   ```

   If you are prompted whether to overwrite any existing files, type **y** to overwrite the files.

5. **Remove CD 2 from the server after you type the following command:**

   ```
   # umount /dev/cdrom
   ```

6. **Insert Red Hat Enterprise Linux 3 CD 3 into your server and copy its contents to your PXE server, by typing the following commands:**

```
# mount /dev/cdrom /mnt/cdrom
```

```
# cp -a /mnt/cdrom/RedHat /home/pxeboot/SunFire_rhe13/
```

If you are prompted whether to overwrite any existing files, type **y** to overwrite the files.

7. **Remove CD 3 from the server after you type the following command:**

```
# umount /dev/cdrom
```

8. **Insert Red Hat Enterprise Linux 3 CD 4 into your server and copy its contents to your PXE server, by typing the following commands:**

```
# /dev/cdrom /mnt/cdrom
```

```
# cp -a /mnt/cdrom/RedHat /home/pxeboot/SunFire_rhe13/
```

If you are prompted whether to overwrite any existing files, type **y** to overwrite the files.

9. **Remove CD 4 from the server after you type the following command:**

```
# umount /dev/cdrom
```

10. **Copy the kickstart file `ks.cfg` to your PXE server by typing the following command:**

```
# cp /tmp/rhe13-pxefiles/ks.cfg /home/pxeboot/SunFire_rhe13/
```

11. **On your PXE server, edit and save the kickstart file** /home/pxeboot/SunFire_rhe13/ks.cfg **so that the** nfs **line is as follows:**

```
nfs --server n.n.n.n --dir /home/pxeboot/SunFire_rhe13/
```

Where *n.n.n.n* is the IP address of your PXE server. Double check that the location indicated after `--dir` is pointing to the top level of your image.

12. **On your PXE server, modify and save the file** /home/pxeboot/pxelinux.cfg/default **to add the following entry to it:**

Note that you should type the text block from append ksdevice through ks.cfg as one continuous string with no returns.

```
default SunFire_rhe13
label SunFire_rhe13
kernel SunFire_rhe13/vmlinuz
append ksdevice=eth0 console=ttyS0,19200 console=tty0
load_ramdisk=1 initrd=SunFire_rhe13/initrd.img network
ks=nfs:n.n.n.n:/home/pxeboot/SunFire_rhe13/ks.cfg
```

Where *n.n.n.n* is the IP address of your PXE server.

Installing Red Hat Enterprise Linux 3 Software From a PXE Server

This procedure describes how to initiate the request from the target Sun Fire V20z server to download the boot image file from the PXE/DHCP server and to install the Red Hat Enterprise Linux 3 software onto the target server.

Note – This procedure assumes that you have already preconfigured your network and PXE server install image as described in "Preconfiguring Your Network to Support PXE Installation" on page 33 and "Creating a PXE Install Image on the PXE Server" on page 6.

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1. **Connect the PXE client to the same network as the PXE server, and power on the PXE client.**

   The PXE client is the target Sun Fire V20z server to which you are installing Red Hat Enterprise Linux 3 software.

2. **When the PXE client prompts you for a network boot, press the F12 key.**

   The PXE client connects to the PXE server and attempts to obtain an IP address from the DHCP server.

3. **Press the F8 key to begin the downloading of the PXE boot image.**

4. **When you are prompted at the** `boot:` **prompt, type in the label you gave the image during Step 12 of "Creating a PXE Install Image on the PXE Server" on page 6.**

   The Red Hat Enterprise Linux 3 install image downloads onto the target Sun Fire V20z server.

5. **To configure the Linux operating system for your server, refer to the manual that is shipped with your Red Hat Enterprise Linux 3 media kit.**

6. **Proceed to "Updating Red Hat Enterprise Linux 3 Software" on page 9.**

Updating Red Hat Enterprise Linux 3 Software

The CD media does not contain the most up-to-date versions of the software. Since the media has been released, there have been many updates to the Red Hat Enterprise Linux software. To keep your system protected against security threats and increase stability, you should run the up2date program when the system is fully installed.

Refer to the Red Hat manual included with your Red Hat Enterprise Linux 3 media kit for information about setting up the up2date program. When running up2date, select the kernel packages on the available package updates section. After up2date has completed, reboot the server.

Installing SuSE Linux Enterprise Server 8 Software on Sun Fire V20z Servers

Note – The system administration procedures in this chapter are intended for users with at least basic Linux administration experience.

This chapter is organized into the following sections.

- "Installing SuSE Linux Enterprise Server 8 From CDs" on page 11.
- "Installing SuSE Linux Enterprise Server 8 Software From a Network" on page 14.
- "Updating the Operating System and Drivers" on page 20.

Installing SuSE Linux Enterprise Server 8 From CDs

This section describes how to install SuSE Linux Enterpise Server 8 software from the SuSE Linux Enterprise Server 8 CD media set.

Installing from CDs consists of the following procedures.

1. Install the SuSE Linux Enterprise Server 8 software. See "Installing SuSE Linux Enterprise Server 8 Software" on page 12.

2. Update the SuSE Linux Enterprise software. See "Updating the Operating System and Drivers" on page 20.

Required Items

The CD installation procedure requires the following items.

- A Sun Fire V20z server equipped with:
  - CD-ROM or DVD-ROM drive
  - A PS/2 keyboard
  - A PS/2 mouse
- Monitor
- SuSE Linux Enterpise Server 8 Media CD Set, including:
  - 1 SuSE Linux Enterprise Server CD
  - 3 UnitedLinux 1.0 CDs
  - 2 United Linux Service Pack 3 CDs
- Sun Fire V20z Server Documentation and Resource CD

Note – A mouse is recommended for the installation, but not required. If you are not using a mouse, you can use the Tab key to toggle the selections.

Installing SuSE Linux Enterprise Server 8 Software

1. **Connect the keyboard and monitor to the appropriate connectors on the Sun Fire V20z server.**

2. **Power on the server, and insert UnitedLinux Service Pack 3 CD 1 into the server.**

   The server will boot off of the CD and a screen with installation options is displayed.

3. **Select an installation option (default is preferred) and press Enter.**

   The screen will timeout with the default selection if you to do not press Enter.

Note – You can change the video resolution of the installer by pressing the corresponding Function key on the keyboard shown on the selection screen.

---

4. **When you are prompted to make sure that CD 1 is in the drive, remove Service Pack 3 CD 1 and insert SuSE Linux Enterprise Server 8 CD 1 into the drive and select OK.**

5. **Select the appropriate language and select Accept.**

   The installer will probe the server in order to obtain the recommended settings after this selection.

6. **If a dialog box displays asking whether you want to do a new installation, select New Installation then OK.**

   A recommended configuration is displayed in the Installation Settings screen.

7. **If the displayed configuration is acceptable for your environment, select Accept. Otherwise, select the component you wish to change and make the appropriate changes.**

   For most users, the default settings will be appropriate. Refer to the SuSE Linux Enterprise Server 8 Installation Guide for more details on changing individual components.

8. **Select Yes when prompted to start the installation.**

9. **When you are prompted to switch the CD, eject the CD from the drive, insert the requested CD and press OK.**

   You might not need all of the CDs, depending on which options you selected for installation. This installation of the RPMs will take about 15 minutes, depending on what you selected for installation.

   After successful installation of the base system, a dialog box displays, instructing you to remove the inserted media.

10. **Remove any inserted media and select OK.**

    After the system has rebooted, the installer will prompt you to enter the superuser password.

11. **Enter a superuser password of your choosing.**

    Note – Ensure that you remember the password. If you forget it, you may have to reinstall the operating system.

    The installer will now prompt you to add a new user.

12. **You can add additional users at this point, or just select Next if you do not wish to add more users.**

13. **At the desktop settings menu, select Text mode only and press Accept.**

    The installer will write out some configuration files and then move on to the installation settings.

14. **When prompted to detect printers, select Skip detection.**

15. **Verify the settings in the Installation Settings screen and select Next.**

16. **After the system saves the configuration settings, select OK.**

    The installation is complete.

17. **Proceed to "Updating the Operating System and Drivers" on page 20.**

Installing SuSE Linux Enterprise Server 8 Software From a Network

The tasks for installing SuSE Linux Enterprise Server 8 software from a networked PXE server consist of the following procedures.

1. Configure your network to support PXE installation. See "Preconfiguring Your Network to Support PXE Installation" on page 33.

2. Create a PXE install image on a system that will be the PXE server, from which the software is downloaded to other systems (PXE clients). See "Creating a PXE Install Image on the PXE Server" on page 15.

3. Install the SuSE Linux software to the PXE clients from the PXE server. See "Installing SuSE Linux Enterprise Server 8 Software From a PXE Server" on page 19.

4. Update the SuSE Linux software. See "Updating the Operating System and Drivers" on page 20.

Required Items

The PXE installation procedure requires the following items.

- The DHCP server that you set up in "Preconfiguring Your Network to Support PXE Installation" on page 33, equipped with:
    - A CD-ROM drive
    - A PS/2 keyboard
- Monitor
- SuSE Linux Enterpise Server 8 Media CD Set
- Sun Fire V20z Server Documentation and Support Files CD

Creating a PXE Install Image on the PXE Server

This procedure describes how to create a PXE install image on the same server that is your DHCP server, so that it will also act as your PXE server. The PXE server provides the operating system files to your PXE client.

Note – Before you start this procedure, verify that your network has been configured as described in "Preconfiguring Your Network to Support PXE Installation" on page 33.

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1. **Set up the directory structure that will hold the SuSE Linux Enterprise Server 8 with Service Pack 3.**

   You can use a different target directory than the /home/pxeboot/SunFire_sles8/ directory shown above. The examples in this procedure use this directory.

   ```
   # mkdir -p /home/pxeboot/SunFire_sles8/sles8-x86_64/CD1
   ```

   ```
   # mkdir -p /home/pxeboot/SunFire_sles8/ \
   unitedlinux-x86_64/CD{1,2,3}
   ```

   ```
   # mkdir -p /home/pxeboot/SunFire_sles8/sp3-x86_64/CD{1,2}
   ```

2. **Insert the SuSE Linux Enterprise Server 8 CD into your server and copy its contents to your PXE server by typing the following commands:**

   ```
   # mount /media/cdrom
   ```

   ```
   # cp -a /media/cdrom/* \
   /home/pxeboot/SunFire_sles8/sles8-x86_64/CD1
   ```

3. **Remove the SuSE Linux Enterprise Server 8 CD from the server after you type the following command:**

   ```
   # umount /dev/cdrom
   ```

4. **Insert UnitedLinux 1.0 CD 1 into your server and copy its contents to your PXE server, by typing the following commands:**

   ```
   # mount /media/cdrom
   ```

   ```
   # cp -a /media/cdrom/* \
   /home/pxeboot/SunFire_sles8/unitedlinux-x86_64/CD1
   ```

5. **Remove UnitedLinux 1.0 CD 1 from the server after you type the following command:**

   ```
   # umount /dev/cdrom
   ```

6. **Insert UnitedLinux 1.0 CD 2 into your server and copy its contents to your PXE server, by typing the following commands:**

```
# mount /media/cdrom
# cp -a /media/cdrom/* \
/home/pxeboot/SunFire_sles8/unitedlinux-x86_64/CD2
```

7. **Remove UnitedLinux 1.0 CD 2 from the server after you type the following command:**

```
# umount /dev/cdrom
```

8. **Insert UnitedLinux 1.0 CD 3 into your server and copy its contents to your PXE server, by typing the following commands:**

```
# mount /media/cdrom
# cp -a /media/cdrom/* \
/home/pxeboot/SunFire_sles8/unitedlinux-x86_64/CD3
```

9. **Remove UnitedLinux 1.0 CD 3 from the server after you type the following command:**

```
# umount /dev/cdrom
```

10. **Insert UnitedLinux Service Pack 3 CD 1 into your server and copy its contents to your PXE server by typing the following commands:**

```
# mount /media/cdrom
# cp -a /media/cdrom/* \
/home/pxeboot/SunFire_sles8/sp3-x86_64/CD1
```

11. **Remove UnitedLinux Service Pack 3 CD 1 from the server after you type the following command:**

```
# umount /dev/cdrom
```

12. **Insert UnitedLinux Service Pack 3 CD 2 into your server and copy its contents to your PXE server by typing the following commands:**

```
# mount /media/cdrom
# cp -a /media/cdrom/* \
/home/pxeboot/SunFire_sles8/sp3-x86_64/CD2
```

13. **Remove UnitedLinux Service Pack 3 CD 2 from the server after you type the following command:**

```
# umount /dev/cdrom
```

14. **Set up the boot environment for the client system to boot from by typing the following commands:**

```
# cd /home/pxeboot/SunFire_sles8/
# ln -s sles8-x86_64/CD1/boot .
```

15. **Set up the content and media directories by typing the following commands:**

    ```
    # ln -s sles8-x86_64/CD1/content .
    # ln -s sles8-x86_64/CD1/media.1 .
    ```

16. **Set up the appropriate content and instorder files by typing the following commands:**

    ```
    # mkdir yast
    # cp /tmp/sles8-pxefiles/order yast/
    # cp /tmp/sles8-pxefiles/instorder yast/
    ```

17. **Copy the** `autoinst.xml` **file from the** `/tmp/sles8-pxefiles/` **directory to the root of the PXE image by typing the following commands:**

    ```
    # cp /tmp/sles8-pxefiles/autoinst.xml \
    /home/pxeboot/SunFire_sles8/
    ```

18. **On your PXE server, modify and save the file** `/home/pxeboot/pxelinux.cfg/default` **to add the following entry to it:**

    Type the text block from `append` through `autoinst.xml` as one continuous string with no returns.

    ```
    default SunFire_sles8
    label SunFire_sles8
    kernel SunFire_sles8/boot/loader/linux
    append textmode=1
    initrd=SunFire_sles8/boot/loader/initrd
    install=nfs:/home/pxeboot/SunFire_sles8 insmod=bcm5700
    autoyast=nfs://n.n.n.n/home/pxeboot/SunFire-sles8/autoinst.xml
    ```

    Where *n.n.n.n* is the IP address of your PXE server.

    Note – For console-based installations, add `console=ttyS0,19200` to the `append` line.

    ---

19. **Copy the Ethernet and SCSI RPMs into the proper directory by typing the following command:**

    ```
    # cp /tmp/sles8-pxefiles/*.x86_64.rpm \
    /home/pxeboot/SunFire_sles8/sles8-x86_64/CD1/suse/x86_64/
    ```

20. **Copy the RPM selection file to the proper directory by typing the following command:**

    If the systems you are building are single-processor systems, type the following command:

    ```
    # cp /tmp/sles8-pxefiles/Sunfire.sel.up \
    /home/pxeboot/SunFire_sles8/sles8-x86_64/ \
    CD1/suse/setup/descr/Sunfire.sel
    ```

    If the systems you are building have more than one processor, type the following command:

    ```
    # cp /tmp/sles8-pxefiles/Sunfire.sel.smp \
    /home/pxeboot/SunFire_sles8/sles8-x86_64/ \
    CD1/suse/setup/descr/Sunfire.sel
    ```

21. **Update the package description files by typing the following commands:**

    ```
    # cd /home/pxeboot/SunFire_sles8/sles8-x86_64/CD1/suse/
    ```

    ```
    # /usr/lib/YaST2/bin/create_package_descr \
    -d /home/pxeboot/SunFire_sles8/sles8-x86_64/CD1/suse/ \
    -l english
    ```

    Note – If the `create_package_descr` program is not found, be sure to install the `autoyast2` package.

    ---

22. **Modify the available packages list by typing the following command:**

    ```
    # echo "Sunfire.sel" >> \
    /home/pxeboot/SunFire_sles8/sles8-x86_64/ \
    CD1/suse/setup/descr/selections
    ```

    This ensures that the new selection package that was added will be seen by the installer.

Installing SuSE Linux Enterprise Server 8 Software From a PXE Server

This procedure describes how to initiate the request from the target Sun Fire V20z server to download the boot image file from the PXE/DHCP server and to install the SuSE Linux Enterprise Server 8 software onto the target server.

Note – This procedure assumes that you have already preconfigured your network and PXE server install image as described in "Preconfiguring Your Network to Support PXE Installation" on page 33 and "Creating a PXE Install Image on the PXE Server" on page 15.

---

1. **Connect the PXE client to the same network as the PXE server, and power on the PXE client.**

   The PXE client is the target Sun Fire V20z server to which you are installing SuSE Linux Enterprise Server 8 software.

2. **When the PXE client prompts you for a network boot, press the F12 key.**

   The PXE client connects to the PXE server and attempts to obtain an IP address from the DHCP server.

3. **Press the F8 key to begin the downloading of the PXE boot image.**

4. **When you are prompted at the** `boot:` **prompt, type in the label you gave the image during Step 18 of "Creating a PXE Install Image on the PXE Server" on page 15.**

   The SuSE Linux Enterprise Server 8 install image downloads onto the target Sun Fire V20z server.

5. **To configure the Linux operating system for your server, refer to the manual that is shipped with your SuSE Linux Enterprise Server 8 media kit.**

6. **Proceed to "Updating the Operating System and Drivers" on page 20.**

Updating the Operating System and Drivers

The CD media does not contain the most up-to-date versions of the software. Since the media has been released, there have been many updates to the SuSE Linux Enterprise Server software.

See the following procedures for instructions on updating the SuSE Linux Enterprise 8 software.

- "Updating SuSE Linux Enterprise Server 8 Software" on page 20.
- "Upgrading SCSI and Network Drivers" on page 21.

Updating SuSE Linux Enterprise Server 8 Software

To keep your system protected against security threats and increase stability, you should run the yast2 program when the system is fully installed. Refer to the SuSE Linux Enterprise Server 8 documentation for futher details on YaST Online Update.

This procedure assumes you have your system configured to connect to the Internet.

1. **Log in as the superuser.**

2. **Run the following command:**

   # **yast2 online_update**

3. **Follow the directions on the screen.**

   Note – If a newer kernel is installed as part of the update, it might downgrade some drivers. Refer to "Upgrading SCSI and Network Drivers" on page 21 for information on upgrading the drivers

Upgrading SCSI and Network Drivers

The kernel that is installed on the system might not contain the optimal drivers that Sun Microsystems recommends. Updating the drivers ensures proper system performance.

The instructions below describe how to copy the latest drivers from the Sun Fire V20z Server Documentation and Support Files CD. You can also download the driver RPMs from the Sun Fire V20z server Downloads link at:

```
http://www.sun.com/servers/entry/v20z/
```

1. **Determine which kernel is currently installed on the system by running the following command:**

   # `rpm -qa | grep ^k_`

   The following is an example of the output you might get:

   ```
   k_deflt_2.4.21-127
   ```

2. **Insert the Documentation and Support Files CD into the Sun Fire V20z server.**

3. **Mount the CD and locate the Ethernet and SCSI drivers by typing the following commands:**

   # `mount /media/cdrom`

   # `cd /media/cdrom/support/drivers/suse/sles8/`

4. **Determine which driver RPMs correspond to the kernel version as determined in Step 1.**

   The filenames of the RPMs contain the kernel version and type. For the example, for the kernel version in Step 1, the Ethernet (`bcm5700`) and SCSI (`lsi`) drivers would be:

   ```
   bcm5700-deflt-7.0.0_2.4.21_127-sles8_1.x86_64.rpm
   lsi-deflt-2.05.06_2.4.21_127-sles8_1.x86_64.rpm
   ```

   Where `2.4.21_127` represents the kernel number that correponds to `k_deflt_2.4.21-127`.

5. **Run the following command to install the RPM files:**

   # `rpm -Uvh /media/cdrom/support/drivers/suse/sles8/`*bcm-driver*`.rpm`

   # `rpm -Uvh media/cdrom/support/drivers/suse/sles8/`*lsi-driver*`.rpm`

   Where *bcm-driver* and *lsi-driver* refers to the appropriate Ethernet and SCI driver rpm files, as determined in Step 4.

6. **After successful installation, reboot the system as follows:**

   # `reboot`

Installing SuSE Linux Professional 9.0 Software on Sun Fire V20z Servers

Note – The system administration procedures in this chapter are intended for users with at least basic Linux administration experience.

This chapter is organized into the following sections.

- "Installing SuSE Linux Professional 9.0 Software From CDs or DVD" on page 23.
- "Installing SuSE Linux Professional 9.0 Software From a Network" on page 26.
- "Updating the Operating System and Drivers" on page 31.

Installing SuSE Linux Professional 9.0 Software From CDs or DVD

This section describes how to install SuSE Linux Enterprise Server 8 software using the SuSE Linux Enterprise Server 8 media set.

Installing from CDs or DVD consists of the following procedures.

1. Installing SuSE Linux Professional 9.0 software. See "Installing SuSE Linux Professional 9.0 Software from CDs or DVD" on page 24.

2. Updating SuSE Linux Professional 9.0 software. See "Updating the Operating System and Drivers" on page 31.

Required Items

The procedure for "Installing SuSE Linux Professional 9.0 Software from CDs or DVD" on page 24 requires the following items.

Note – A DVD-ROM drive must be installed on the system if you are installing from DVD. You can choose to have a DVD-ROM drive installed when ordering the server.

- A Sun Fire V20z server equipped with:
  - A CD-ROM or DVD-ROM drive (necessary for DVD installation)
  - PS/2 keyboard
  - PS/2 mouse
- Monitor
- SuSE 9.0 Professional Media CD Set (5 CDs or 1 DVD)
- Sun Fire V20z Documentation and Support Files CD

Note – A mouse is recommended for the installation, but not required. If you are not using a mouse, you can use the Tab key to toggle the selections.

Installing SuSE Linux Professional 9.0 Software from CDs or DVD

1. **Connect the keyboard and monitor to the appropriate connectors on the Sun Fire V20z server.**

2. **Power on the server, and insert the SuSE Linux Professional 9.0 CD 1 (or DVD) into the server.**

   When the server boots off the CD/DVD, a menu with installation options will appear.

3. **Before the screen times out, select Installation from the menu of choices using the arrow keys, and press Enter to proceed.**

Note – You may change the video resolution of the installer by pressing the F2 key on the keyboard during the boot menu screen, and using the up and down arrows on the keyboard to select the appropriate resolution.

---

4. **Select the appropriate language and select Accept.**

   The installer will probe the server in order to obtain the recommended settings after this selection.

5. **If a dialog box displays, asking whether you want to do a new installation, select New Installation, then OK.**

   A recommended configuration is displayed in the Installation Setting screen.

6. **If the displayed configuration is acceptable for your environment, select Accept. Otherwise, select the component you wish to change and make the appropriate changes.**

   For most users, the default settings will be appropriate. Refer to the SuSE Linux Professional 9.0 Installation Guide for more details on changing individual components.

7. **Select Yes when prompted to start the installation.**

   The installer will install the base system first. This will take about 5 to 10 minutes.

8. *For CD Installation Only*: **If you are prompted to switch the CD, eject the CD from the drive, insert the requested CD and press OK.**

   After successful installation of the base system, the system will reboot.

9. **When the boot menu appears, select the default option or wait for the boot menu to timeout.**

   After the system has rebooted, the installer will prompt you for the remaining CDs to complete the installation, if you are installing with CDs.

10. *For CD Installation Only*: **Insert the requested CD at the appropriate time.**

    All of the CDs may not be required, depending upon the software selected at the beginning of the installation process.

    After the installer has finished with the needed media, the installer will prompt you to enter the root password.

11. **Enter a root password of your choosing.**

    Note – Ensure that you remember the password. If you forget it, you may have to reinstall the operating system.

    The Network Configuration screen displays with network interfaces detected by the installer.

12. **Select Accept to accept the network configuration, or change the settings as necessary.**

13. **When prompted to test the Internet connection, select Yes or No.**

   It is recommended that you skip this test.

14. **At the User Authentication Method screen, select the appropriate authentication method for your environment.**

   ■ If you choose Stand-Alone, the installer will now prompt you to add a new user. You can add additional users here, or just select next if you do not wish to add more users at this point.

   ■ If you chose for the server to become a network client, you will be prompted for the appropriate configuration parameters.

15. **Read the displayed Release Notes and select Next.**

16. **Verify the settings in the Hardware Configuration screen and select Next.**

   The system saves the configuration settings, and the Installation Completed screen is displayed.

17. **Select Finish to complete the installation.**

18. **Proceed to "Updating the Operating System and Drivers" on page 31.**

Installing SuSE Linux Professional 9.0 Software From a Network

The tasks for installing SuSE Linux Professional 9.0 software from a networked PXE server consist of the following procedures.

1. Configure your network to support PXE installation. See "Preconfiguring Your Network to Support PXE Installation" on page 33.

2. Create a PXE install image on a system that will be the PXE server, from which the software is downloaded to other systems (PXE clients). See "Creating a PXE Install Image on the PXE Server" on page 27.

3. Install the SuSE Linux software to the PXE clients from the PXE server. See "Installing SuSE Linux Professional 9.0 Software From a PXE Server" on page 30.

4. Update the SuSE Linux software. See "Updating the Operating System and Drivers" on page 31.

Required Items

The PXE installation procedure requires the following items.

- The DHCP server that you set up in "Preconfiguring Your Network to Support PXE Installation" on page 33, equipped with:
  - A CD-ROM or DVD-ROM drive (necessary for DVD installation)
  - PS/2 keyboard
- Monitor
- SuSE 9.0 Professional Media CD Set (5 CDs or DVD)
- Sun Fire V20z Server Documentation and Support Files CD

Note – A mouse is recommended for the installation, but not required. If you are not using a mouse, you can use the Tab key to toggle the selections.

Creating a PXE Install Image on the PXE Server

This procedure describes how to create a PXE install image on the same server that is your DHCP server, so that it will also act as your PXE server. The PXE server provides the operating system files to your PXE client.

Note – Before you start this procedure, verify that your network has been configured to support PXE installation, as described in "Preconfiguring Your Network to Support PXE Installation" on page 33.

---

1. **On your DHCP/PXE server, set up the directory structure that will hold the SuSE Linux Professional 9.0 software.**

   You can use a different target directory than the /home/pxeboot/SunFire_suse9/ directory shown below. The examples in this procedure use this directory.

   # **mkdir -p /home/pxeboot/SunFire_suse9/**

2. **Insert SuSE Linux Professional 9.0 CD 1 (or DVD) into your PXE server and copy its contents to your PXE server by typing the following commands:**

   # **mount /media/cdrom**

   # **cp -a /media/cdrom/* /home/pxeboot/SunFire_suse9/**

3. *For CD installation only*: **Remove the CD from the server after you type the following command:**

   # **umount /dev/cdrom**

4. *For CD installation only*: **Repeat Step 2 and Step 3 for all five CDs of the SuSE Linux Professional 9.0 Media Kit.**

5. **Copy the** `autoinst.xml` **file from the** `/tmp/suse9-pxefiles/` **directory to the root of the PXE image with the following commands:**

```
# cp /tmp/suse9-pxefiles/autoinst.xml \
/home/pxeboot/SunFire_suse9/
```

6. **On your PXE server, modify and save the file**
`/home/pxeboot/pxelinux.cfg/default` **to add the following entry to it:**

Note that you should type the text block from `append` through `autoinst.xml` as one continuous string with no returns.

```
default SunFire_suse9

label SunFire_suse9

kernel SunFire_suse9/boot/loader/linux

append textmode=1 initrd=SunFire_suse9/boot/loader/initrd
install=nfs:/home/pxeboot/SunFire_suse9 insmod=bcm5700
autoyast=nfs://n.n.n.n/home/pxeboot/SunFire-suse9/autoinst.xml
```

Where *n.n.n.n* is the IP address of your PXE server.

Note – For console-based installations, add `console=ttyS0,19200` to the `append` line.

---

7. **Copy the Ethernet and SCSI RPMs into the proper directory by typing the following command:**

```
# cp /tmp/suse9-pxefiles/*.x86_64.rpm \
/home/pxeboot/SunFire_suse9/suse/x86_64/
```

8. **Copy the RPM selection file to the proper directory by typing the following command:**

If the systems you building are single-processor systems, type the following command:

```
# cp /tmp/suse9-pxefiles/Sunfire.sel.up \
/home/pxeboot/SunFire_suse9/suse/setup/descr/Sunfire.sel
```

If the systems you are building have more than one processor, type the following command:

```
# cp /tmp/suse9-pxefiles/Sunfire.sel.smp \
/home/pxeboot/SunFire_suse9/suse/setup/descr/Sunfire.sel
```

9. **Update the package description files by typing the following commands:**

```
# cd /home/pxeboot/SunFire_suse9/suse/
```

```
# create_package_descr -d /home/pxeboot/SunFire_suse9/suse/ \
-l english
```

This process will take a few minutes.

Note – If the create_package_descr program is not found, be sure to install the autoyast2-utils package.

---

10. **Modify the available packages list by typing the following command:**

```
# echo "Sunfire.sel" >> \
/home/pxeboot/SunFire_suse9/suse/setup/descr/selections
```

This ensures that the new selection package that was added will be seen by the installer.

Installing SuSE Linux Professional 9.0 Software From a PXE Server

This procedure describes how to initiate the request from the target Sun Fire V20z server to download the boot image file from the PXE/DHCP server and to install the SuSE Linux Professional 9.0 software onto the target server.

Note – This procedure assumes that you have already preconfigured your network and PXE server install image as described in "Preconfiguring Your Network to Support PXE Installation" on page 33 and "Creating a PXE Install Image on the PXE Server" on page 27.

---

1. **Connect the PXE client to the same network as the PXE server, and power on the PXE client.**

   The PXE client is the target Sun Fire V20z server to which you are installing SuSE Linux Professional 9.0 software.

2. **When the PXE client prompts you for a network boot, press the F12 key.**

   The PXE client connects to the PXE server and attempts to obtain an IP address from the DHCP server.

3. **Press the F8 key to begin the downloading of the PXE boot image.**

4. **When you are prompted at the** `boot:` **prompt, type in the label you gave the image during Step 6 of "Creating a PXE Install Image on the PXE Server" on page 27.**

   The SuSE Linux Professional 9.0 install image downloads onto the target Sun Fire V20z server.

5. **To configure the Linux operating system for your server, refer to the manual that is shipped with your SuSE Linux Professional 9.0 media kit.**

6. **Refer to "Updating SuSE Linux Professional 9.0 Software" on page 31 to obtain the most up to date drivers and software.**

Updating the Operating System and Drivers

The CD media does not contain the most up-to-date versions of the software. Since the media has been released, there have been many updates to the SuSE Linux Professional 9.0 software.

See the following procedures for instructions on updating the SuSE Linux Professional 9.0 software.

- "Updating SuSE Linux Professional 9.0 Software" on page 31.
- "Upgrading SCSI and Network Driver Upgrades" on page 32.

Updating SuSE Linux Professional 9.0 Software

The CD media does not contain the most up-to-date versions of the software. Since the media has been released, there have been many updates to the SuSE Linux Professional 9.0 software. To keep your system protected against security threats and increase stability, you should run the yast2 program when the system is fully installed.

Refer to the SuSE Linux Professional 9.0 documentation for futher details on YaST Online Update.

This procedure assumes you have your system configured to connect to the Internet.

1. **Log in as the superuser.**

2. **Run the following command:**

   # **yast2 online_update**

3. **Follow the directions on the screen.**

Note – If a newer kernel is installed as part of the update, it might downgrade some drivers. Please refer to "Upgrading SCSI and Network Driver Upgrades" on page 32.

Upgrading SCSI and Network Driver Upgrades

The kernel that is installed on the system might not contain the optimal drivers that Sun Microsystems recommends. Updating the drivers ensures proper system performance.

The instructions below describe how to copy the latest drivers from the Sun Fire V20z Server Documentation and Support Files CD. You can also download the driver RPMs from the Sun Fire V20z server Downloads link at:

```
http://www.sun.com/servers/entry/v20z/
```

1. **Determine which kernel is currently installed on the system by running the following command:**

   # `rpm -qa | grep ^k_`

   The following is an example of the output you might get:

   ```
   k_deflt_2.4.21-102
   ```

2. **Insert the Sun Fire V20z Documentation and Support Files CD into the Sun Fire V20z server.**

3. **Mount the CD and locate the RPMs on the CD.**

   # `mount /media/cdrom`

   # `cd /media/cdrom/support/drivers/suse/suse9`

4. **Determine which driver RPMs correspond to the kernel version as determined in Step 1.**

   The filenames of the RPMs contain the kernel version and type. For the example kernel version in Step 1, the Ethernet (`bcm5700`) and SCSI (`lsi`) drivers would be:

   ```
   bcm5700-deflt-7.0.0_2.4.21_102-suse9_1.x86_64.rpm
   ```
   ```
   lsi-deflt-2.05.06_2.4.21_102-suse9_1.x86_64.rpm
   ```

   Where `2.4.21_102` represents the kernel number that corresponds to to `k_deflt_2.4.21-102`.

5. **Run the following command to install the RPM files:**

   # `rpm -Uvh /media/cdrom/support/drivers/suse/suse9/`*bcm-driver*`.rpm`

   # `rpm -Uvh /media/cdrom/support/drivers/suse/suse9/`*lsi-driver*`.rpm`

   Where *bcm-driver* and *lsi-driver* refers to the appropriate Ethernet and SCI driver rpm files, as determined in Step 4.

6. **After successful installation, reboot the system as follows:**

   # `reboot`

APPENDIX **A**

Preconfiguring Your Network to Support PXE Installation

This appendix contains procedures for preconfiguring your network prior to performing a PXE installation.

Follow the procedures in the section appropriate for your operating system.

■ "Preconfiguring Your Network to Support Red Hat Linux Installation" on page 33.

■ "Preconfiguring Your Network to Support SuSE Linux Installation" on page 41.

Preconfiguring Your Network to Support Red Hat Linux Installation

The procedures provided in this appendix describe how to preconfigure your Linux network to support PXE installation of Red Hat Linux software. Some of the following procedures might not be necessary if you confirm that the server packages are already in place and configured.

Required Items

Preconfiguring your network for PXE installation requires the following items.

- A Red Hat Enterprise Linux 3 server equipped with:
  - A CD-ROM drive
  - PS/2 keyboard
- Monitor
- Red Hat Linux Enterprise Server 3 Media Set
- Sun Fire V20z Server Documentation and Support Files CD

This task includes the following procedures:

Copying Files From the Documentation and Support Files CD

This section describes how to copy the PXE support files, which are required for PXE configurations, from the Sun Fire V20z Documentation and Support Files CD. You can also download the driver RPMs from the Sun Fire V20z server Downloads link at:

```
http://www.sun.com/servers/entry/v20z/
```

1. **Insert the Sun Fire V20z Server Documentation and Support Files CD into the DHCP/PXE server.**

2. **Type the following commands to copy the files to the** /tmp/ **directory.**

   ```
   # mount /dev/cdrom /mnt/cdrom
   # cp /mnt/cdrom/support/pxeboot/rhel3-pxefiles.tar.gz /tmp/
   ```

3. **Uncompress and extract the contents of the tar file into the** /tmp/ **directory by typing the following command:**

   ```
   # tar -zxf /tmp/rhel3-pxefiles.tar.gz
   ```

   When you extract the file, a directory with all required files is created at /tmp/rhel3-pxefiles/

Configuring a DHCP Server

Complete the following steps on the server that will be your DHCP server.

1. **Power on the server and log in as superuser.**

2. **Determine whether the DHCP server package is already installed on the server by typing the following command:**

   # `rpm -qa | grep dhcp-`

3. **If the DHCP server package is not listed, insert Red Hat Enterprise Linux CD 1 and type the following commands:**

   # `mount /dev/cdrom /mnt/cdrom`

   # `rpm -Uvh /mnt/cdrom/RedHat/RPMS/dhcp-*.rpm`

4. **Remove CD 1 from the server after you type the following command:**

   # `umount /dev/cdrom`

5. **Set up your DHCP configuration file (for example,** `/etc/dhcpd.conf`**) so that only PXEClient requests receive PXEClient responses.**

   Add the following entry to the DHCP configuration file. Refer to the `dhcp.conf` man page for more information.

   ```
   class "PXE" {match if substring(option vendor-class-identifier, 0, 9)
   ="PXEClient"; option vendor-class-identifier "PXEClient";}
   ```

   Note – You can start with a sample DHCP configuration file in `/tmp/rhel3-pxefiles` directory.

6. **Start the DHCP service by typing the following command:**

   # `service dhcpd start`

7. **Configure the server to always start DHCP by typing the following command:**

   # `chkconfig dhcpd on`

Installing Portmap

Complete the following steps on your DHCP server.

1. **Determine whether the portmap server package is already installed on the server by typing the following command:**

   # `rpm -qa | grep portmap`

2. **If portmap is not listed, insert the Red Hat Enterprise Linux CD 2 and type the following commands to install the package from the CD:**

   # `mount /dev/cdrom /mnt/cdrom`

   # `rpm -Uvh /mnt/cdrom/RedHat/RPMS/portmap-*.rpm`

3. **Remove CD 2 from the server after you type the following command:**

   # `umount /dev/cdrom`

Configuring the TFTP Service

Complete the following steps on your DHCP server.

1. **Determine whether the TFTP server package is already installed on the server by typing the following command:**

   # `rpm -qa | grep tftp-server`

2. **If the TFTP server package is not listed, insert the Red Hat Enterprise Linux CD 1 and type the following commands to install the package from the CD:**

   # `mount /dev/cdrom /mnt/cdrom`

   # `rpm -Uvh /mnt/cdrom/RedHat/RPMS/tftp-server-*.rpm`

3. **Remove the CD from the server after you type the following command:**

   # `umount /dev/cdrom`

4. **Edit and save the** /etc/xinetd.d/tftp **file to make the following changes:**

   a. **Change the** -s /tftpboot **entry to** -s /home/pxeboot**.**

   b. **Change the disable attribute to** no**.**

5. **Restart the** xinetd **service by typing the following command:**

   # `service xinetd restart`

Installing and Configuring the `neopxe` Boot Server Daemon

Complete the following steps on your DHCP server.

Note – The `neopxe` server is designed for use with a DHCP server that is running on the same system.

---

1. **Type the following commands to install the** `neopxe` **boot server daemon on your system that is your DHCP server:**

   ```
   # cd /tmp/rhel3-pxefiles/neopxe-0.2.0/
   # ./configure
   # make
   # make install
   ```

2. **Append the path** `/usr/local/sbin/neopxe` **to the** `rc.local` **file by typing the following command, making sure to use two greater-than signs:**

   ```
   # echo "/usr/local/sbin/neopxe" >> /etc/rc.d/rc.local
   ```

3. **Copy the PXE Linux image to the** `/home/pxeboot` **directory by typing the following commands:**

   ```
   # mkdir /home/pxeboot
   # cp /tmp/rhel3-pxefiles/pxelinux.0 /home/pxeboot
   ```

4. **Configure the PXE Linux image by typing the following commands:**

   ```
   # mkdir /home/pxeboot/pxelinux.cfg/
   # touch /home/pxeboot/pxelinux.cfg/default
   ```

5. **Edit the** `/usr/local/etc/neopxe.conf` **configuration file, which is read by** `neopxe` **at startup.**

   If the `neopxe.conf` file is not at the location shown above, you can copy it from `/tmp/rhel3-pxefiles/neopxe-0.2.0/` if you downloaded the files as shown in "Copying Files From the Documentation and Support Files CD" on page 34.

   Refer to the `neopxe.conf` man page for more information.

   A valid configuration file must have entries for each of the following lines, including at least one service line.

   ip_addr=*n.n.n.n*

   prompt=*boot-prompt-string*

   prompt_timeout=*timeout*

   service=*service-number,boot-server,boot-file,label*

Where:

- *n.n.n.n* is the IP address of your PXE server.
- *boot-prompt-string* is the character string displayed during a network boot that prompts the user to press the F8 key for a boot menu.
- *timeout* is the number of seconds the prompt is displayed before the server defaults to the first service for booting.
- *service-number* is an integer in the range of 1 to 254 that identifies the boot service.
- *boot-server* is the IP address of the boot server for that boot service.
- *boot-file* is the name of the boot file that is read from your `/home/pxeboot` directory.
- *label* is the text string that is displayed when the boot menu is invoked by pressing the F8 key.

For example:

```
ip_addr=192.168.0.1
prompt=Press [F8] for menu...
prompt_timeout=10
service=1,192.168.0.1,pxelinux.0,Linux
service=2,192.169.0.1,nbp.unknown,Solaris
```

6. **Start the neopxe daemon by running the following command:**

/usr/local/sbin/neopxe

Configuring the NFS Service

Complete the following steps on your DHCP server.

1. **Determine whether the NFS service package is already installed on the server by typing the following command:**

   `# rpm -qa | grep nfs-utils`

2. **If the NFS server package is not listed, insert the Red Hat Enterprise Linux CD 2, and type the following commands to mount the CD and install the package from the CD:**

   `# mount /dev/cdrom /mnt/cdrom`

   `# rpm -Uvh /mnt/cdrom/RedHat/RPMS/nfs-utils-*.rpm`

3. **Remove the CD from the server after you type the following command:**

   `# umount /dev/cdrom`

4. **Edit and save the** `/etc/exports` **file to add the following line to it:**

   `/home/pxeboot *(no_root_squash,no_subtree_check,insecure)`

5. **Start the NFS service by typing the following command:**

   `# service nfs start`

6. **Configure the server to always start the NFS service by typing the following command:**

   `# chkconfig nfs on`

Note – If you are using a DNS server, make sure that DNS entries exist for the range of addresses defined in the pxe subnet `dynamic-bootp` entry in the `dhcpd.conf` file.

If you are not using a DNS server, edit the `/etc/hosts` file to add the range of host addresses found in the pxe subnet `dynamic-bootp` entry in the `dhcpd.conf` file.

Disabling the Firewall

If you enabled firewall security when you installed Red Hat Enterprise Linux software on the system that will be your PXE server, complete the following steps to disable the firewall so that PXE clients can download from the server.

Note – When you disable the firewall protection on the system that is your PXE server, the security of the data on that server cannot be assured. If this server is networked outside of your local intranet, be sure to re-enable the firewall after downloading software to PXE clients.

---

1. **Stop the** `ipchains` **service by typing the following command:**

   ```
   # service ipchains stop
   ```

2. **Stop the** `iptables` **service by typing the following command:**

   ```
   # service iptables stop
   ```

3. **Stop the** `ipchains` **service from starting when you restart the server by typing the following command:**

   ```
   # chkconfig ipchains off
   ```

4. **Stop the** `iptables` **service from starting when you restart the server by typing the following command:**

   ```
   # chkconfig iptables off
   ```

Note – You might encounter error messages if the `ipchains` service is not installed on the server. You can safely ignore these messages.

Installing Red Hat Linux on the Target Sun Fire V20z Server

1. **Reboot the server when you have finished all of the configuration steps.**

2. **Refer to "Installing Red Hat Enterprise Linux 3 Software From a Network" on page 5 for instructions on completing the PXE installation.**

Preconfiguring Your Network to Support SuSE Linux Installation

The procedures provided in this appendix describe how to preconfigure your Linux network to support PXE installation of SuSE Linux software. These procedures assume that you already have a bootable server that is running the appropriate SuSE Linux operating system.

Note – Some of the following procedures might not be necessary if you confirm that the server packages are already in place and configured. You may be prompted for a UnitedLinux CD.

This task includes the following procedures:

- "Copying Files From the Documentation and Support Files CD" on page 42.
- "Configuring a DHCP Server" on page 42.
- "Installing Portmap" on page 43.
- "Configuring the TFTP Service" on page 44.
- "Installing and Configuring the neopxe Boot Server Daemon" on page 45.
- "Configuring the NFS Service" on page 47.
- "Disabling the Firewall" on page 47.

Required Items

Preconfiguring your network for PXE installation requires the following items.

- A SuSE Linux Enterprise 8 server (for SuSE Linux Enterprise 8 network installation) or SuSE Professional 9.0 server (for SuSE Professional 9.0 network installation) equipped with:
  - A CD-ROM or DVD-ROM drive (necessary for DVD installation)
  - PS/2 keyboard
- Monitor
- SuSE Linux Media Set
- Sun Fire V20z Server Documentation and Support Files CD

Copying Files From the Documentation and Support Files CD

This section describes how to copy the PXE support files, which are required for PXE configurations, from the Sun Fire V20z Documentation and Support Files CD. You can also download the driver RPMs from the Sun Fire V20z server Downloads link at:

`http://www.sun.com/servers/entry/v20z/`

1. **Insert the Sun Fire V20z Documentation and Support Files CD into the DHCP/PXE server.**

2. **Create a temporary directory to copy the PXE support files to:**

   `# mkdir /tmp/`

3. **Type the following commands to copy the files to the** `/tmp/` **directory.**

   `# mount /media/cdrom`

   `# cp /media/cdrom/support/pxeboot/`*version*`-pxefiles.tar.gz /tmp/`

   Where *version* is `sles8` for SuSE Linux Enterprise Server 8 and `suse9` for SuSE Linux Professional 9.0 software.

4. **Uncompress and extract the contents of the tar file into the** `/tmp/` **directory by typing the following command:**

   `# tar -zxf /tmp/` *version*`-pxefiles.tar.gz`

   When you extract the file, a directory with all required files is created at `/tmp/sles8-pxefiles/` or `/tmp/suse9-pxefiles/`

Configuring a DHCP Server

Complete the following steps on the server that will be your DHCP server.

1. **Power on the server and log in as superuser.**

2. **Determine whether the DHCP server package is already installed on the server by typing the following command:**

   `# rpm -qa | grep dhcp-server`

3. **If the DHCP server package is not listed, install the package using yast with the following command:**

   `# yast -i dhcp-server`

4. **Set up your DHCP configuration file (for example,** `/etc/dhcpd.conf`**) so that only PXEClient requests receive PXEClient responses.**

   Add the following entry to the DHCP configuration file. Refer to the `dhcp.conf` man page for more information.

   ```
   class "PXE" {match if substring(option vendor-class-identifier,
   0, 9) ="PXEClient"; option vendor-class-identifier "PXEClient";}
   ```

   Note – You can start with a sample DHCP configuration file in `/tmp/sles8-pxefiles` or `/tmp/suse9-pxefiles` directory.

5. *For SuSE Linux Professional 9.0 only*: **Edit the** `/etc/sysconfig/dhcpd` **file and be sure the** `DHCPD_INTERFACE` **is set to the interface that is connected to the network you are planning to run the PXE server.**

   For example, if you are using Ethernet interface 0, the `DHCPD_INTERFACE` variable would be set as follows:

   ```
   DHCPD_INTERFACE="eth0"
   ```

6. **Start the DHCP service by typing the following command:**

   ```
   # /etc/init.d/dhcpd start
   ```

7. **Configure the server to always start DHCP by typing the following command:**

   ```
   # chkconfig dhcpd on
   ```

Installing Portmap

Complete the following steps on your DHCP server.

1. **Determine whether the portmap server package is already installed on the server by typing the following command:**

   ```
   # rpm -qa | grep portmap
   ```

2. **If portmap is not listed, install the package using yast with the following command:**

   ```
   # yast -i portmap
   ```

Configuring the TFTP Service

Complete the following steps on your DHCP server.

1. **Determine whether the TFTP server package is already installed on the server by typing the following command:**

   # **rpm -qa | grep tftp**

2. **If the TFTP server package is not listed, install the package using yast with the following command:**

   # **yast -i tftp**

3. **Edit the file that corresponds to the appropriate version of SuSE Linux:**

   - *For SuSE Linux Enterprise 8*: Edit and save the /etc/inetd.conf file to make the following changes:

     - Locate and remove the comment before the tftp service.

     - Change the -s /tftpboot entry to -v -s /home/pxeboot.

   - *For SuSE Linux Professional 9.0*: Edit and save the /etc/xinetd.d/tftp file to make the following changes:

     - Change the -s /tftpboot entry to -v -s /home/pxeboot.

     - Change the disable attribute to no.

4. **Restart the inetd server by typing the following command:**

   - For SuSE Linux Enterprise Server 8:

     # **/etc/init.d/inetd restart**

   - For SuSE Professional 9.0:

     # **/etc/init.d/xinetd restart**

Installing and Configuring the `neopxe` Boot Server Daemon

Complete the following steps on your DHCP server. The `neopxe` server is designed for use with a DHCP server that is running on the same system.

1. **If a compiler is not installed on the server, use yast to install** `gcc` **with the following commands:**

   ```
   # yast -i gcc
   # yast -i make
   ```

2. **Type the following commands to install the** `neopxe` **boot server daemon on your system that is your DHCP server:**

   ```
   # cd /tmp/version-pxefiles/neopxe-0.2.0
   # ./configure
   # make
   # make install
   ```

   Where *version* is `sles8` for SuSE Linux Enterprise Server 8 and `suse9` for SuSE Linux Professional 9.0 software.

3. **Append the path** `/usr/local/sbin/neopxe` **to the** `rc.local` **file by typing the following command, making sure to use two greater-than signs:**

   ```
   # echo "/usr/local/sbin/neopxe" >> /etc/rc.d/boot.local
   ```

4. **Copy the PXE Linux image from the** `/tmp/` **directory by typing the following commands:**

   ```
   # mkdir /home/pxeboot
   # cp /tmp/version-pxefiles/pxelinux.0 /home/pxeboot
   ```

   Where *version* is `sles8` for SuSE Linux Enterprise Server 8 and `suse9` for SuSE Linux Professional 9.0 software.

5. **Configure the PXE Linux image by typing the following commands:**

   ```
   # mkdir /home/pxeboot/pxelinux.cfg/
   # touch /home/pxeboot/pxelinux.cfg/default
   ```

6. **Edit the** `/usr/local/etc/neopxe.conf` **configuration file, which is read by** `neopxe` **at startup.**

   - If the `/usr/local/etc/` directory doesn't exist, create it with the following command:

     # **`mkdir /usr/local/etc`**

   - If you need to create the `neopxe.conf` file, you can copy it from the `/tmp/sles8-pxefiles/neopxe-0.2.0/` or `/tmp/suse9-pxefiles/neopxe-0.2.0/` directory.

   Refer to the `neopxe.conf` man page for more information.

   A valid configuration file must have entries for each of the following lines, including at least one service line.

   ip_addr=*n.n.n.n*

   prompt=*boot-prompt-string*

   prompt_timeout=*timeout*

   service=*service-number,boot-server,boot-file,label*

   Where:

   - *n.n.n.n* is the IP address of your PXE server.
   - *boot-prompt-string* is the character string displayed during a network boot that prompts the user to press the F8 key for a boot menu.
   - *timeout* is the number of seconds the prompt is displayed before the server defaults to the first service for booting.
   - *service-number* is an integer in the range of 1 to 254 that identifies the boot service.
   - *boot-server* is the IP address of the boot server for that boot service.
   - *boot-file* is the name of the boot file that is read from your `/home/pxeboot` directory.
   - *label* is the text string that is displayed when the boot menu is invoked by pressing the F8 key.

   For example:
   ```
   ip_addr=192.168.0.1
   prompt=Press [F8] for menu...
   prompt_timeout=10
   service=1,192.168.0.1,pxelinux.0,Linux
   service=2,192.169.0.1,nbp.unknown,Solaris
   ```

7. **Start the neopxe daemon by running the following command:**

   # **`/usr/local/sbin/neopxe`**

Configuring the NFS Service

Complete the following steps on your DHCP server.

1. **Determine whether the NFS service package is already installed on the server by typing the following command:**

   `# rpm -qa | grep nfs-utils`

2. **If the NFS server package is not listed, install the package using yast by typing the following command:**

   `# yast -i nfs-utils`

3. **Edit and save the** /etc/exports **file to add the following line to it:**

   `/home/pxeboot *(sync,no_root_squash,no_subtree_check,insecure)`

4. **Start the NFS service by typing the following command, as appropriate:**

   `# /etc/inid.d/nfsserver start`

5. **Configure the server to always start the NFS service by typing the following commands:**

   `# chkconfig nfslock on`

   `# chkconfig nfsserver on`

Note – If you are using a DNS server, make sure that DNS entries exist for the range of addresses defined in the pxe subnet `dynamic-bootp` entry in the `dhcpd.conf` file.

If you are not using a DNS server, edit the /etc/hosts file to add the range of host addresses found in the pxe subnet `dynamic-bootp` entry in the `dhcpd.conf` file.

Disabling the Firewall

If a firewall is enabled on your PXE/DHCP server, make sure to disable it before attempting installing the PXE image onto the client system.

Note – When you disable the firewall protection on the system that is your PXE server, the security of the data on that server cannot be assured. If this server is networked outside of your local intranet, be sure to re-enable the firewall after downloading software to PXE clients.

Installing SUSE Linux on the Sun Fire V20z Target Server

1. **Reboot the server when you have finished all of the configuration steps.**

2. **Refer to the appropriate procedure to complete the installation.**
   - "Installing SuSE Linux Enterprise Server 8 Software From a Network" on page 14.
   - "Installing SuSE Linux Professional 9.0 Software From a Network" on page 26.