Installing SUSE Linux

Installing SUSE Linux is a simple process. The SUSE Linux YaST application (Yet another Setup Tool) walks you through the process, detects and configures your hardware, and generally takes charge. In this chapter, you learn how to complete a basic installation of SUSE Linux using the CDs included with this book.

At this stage of the game, you’re probably anxious to get started, but a brief introduction helps you make sure everything is ready. Then you can begin the installation and follow this chapter’s advice all the way through.

By the end of the chapter, you will have logged in for the first time, ready to use SUSE Linux.

Methods of Installing SUSE Linux

SUSE Linux can be installed on a workstation through a plethora of possibilities. The installation can be done from a central server, across the network, or using any of the media types available (CD ROM/DVD).

Because this book includes the operating system on accompanying media, we will focus on installing it using those. While the method is different with the other types of installation, most follow the same steps and you can easily find information specific to those installations on the website.
Preparing to Install from a CD-ROM or DVD

The media included with this book is bootable and will install SUSE Linux directly when you start your computer. The main thing you need to know before starting the process is whether your BIOS is set to boot from your CD-ROM or DVD-ROM drive.

**CAUTION**

Changing BIOS settings can be dangerous, and it’s not hard to make a computer unbootable with the wrong setting. Follow these instructions carefully and don’t change any other setting unless you know what you’re doing.

To check this, reboot your computer. Among the first things you see on your screen as the computer starts up is the method of accessing your BIOS settings. Often this is the Delete or Escape key; other times, it is one of the function keys at the top of the keyboard. Each BIOS manufacturer does things differently. Press this key as soon as you see it. Shortly, the settings will appear.

Look for a setting title called Boot Sequence, Boot Order, or something similar. This setting determines where the BIOS looks for a bootloader code that tells it the volume is bootable. The setting itself should look something like this if the CD-ROM is to be checked first:

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CD-ROM, C:, floppy
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**TIP**

Change the order accordingly if you are installing from DVD.

Every drive that may be bootable should be listed here. This order points first to the CD drive, then the hard drive (which may be identified as either IDE or SCSI instead of the Windows drive letter), and then the floppy. It’s possible that either the hard drive or the floppy may come first in the sequence. In this instance, you should adjust the setting so that the CD is checked before the hard drive. To change the setting, use the Tab key to highlight the Boot Sequence, then press Enter to change the setting. This process, again, varies from BIOS to BIOS. You should get a list of possible sequences from which you can choose, or you may have to select each drive in the order you want.

**NOTE**

Checking other drives before the hard drive will slow your boot time a few seconds, so you may want to reset the Boot Sequence after your SUSE Linux installation is completed.

Learn more about your BIOS and the boot process in Chapter 22, “Managing the Boot Process and Other Services.”

Select a sequence similar to the one listed in this section, and save your new choice. If the first SUSE Linux CD or the SUSE DVD is in the drive, it should now boot. If not, and
another operating system is installed, the computer may boot to that OS. If the computer boots to another OS, make sure the SUSE CD is in the drive and then restart your computer.

Installing SUSE Linux with YaST

The installation begins when you insert the first SUSE Linux CD into your drive and boot up. A menu appears with several startup choices (see Figure 3.1). Select Installation. YaST will identify and initialize the hardware it needs to begin, and then display the Novell Software License Agreement. Click I Agree to continue to the first installation screen. Select your preferred language from the extensive list.

![Boot Options](image)

FIGURE 3.1 Select an Installation option from this initial screen.

Initial Installation Settings

YaST loads the kernel modules for your hard drive and then displays a list of Installation Settings (see Figure 3.2). Review carefully all the settings for accuracy and click either the heading of each section or the Change button on the bottom to correct any errors.

TIP

If you have a two-button mouse, notice that YaST will automatically emulate a three-button mouse. This lets you access many middle-button features by clicking both buttons at the same time.
YaST autodetects your hardware and makes some default choices about your installation. Edit any default selection by clicking the heading or using the Change button.

**Partitioning**

You learned most of what you need to know about how disks are partitioned under Linux in Chapter 2, “Preparing to Install SUSE Linux.” YaST creates a Root and swap partition by default. If you want to add partitions or use a different file system than ReiserFS, select the Partitioning heading and make your changes.

**TIP**

If YaST detects the presence of another operating system, it will ask whether you want to replace that OS with SUSE Linux or dual boot both. YaST will use the GNU Parted partitioning tool to shrink the existing partition and allow SUSE Linux to install. If you have two physical hard drives and want to install Linux on the second drive, it will format that drive accordingly.


**Setting Your Time Zone**

Use the Time Zone section to identify your location so that the system time will be correct for your time zone. By default, time is marked using a 24-hour clock, rather than the AM/PM divide. You can change this in YaST later. See “Setting Date and Time” in Chapter 4, “Further Configuration with YaST2 and SaX2.”
Installing Software Packages

By default, YaST installs the Standard System with KDE, a selection of basic applications and the K Desktop Environment. If you prefer the other leading Linux desktop environment, you can install the Standard System with GNOME. Click the Software section of the Installation Settings, and click the appropriate button.

Click Accept when you are ready to install the base system. Depending on the software packages you selected, you may have to view and accept other license agreements for certain applications (for example, the Macromedia Flash player).

**CAUTION**
YaST will also warn you that it is formatting a partition and that any data on that partition will be destroyed. This gives you one more chance to turn back in case you have data on your computer that you want to preserve. Click Install to begin the process.

YaST formats the designated partition for the data drive and the swap partition and then begins installing the operating system and the designated software packages. Depending on the amount of software to be installed and the speed of your processor and CD drive, the time it takes to do this will vary. The right side of your screen contains a progress bar that gives you a total estimate of the time remaining.

If you are installing from the CD set (rather than from the DVD), you’ll see a few horizontal bars crossing the progress bar; they represent the approximate time until you’ll have to swap CDs again. Feel free to walk away from the keyboard while the installation proceeds. The DVD contains all the files on the single disk and frees you from the worry of needing to be ready to swap media as needed.

**NOTE**
To pass the time while YaST is installing, you can watch the slide show, which (as is traditional in lengthy software installations) presents a rundown of some of the new features in this version, or click the Details tab (see Figure 3.3) to see the list of packages being installed (and an overview of the number of packages installed from each CD).

After the base system is installed, YaST reboots your computer to make sure things are in good shape to begin (you will have a 10-second warning when you can stop the reboot, if necessary). Leave the first CD in the drive for the reboot. When the reboot is complete, the Package Installation screen appears, and you’ll be asked to insert the second CD.

Packages will continue to install, and the blue progress bar will continue to shrink. You’ll be asked again to swap out CDs occasionally until the installation is complete.

Creating the root User

When all the packages have been installed, you will become the system administrator for the first time. Your task is to create the first user on the system: root. This is done simply enough: In UNIX and Linux, a user equals a password.
FIGURE 3.3  View the details of the software package installation in this screen.

The first password you create, for the root user, is by far the most important. The root user has complete control over the system, for good or evil. Therefore, the root password must be secure and easy to remember. If you forget the root password, it becomes extremely difficult (although not impossible) to access any system files. At minimum, the root password must be at least five characters and should have a mixture of letters, cases, and numbers.

**TIP**


Click Expert Options to choose the encryption method for your passwords (see Figure 3.4). By default, SUSE Linux uses the DES standard, but it is much safer to use the Blowfish encryption standard because it allows for up to 72 characters in the password string. This is much harder to crack randomly. When you have typed and confirmed the root password, click Next.

**Configuring Network and Internet Connections**

Next, YaST checks for networking hardware: Ethernet cards, dial-up modems, or high-speed connections. You have the option to configure these yourself later (click Skip Configuration), but it is a good idea to set this up during the installation. YaST will use this connection to go online to update your installation in the next step.
FIGURE 3.4  Strengthen the encryption of your Root password by clicking Expert Options.

Figure 3.5 shows the default network settings screen. As before, if YaST failed to detect all your networking hardware, or misidentified something, click the appropriate heading or use the Change button to make adjustments.

NOTE

If more than one network interface card (NIC) is found, you may be asked to configure the second card. This might be the case if this computer is going to function as a router or Internet gateway. One card, labeled eth0, will be the first active interface when you boot.

Note that the SUSE Firewall is turned on by default. This is a good thing, unless you are already protected by a hardware router, which is included with many Digital Subscriber Line (DSL) accounts, and in business network settings. Click Next to confirm the network settings.

YaST tests your connection as you set it up. It connects to a nearby SUSE Linux update server to retrieve the latest Release Notes and any updates to your installed software. If you have any problem connecting, review the network settings and make sure everything is correct.

TIP

Learn more about your Internet connection in Chapter 12, “Connecting to the Internet.”
Creating a User

Now it’s time to set up your first user—you! As with the root user, the central task in creating a user on a Linux system is to make a password. YaST first asks whether this user will log in locally or from another computer, using either the Lightweight Directory Access Protocol (LDAP), the Network Information Service (NIS), or from a Windows PC through Samba. In all likelihood, the first user on the system will log in locally on this PC; select this option and click Next.

Type the relevant information into the Add a New Local User screen (see Figure 3.6), including the user password. This should always be different from the root password, but use the same general rules. For further information and advice on New User settings, see “Setting Up User Accounts in YaST” in Chapter 19. Click Next to create this and all other system users.

YaST now runs the SUSEConfig file to add the user and confirm the other changes made to this point. This can take a minute or longer, depending on your system. It then displays the Release Notes, with current information on new features and known problems. Click Next when you have reviewed this information.
FIGURE 3.6 Add your first user (usually you) in this screen.

Configuring Hardware for the X Window System

The last step in the installation is identifying and configuring the hardware you'll need for the graphical X Window System and your chosen desktop environment. YaST autodetects your graphics card, connected printers, sound card, and a few miscellaneous peripherals. Again, if the autodetection failed or misidentified a card, select the appropriate heading or click the Change button and make any necessary changes. Click Next when you're ready. YaST confirms the changes and writes the default configuration files.

You will now see the Congratulations! screen (see Figure 3.7), signifying the end of the installation process. You are ready to log in for the first time. If you want to check other settings or add more software packages next, check the Start YaST Control Center box before clicking Finish. You may remove your CD at this time.

The system will then begin the boot process, finishing by displaying the green screen with the login prompt.
You’ve finished!

Logging In and Shutting Down the First Time

When you boot your SUSE Linux system after running the startup scripts, your Linux kernel will display the login screen (see Figure 3.8). You’ll be asked to type the username and the password. Only rarely should you log in as root, and then only for specific purposes.

Looking in the lower-left corner of the login screen, you’ll see that you have some options in logging in. You can change the language of the display manager by selecting your language from the menu. By clicking the appropriate choice, you can choose to shut down or reboot your computer instead of logging in.

The Session menu allows you to change your desktop environment for this session if you have other window managers or desktop environments installed. Although this is probably not the case in your first login, if you like variety in your computing experience, you may want to play with this function later.

TIP

For the first login, it is always recommended to keep it as simple as possible. Your primary purpose is to make sure that the installation was successful and there are no problems. After you have assured yourself that this is the case, you can get more creative with login choices.
FIGURE 3.8 Log in here.

When you have entered your username and password, your selected desktop environment loads. This is KDE by default or GNOME by selection. Take a look around; click and right-click to your heart's content. Visit the Novell SUSE website and get comfortable. You should then log out and reboot your system to make sure everything is in proper order.

Find the Logout command from the desktop menu and click Restart Computer. That's all there is to it. The computer will shut down and then restart.

Welcome to Linux! You have now begun the journey.

References

- http://www.novell.com/linux/suse—Always the place to start if you want to know something about SUSE Linux.
- http://tldp.org/HOWTO/Installation-HOWTO/index.html—From 2002, this Linux Installation HOWTO was written by programming guru Eric S. Raymond.
- http://www.pcworld.com/howto/article/0,aid,107870,00.asp—This article from PC World magazine runs through various BIOS settings in a more popular style.