Red Hat Linux 6.1

The Official Red Hat Linux Installation Guide

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Red Hat, Inc.
2600 Meridian Parkway Durham NC 27709 US 919-547-0012 1-888-733-4281 919-547-0024
docs@redhat.com 13588 Research Triangle Park NC 27713

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Preface

Welcome! And thank you for your interest in Red Hat Linux We have what we think is the best Linux distribution on the market today, and we work hard to keep it that way.

Red Hat Linux 6.1 is the latest in a long line of software from Red Hat. We hope you enjoy using Red Hat Linux as much as we've enjoyed bringing it to you.

One of the difficulties many users new to Linux encounter is the necessary "learning curve," which accompanies any new experience. After all, many new users are accustomed to working "just so"; having to make some adjustments can cause a bit of frustration.

Have patience, and you'll begin to see the flexibility and power that millions of Linux users have already discovered.

Installing an operating system can take some time. The brains behind the brawn of your computer, an OS isn't exactly like installing a single application. Installing Red Hat Linux takes time, patience, knowledge of your hardware components -- and sometimes, a little luck.

We hope our installation and user documentation will help you throughout these important first steps. If this is your first time using or installing Linux, please read through this entire manual before attempting your installation. You might also want to make notes of your hardware components and refer to http://www.redhat.com/corp/support/hardware/index.html to make certain that your computer's hardware is compatible.

If you use another operating system, you should pay particular attention to partitioning details outlined in the *Official Red Hat Linux Reference Guide*.

And please register your product as soon as possible. Registration of Red Hat Linux 6.1 entitles you to installation support, preferred FTP access and more. Sign up at www.redhat.com/now.

Thanks again for supporting Red Hat. We hope you have an enjoyable experience using Red Hat Linux.

An Overview of This Manual

This manual is organized to guide you through the process of installing Red Hat Linux with ease. Toward that goal, let's take a glance at each chapter to help you get acclimated:

Chapter 1, *New Features of Red Hat Linux 6.1*:

contains information concerning new functionality that has been added to Red Hat Linux 6.1.

Chapter 2, *Before You Begin*:

discusses tasks you should perform prior to starting the Red Hat Linux installation.

Chapter 3, *Starting the Installation*:

contains detailed instructions for starting the Red Hat Linux installation process.

Chapter 4, *Graphical User Interface Installation*:

covers start to finish instructions on installing Red Hat Linux from a CD-ROM using the new graphical interface.

Appendixes:

discusses Red Hat's support offerings and a tutorial on making boot disks.

Quick Start Information

Those of you that have installed Red Hat Linux/Intel before and are in a hurry to get started need only boot from a boot diskette (or the Red Hat Linux/Intel CD-ROM, if your computer supports a bootable CD-ROM). There are three separate boot disks, one for CD-ROM and hard drive installations, one for NFS, FTP, and HTTP installations, and one for PCMCIA device installations [1]. Next, select the desired installation method. If you will be using a PCMCIA device during the installation, you will need to use the PCMCIA boot disk [2].

If you are attempting to install Red Hat Linux on an Alpha or a SPARC, you really should read Chapter 2, *Before You Begin* as well as the *Official Red Hat Linux Alpha/SPARC Installation Addendum*. They will refer you to information specific to your non-Intel-based system.

Upgrading from a Prior Version of Red Hat Linux

The installation process for Red Hat Linux 6.1 includes the ability to upgrade from prior versions of Red Hat Linux (2.0 through 6.0, inclusive) which are based on RPM technology. Upgrading your system installs the modular 2.2.x kernel as well as updated versions of the

[1] If you need a boot disk for network type installations, you will have to create one. See Section 2.2, *Need a Network Boot Disk?* for that information.

[2] If you will be using a PCMCIA device (a laptop for instance) during the install you should create a PCMCIA boot disk. Section 2.3, *Need a PCMCIA Boot Disk?* will describe how that disk is made.

packages that are installed on your machine. The upgrade process preserves existing configuration files using a `.rpmsave` extension (e.g., `sendmail.cf.rpmsave`) and leaves a log telling what actions it took in `/tmp/upgrade.log`. As software evolves, configuration file formats can change, so you should carefully compare your original configuration files to the new files before integrating your changes.

A Word From the Developers

We would like to thank all our beta testers for entrusting their systems to early versions of Red Hat Linux and for taking the time to submit bug reports from the front, especially those of you who have been with Red Hat since the "Halloween" release and earlier. We would also like to thank Linus Torvalds and the hundreds of developers around the world for creating, truly, one of the wonders of distributed development.

And, again, we'd like to thank *you* for your interest in Red Hat Linux!

The Red Hat Development Team

Notes from the Editor

Our evolutionary process of expanding the scope of this Official Red Hat Linux Installation Guide continues. As before, we've updated the chapters related to the actual installation process, but we've narrowed down the scope of the installation guide to only cover the most common installation method (installing from a CD-ROM). Other installation methods are covered in the *Official Red Hat Linux Reference Guide*. We've also updated the New Features chapter to reflect all the good stuff that's been added to Red Hat Linux 6.1. We consider this to be "business as usual."

We Need Feedback!

If you spot a typo in the Installation Guide, or if you've thought of a way to make this manual better, we'd love to hear from you! Be sure to mention the manual's identifier:

`Inst(EN)-6.1-Print-RHI (10/99)`

That way we'll know exactly which version of the guide you have.

Please send mail to:

`docs@redhat.com`

If you have a suggestion, try to be as specific as possible when describing it. If you've found an error, please include the section number and some of the surrounding text so we can find

it easily. We may not be able to respond to every message sent to us, but you can be sure that we'll be reading them all!

I Couldn't Have Done it Without…

Many thanks go out to the past authors of this manual. A great deal of their work is still here. Thanks also go out to the developers and testers who have patiently listened to my questions and even more patiently given me answers.

A "BIG" thank you also goes out to the members of the documentation team. Paul Gallagher, our editor, has done a wonderful job of proof reading and editing this manual. Edward Bailey, "fearless leader" and head of the documentation team, has kept me up to speed and helped push me in the right direction. Carole Williams, resident chocolate lover, has been more than helpful getting the Support FAQ of this manual together, as well as patiently piecing together parts of the Official Red Hat Linux Alpha/SPARC Installation Addendum. Wayne Sherrill, the newest addition to our team, has put together the text mode installation information that can be found in the Official Red Hat Linux Reference Guide.

Thanks are also due to all the readers of past Installation Guides. Without their corrections, suggestions and even occassional praises, I wouldn't know if I were on the right track. Your feedback has been incorporated as much as possible (pagecount and deadlines permitting). Please keep the feedback coming.

Finally, thanks goes out to the support group at Red Hat for their insightful suggestions regarding this manual. If you find yourself going through this *Official Red Hat Linux Installation Guide* with greater ease, a large part of that is due to all of their effort.

Thank you to everyone at Red Hat for your help and support.

Sandra A. Moore & The Red Hat Documentation Team

1 New Features of Red Hat Linux 6.1

This chapter describes features that are new to Red Hat Linux 6.1 installation process. If you are interested in reading about non-installation-related new features, please refer to the *Official Red Hat Linux Reference Guide*.

1.1 Installation-Related Enhancements

Here is a list of the many changes which have been made in order to make the Red Hat Linux installation process even easier:

- GUI Installation Mode
- Customizable Workstation-Class Installations
- More Flexible Workstation- and Server-Class Installations
- New Scriptable Kickstart Mode
- User Account Creation
- Software RAID Support
- Up Front Configuration

Let’s take a look at each one in more detail.

1.1.1 GUI Installation Mode

The most notable change in Red Hat Linux 6.1 is the new GUI format of the installation. Not only will you have the convenience of using your mouse throughout the installation process, the screens themselves are more intuitive. Help screens have also been added to make the installation process go more smoothly.

1.1.2 Customizable Workstation-Class Installations

New to the installation is the ability to choose a more customized workstation-class intallation. You can choose from a standard X Window System and GNOME workstation-class installation or substitute KDE for GNOME. These new options help to guarantee all of the desired packages are installed and allow you the convenience of a simple installation.

1.1.3 Flexible Workstation- and Server-Class Installations

Both workstation- and server-class installations have been improved with the ability to manually partition your hard drives. Rather than have the installation's preset partitions created, you can now set up your own desired partitions as you would do in a custom-class installation.

1.1.4 New Scriptable Kickstart

Kickstart has been rewritten to a new scriptable format. Now, you can pass kickstart a Python object and dynamically configure your kickstart installation. For those of you familiar with kickstart, you are sure to be pleased with its new features and the way it has been rewritten.

1.1.5 User Account Creation

During the new Red Hat Linux 6.1 installation, you are now able to set up user accounts. In the account creation portion of the installation, you can set your machine's root password, as well as create the various user accounts you may need.

1.1.6 Software RAID Support

New to Red Hat Linux is the ability to set up RAID devices (available only for multiple hard drives) when you set up your partitions during the installation. We only recommend this option if you have previous RAID experience. For more information about RAID, please refer to the *Official Red Hat Linux Reference Guide*.

1.1.7 Up Front Configuration

Up front configuration allows you to completely configure your Red Hat Linux system before making any actual changes (ex: partitioning or installing packages) to your hard drive(s). The new installation program writes all configuration files to your machine's memory. Only after X configuration has been completed will changes be made to your system.

2 Before You Begin

While installing Red Hat Linux is a straightforward process, taking some time prior to starting the installation can make things go much more smoothly. In this chapter, we'll discuss the steps that should be performed before you start the installation.

Please Note

If you are currently running a version 2.0 (or greater) Red Hat Linux system, you can perform an upgrade. Skim this chapter to review the basic issues relating to installation, and read the following chapters in order, following the directions as you go. The upgrade procedure starts out identically to the installation procedure; you will be directed to choose an installation or upgrade after booting the installation program and answering a few questions.

There are five tasks you should perform prior to installing Red Hat Linux:

1. Make sure you have sufficient documentation to effectively use your Red Hat Linux system after the installation (please refer to the *Official Red Hat Linux Reference Guide* for more information).
2. Make sure you have access to the Red Hat Linux components required for installation.
3. Make sure you know your computer's hardware configuration and networking information (see the *Official Red Hat Linux Reference Guide* for more help).
4. Decide, based on the first two tasks, what method you will use to install Red Hat Linux.
5. Determine where on your hard drive(s) Red Hat Linux will reside.

Let's start by making sure you have the correct components needed for your Red Hat Linux installation.

2.1 Getting the Right Red Hat Linux Components

If you've purchased the Red Hat Linux boxed set, you're ready to go! However, mistakes occasionally happen, so now is a good time to double-check the contents of your boxed set. If you haven't purchased a Red Hat Linux boxed set, skip to *No Boxed Set? No Problem!* in Section 2.1.10.

2.1.1 Contents of the Red Hat Linux Boxed Set

The Red Hat Linux boxed set contains the following items:

- The *Official Red Hat Linux Installation Guide*, available in all boxed sets.
- The *Official Red Hat Linux Getting Started Guide*, available in the Deluxe and Professional boxed sets.
- The *Official Red Hat Linux Reference Guide*, avaliable in all boxed sets.
- The *Official Red Hat Linux Alpha/SPARC Installation Addendum*, only in Red Hat Linux/Alpha and Red Hat Linux/SPARC boxed sets.
- Red Hat Linux CDs 1 and 2.
- The Linux Applications Library, only in Red Hat Linux/Intel Deluxe and Professional boxed sets.
- Boot diskette, only in Red Hat Linux/Intel boxed sets.
- License and Registration information.

Let's take a quick look at each item:

2.1.2 The Official Red Hat Linux Installation Guide

The *Official Red Hat Linux Installation Guide* is what you're currently reading. It contains the information necessary to install Red Hat Linux.

2.1.3 The Official Red Hat Linux Getting Started Guide

The *Official Red Hat Linux Getting Started Guide* contains information on what to do after the installation has taken place. We believe it is both well written and informative, and will guide you through the necessary steps of actually using your system once the installation is in place.

The *Official Red Hat Linux Getting Started Guide* covers topics ranging from learning the basics of your system, to navigating your system, to GNOME, to connecting to the Internet.

The *Official Red Hat Linux Getting Started Guide* is availabe in the Deluxe and Professional boxed sets, but not in the Standard boxed set.

2.1.4 The Official Red Hat Linux Reference Guide

The *Official Red Hat Linux Reference Guide* contains information on configuring your system, text-mode installations, package list information, and more. Once you have installed your system and mastered the basics of navigation, you can use this guide to help you configure and fine tune Red Hat Linux to your specific needs.

2.1.5 The Official Red Hat Linux Alpha/SPARC Installation Addendum

Alpha, SPARC

The *Official Red Hat Linux Alpha/SPARC Installation Addendum* contains information of interest to owners of Alpha- and SPARC-based computer systems that will make installation of Red Hat Linux more straightforward. (The *Official Red Hat Linux Alpha/SPARC Installation Addendum* is only included in Red Hat Linux/Alpha and Red Hat Linux/SPARC boxed sets.)

2.1.6 CDs 1 and 2

These compact discs contain the entire Red Hat Linux distribution, including source code. CD 1 contains all the binary packages built for your type of computer (Intel, Alpha, or SPARC). CD 2 contains the source packages that were used to build the binary packages on CD 1.

2.1.7 Linux Applications Library

Intel

This compact disc library contains demonstration versions of a number of commercial Linux software products. If you purchased Red Hat Linux/Intel Deluxe, you will receive the workstation edition. If you purchased Red Hat Linux/Intel Professional, you will receive the workstation and server editions of the Linux Applications Library. For more information, please refer to the `README` file in this library.

Please Note

This CD-ROM library and its contents are *completely unsupported* by Red Hat, Inc.. All questions and issues concerning any software in this pack should be directed to the responsible company, and *not* Red Hat, Inc.

2.1.8 Boot Disks

Intel

This diskette is used to start the installation process for Red Hat Linux/Intel. Depending on your computer's configuration and the type of installation you select, you may or may not need this boot disk. Instead, you may require a PCMCIA or a Network boot disk, again depending on your system's hardware configuration, and the installation method you choose. When we discuss the different installation methods later in this chapter, we'll explain which diskettes are needed for each type of installation, and give you instructions for producing any diskettes you require.

Alpha, SPARC

SPARC and Alpha owners should refer to the *Official Red Hat Linux Alpha/SPARC Installation Addendum* for information on which diskettes are required.

2.1.9 License and Registration Information

As a Red Hat Linux 6.1 owner, you are entitled to the benefits of support once you have registered. Our new registration program offers you free priority FTP access and your own home base at www.redhat.com.

Sign up by going to www.redhat.com/now and entering your **personal product ID** found in your Red Hat Linux boxed set. Once that has been done, you can go to www.redhat.com/support for further support-related information.

2.1.10 Missing Something?

If you've purchased the Official Red Hat Linux boxed set from Red Hat, Inc., (or one of its distributors) and you're missing one or more of the items listed above, please let us know!

One thing to keep in mind is that Red Hat partners with companies (international and domestic) so that we can make Red Hat Linux available to you in the most convenient form. Because of this, you might find that your Red Hat Linux boxed set may not have been actually produced by Red Hat.

Not sure how to identify our official boxed set? Here's how: The bottom of our box has an ISBN number next to one of the bar codes. That ISBN number should be in this form:

1-58569-*xx*-*y*

(The *xx* and *y* will be unique numbers.) If your box has an ISBN number in this form, and you're missing something, feel free to call us at 1-888-733-4281 (+1-919-547-0012 outside the USA), or to send mail to `presales@redhat.com`.

If your box has a different ISBN number (or none at all), you'll need to contact the company that produced your boxed set. Normally, third-party producers will include their logo and/or contact information on the outside of the box; an official Red Hat Linux boxed set has only our name and contact info on the outside.

If your Red Hat Linux boxed set is complete, please skip ahead to Section 2.1.11, *Checking for Updated Diskette Images and Manual Information*.

No Boxed Set? No Problem!

Of course, not everyone purchases a Red Hat Linux boxed set. It's entirely possible to install Red Hat Linux using a CD created by another company, or even via FTP. In these cases, you may need to create one or more diskettes to get started.

Intel

For people installing Red Hat Linux/Intel, you may need a boot disk, or if using a PCMCIA device during the installation (such as a laptop), a PCMCIA boot disk. It may also be possible to start the installation directly from the CD. We'll discuss this in more detail when we outline the various installation methods.

Alpha, SPARC

People with Alpha-based systems should refer to the *Official Red Hat Linux Alpha/SPARC Installation Addendum* for additional information on the diskettes they may need.

2.1.11 Checking for Updated Diskette Images and Manual Information

From time to time, we find that the installation may fail, and that a revised diskette image is required in order for the installation to work properly. In these cases, we make special images available via the Red Hat Linux Errata.

Since this is a relatively rare occurrence, you will save time if you try to use the standard diskette images first, and then review the Errata only if you experience any problems completing the installation.

There are also times where the manuals may have significant errors in documentation (due to changing installation code or other factors). Documentation updates are also available via the Red Hat Linux Errata.

There are two ways to review the Errata:

1. World Wide Web -- By pointing your Web browser at http://www.redhat.com/errata, you can read the Errata on-line, and download diskette images easily.
2. Electronic Mail -- By sending an empty mail message to `errata@redhat.com`, you will receive a mail message containing a text listing of the complete Errata. Also included are URLs to each updated package and diskette image in the Errata. By using these URLs, you can then download any necessary diskette images. Remember to use binary mode when transferring a diskette image!

For now, concentrate only on the Errata entries that include new diskette images (the file-names always end in `.img`). If you find an entry that seems to apply to your problem, get a copy of the diskette images, and create them using the instructions in Appendix B, *Making Installation Diskettes*.

2.2 Need a Network Boot Disk?

If you are performing an installation via FTP, HTTP, or NFS you will need to create your own network boot disk. The network boot disk image file is `bootnet.img`, and is located in the `images` directory on your Red Hat Linux/Intel CD. Please turn to Appendix B, *Making Installation Diskettes* and follow the instructions there. Then, return here, and read on.

2.3 Need a PCMCIA Boot Disk?

Intel

This section is specific to Intel-based computers only. If you are using an Alpha or SPARC computer, please skip ahead to Section 2.5, *Disk Partitions*.

Here's a checklist that you can use to see if you'll need to create a PCMCIA boot disk:

- Installing from a PCMCIA-Connected CD-ROM -- If you'll be installing Red Hat Linux from a CD-ROM, and your CD-ROM drive is attached to your computer through a PCMCIA card, you'll need a PCMCIA boot disk.
- Installing using a PCMCIA Network Card -- If you will be using a PCMCIA network adapter during the installation, you may need a PCMCIA boot disk.

If you need a PCMCIA boot disk, you will have to make one. The PCMCIA boot disk image file is `pcmcia.img`, and is located in the `images` directory on your Red Hat Linux/Intel CD. Please turn to Appendix B, *Making Installation Diskettes* and follow the instructions there. Then, return here, and read on.

2.4 Installation Classes

Red Hat Linux includes three different classes, or types of installations. They are:

- Workstation
- Server
- Custom

These classes give you the option of simplifying the installation process (with some potential for loss of configuration flexibility), or retaining complete flexibility with a slightly more complex installation process. Let's take a look at each class in more detail, so you can see which one is right for you.

Only the custom-class install allows you complete flexibility. The workstation- and server-class installations go through the installation process for you and omit certain steps. However, you now can choose to partition your drives manually in a workstation- or server-class installation.

2.4.1 The Workstation-Class Installation

A workstation-class installation is most appropriate for you if you're new to the world of Linux, and would like to give it a try. By answering very few installation questions, you can be up and running Red Hat Linux in no time!

What Does It Do?

If you choose *not* to partition manually, a workstation-class installation removes any Linux-related partitions on all installed hard drives (and uses all free unpartitioned disk space) to create the following partitions:

A 64MB swap partition.

A variable-sized (the exact size is dependent on available disk space) root partition (mounted as /) in which all other files are stored.

Intel

A 16MB partition (mounted as `/boot`) in which the Linux kernel and related files reside.

Alpha

A 2MB partition (mounted as `/dos`) in which the MILO boot loader is located.

This approach to disk partitioning results in the simplest filesystem configuration possible.

Please Note

You will need approximately 600MB of free disk space in order to perform a workstation-class installation.

If your system already runs Windows (Windows 3.1/95/98), a workstation-class installation will automatically configure your system to dual-boot using LILO.

A workstation-class installation will remove *all* existing Linux partition on all hard drives in your system. It will also attempt to set up a dual boot environment automatically on your system, if another OS is present.

2.4.2 The Server-Class Installation

A server-class installation is most appropriate for you if you'd like your system to function as a Linux-based server, and you don't want to heavily customize your system configuration.

What Does It Do?

If you choose *not* to partition manually, a server-class installation removes *ALL existing partitions* on *ALL installed hard drives*, so choose this installation class only if you're sure you have nothing you want saved! When the installation is complete, you'll find the following partitions:

A 64MB swap partition.

A 256MB partition (mounted as `/`).

A partition of at least 512MB (mounted as `/usr`).

A partition of at least 512MB (mounted as `/home`).

A 256MB partition (mounted as `/var`).

Intel

A 16MB partition (mounted as `/boot`) in which the Linux kernel and related files are kept.

Alpha

A 2MB partition (mounted as `/dos`) in which the MILO boot loader is kept.

This approach to disk partitioning results in a reasonably flexible filesystem configuration for most server-class tasks.

Please Note

You will need approximately 1.6GB of free disk space in order to perform a server-class installation.

A server-class installation will remove *ALL existing partitions of ANY type on ALL existing hard drives of your system*. All drives will be erased of all information and existing operating systems, regardless if they are Linux partitions or not!

2.4.3 The Custom-Class Installation

As you might guess from the name, a custom-class installation puts the emphasis on flexibility. During a custom-class installation, *you* choose how disk space should be partitioned. You have complete control over which packages will be installed on your system. You also determine whether you'll use LILO to boot your system.

2.4.4 Behind the Scenes of a Custom-Class Installation

This section covers the installation steps that are *not* seen by performing a workstation- or server-class installation.

This may help those of you who are trying to decide which installation class will better suit your needs. If you think you'll have trouble performing any of the tasks on this list, you should not perform a custom-class installation without reading through this manual and clarifying any questions you may have.

- Creating Partitions -- In the custom-class installation it is necessary for you to specify where you want Red Hat Linux to be installed. This is no longer specific to custom-class installations as you now have the *option* to manually partition your hard drives in the workstation- and server-class installations.
- Formatting Partitions -- All newly created partitions must be formatted. Any partitions that contain old data (data you no longer need or want) should be formatted. If you chose to manually partition your workstation- or server-class installation, you will need to choose which partitions to format.
- Selecting and Installing Packages -- This is performed after your partitions have been configured and selected for formatting. Here you may select groups of packages, individual packages, a combination of the two, or choose an "everything" install.

- LILO Configuration -- In a custom-class installation, you are able to choose where you would like LILO to be installed (either on the master boot record (MBR) or on the first sector of your root partition), or you can choose not to install LILO at all.

2.5 Disk Partitions

Nearly every modern-day operating system uses disk partitions, and Red Hat Linux is no exception. When installing Red Hat Linux, it will be necessary to work with disk partitions. If you have not worked with disk partitions before (or would like a quick review of the basic concepts) please read the *An Introduction to Disk Partitions* appendix in the *Official Red Hat Linux Reference Guide* before proceeding.

Please Note

If you intend to perform a workstation- or server-class installation, and you already have sufficient *unpartitioned* disk space, you do not need to read this section, and may turn to Section 2.6, *A Note About Kernel Drivers*. Otherwise, please read this section in order to determine the best approach to freeing disk space for your Red Hat Linux installation.

In order to install Red Hat Linux, you must make disk space available for it. This disk space needs to be separate from the disk space used by other operating systems you may have installed on your computer, such as Windows, OS/2, or even a different version of Linux. This is done by dedicating one or more **partitions** to Red Hat Linux.

Before you start the installation process, one of the following conditions must be met:

- Your computer must have enough *unpartitioned* disk space available to install Red Hat Linux.
- Your computer must have one or more partitions that may be deleted, thereby freeing up enough disk space to install Red Hat Linux.

If you are not sure that you meet these conditions or want to know how to free up more space for your Red Hat Linux installation, please refer to the *Official Red Hat Linux Reference Guide*.

2.6 A Note About Kernel Drivers

During installation of Red Hat Linux, there are some limits placed on the filesystems and other drivers supported by the kernel. However, after installation there is support for all filesystems available under Linux. At installation time the modularized kernel has support for (E)IDE devices, (including ATAPI CD-ROM drives), SCSI adapters, and network cards. Additionally, all mice, SLIP, CSLIP, PPP, PLIP, FPU emulation, console selection, ELF, SysV IPC, IP forwarding, firewalling and accounting, reverse ARP, QIC tape and parallel printers, are supported.

Please Note

Because Red Hat Linux supports installation on many different types of hardware, many drivers (including those for SCSI adapters, network cards, and many CD-ROMs) are not built into the Linux kernel used during installation; rather, they are available as modules and loaded as you need them during the installation process. If necessary, you will have the chance to specify options for these modules at the time they are loaded, and in fact these drivers will ignore any options you specify for them at the `boot:` prompt.

After the installation is complete you may want to rebuild a kernel that includes support for your specific hardware configuration. See the *Official Red Hat Linux Reference Guide* for information on building a customized kernel. Note that, in most cases, a custom-built kernel is not necessary.

2.7 If You Have Problems…

If you have questsions or problems before, during, or after the installation, check the list of Red Hat Linux Frequently Asked Questions. You can find the FAQ at:

http://www.redhat.com/knowledgebase/index.html

In many cases, a quick check of the FAQ can quickly get you back in action.

2.8 One Last Note

Please read all of the installation instructions *before* starting; this will prepare you for any decisions you need to make and should eliminate potential surprises.

2.9 System Requirements Table

Please use the space provided to fill in your system settings and requirements. This will help you keep a record of your current system, as well as make the installation process easier. (Refer to http://www.redhat.com/corp/support/hardware/index.html for the most current list of Red Hat Linux compatible hardware or the *Official Red Hat Linux Reference Guide* for more hardware information.)

Table 2–1 System Requirements

Hard Drive(s): Number, size, type; ex: IDE hda=1.2G, IDE hdb=540MB	1)
Partitions: mapping of partitions to mount points; ex: `/dev/hda1=/home`, `/dev/hda2=/` (fill this in once you know where partitions and mount points will reside).	2)
Memory: Amount of RAM installed on your computer; ex: 32MB, 64MB, 128MB	3)
CD-ROM: Interface Type; ex: SCSI, IDE (ATAPI) or other	4)

SCSI Adapter: If one is present, make and model number; ex: BusLogic SCSI Adapter, Adaptec 2940UW	5)
Network Card: If one is present, make and model number; ex: Tulip, 3COM 3C590	6)
Mouse: Type, protocol, and number of buttons; ex: generic 3 button PS/2 mouse, MouseMan 2 button serial mouse	7)
Monitor: Make, model, and manufacturer specifications; ex: Optiquest Q53, ViewSonic G773	8)
Video Card: Make, model number and VRAM; ex: Creative Labs Graphics Blaster 3D, 8MB	9)
Sound Card: Make, chipset and model number; ex: S3 SonicVibes, Sound Blaster 32/64 AWE	10)

IP Address: Four numbers, separated by dots; ex: 10.0.2.15 (*contact your network administrator for help*)	11)
netmask: Usually four numbers, separated by dots; ex: 255.255.248.0 (*contact your network administrator for help*)	12)
gateway IP address: Four numbers, separated by dots; ex: 10.0.2.245 (*contact your network administrator for help*)	13)
One or more name server IP Addresses: Usually one or more sets of dot-separated numbers; ex: 10.0.2.1 (*contact your network administrator for help*)	14)

domain name: the name given to your organization; ex: Red Hat's would be `redhat.com` (*contact your network administrator for help*)	15)
hostname: the name of your computer; your personal choice of names ex: `cookie`, `southpark`.	16)

3 Starting the Installation

This chapter explains how to start the Red Hat Linux 6.1 installation process. We'll cover the following areas in this chapter:

- Getting familiar with the installation program's user interface;
- Starting the installation program;
- Selecting an installation method.

By the end of this chapter, the installation program will be running on your system, and you will have selected the appropriate installation method.

3.1 The Installation Program User Interface

If you've used a graphical user interface before, you'll find this process to be familiar. If you have not, you simply need to use your mouse to navigate the screens, to "click" buttons or enter text fields. You can also navigate the installation using the [Tab] and [Enter] keys.

3.1.1 A Note about Virtual Consoles

There is more to the Red Hat Linux installation program than the dialog boxes it presents as you go through the installation process.

In fact, the installation program makes several different kinds of diagnostic messages available to you, in addition to giving you a way to enter commands from a shell prompt. It presents this information on five **virtual consoles** which you can switch between using a single keystroke.

These virtual consoles can be very helpful if you encounter a problem while installing Red Hat Linux. Messages displayed on the installation or system consoles can help pinpoint the problem. Please see Table 3–1, *Console, Keystrokes, and Contents* for a listing of the virtual consoles, the keystrokes to switch to them, and their contents.

Table 3–1 Console, Keystrokes, and Contents

Console	Keystrokes	Contents
1	[Ctrl]-[Alt]-[F1]	installation dialog
2	[Ctrl]-[Alt]-[F2]	shell prompt

Console	Keystrokes	Contents
3	[Ctrl]-[Alt]-[F3]	install log (messages from installation program)
4	[Ctrl]-[Alt]-[F4]	system log (messages from the kernel, etc.)
5	[Ctrl]-[Alt]-[F5]	other messages
7	[Ctrl]-[Alt]-[F7]	X graphical display

In general, there should be no reason to leave the default virtual console (virtual console #7) unless you are attempting to diagnose installation problems. But if you are the curious type, feel free to look around.

3.2 Starting the Installation Program

Now it's time to start installing Red Hat Linux. To start the installation, it is first necessary to boot the installation program. Before we start, please make sure you have all the resources you'll need for the installation. If you've already read through Chapter 2, *Before You Begin*, and followed the instructions, you should be ready.

Alpha

If you haven't created your diskettes yet, please refer to the first chapter of the *Official Red Hat Linux Alpha/SPARC Installation Addendum*, and create them now. After you've created the necessary diskettes, please finish reading the first chapter for information on starting the installation.

SPARC

If you haven't prepared for the installation yet, please read the *Official Red Hat Linux Alpha/SPARC Installation Addendum* to determine how you will boot the installation program, and issue the boot command that will start the installation.

3.2.1 Booting the Installation Program

To start installing Red Hat Linux, insert the boot disk into your computer's first diskette drive and reboot (or boot using the CD-ROM, if your computer supports this). Your BIOS settings may need to be changed to allow you to boot from the diskette or CD-ROM.

Please Note

To change your BIOS settings, you will need to take note of the instructions given when your computer first begins to boot. Often you will see a line of text telling you to press the [Del] key to enter the BIOS settings. Once you have done whatever process is needed to enter your computer's BIOS, you can then change the boot order to allow your computer to boot from the CD-ROM drive or hard drive first when bootable software is detected. For more information please see the *Official Red Hat Linux Reference Guide* for more information.

There are four possible boot methods:

- *local boot disk* -- use in cases where your machine will not support a bootable CD-ROM and you want to install from a local CD-ROM or a hard drive.
- *network boot disk* -- use to install from NFS, FTP and HTTP installation methods.
- *PCMCIA boot disk* -- use in cases where you need PCMCIA support, but your machines does not support booting from the CD-ROM drive *or* if you need PCMCIA support in order to make use of the CD-ROM drive on your system. This boot disk offers you all intallation methods (CD-ROM, hard drive, NFS, FTP, and HTTP).
- *bootable CD-ROM* -- to be used in cases where your machine supports a bootable CD-ROM drive and you want to perform a local CD-ROM installation.

After a short delay, a screen containing the `boot:` prompt should appear. The screen contains information on a variety of boot options. Each boot option also has one or more help screens associated with it. To access a given help screen, press the appropriate function key as listed in the line at the bottom of the screen.

You should keep two things in mind:

- The initial screen will automatically start the installation program if you take no action within the first minute. To disable this feature, press one of the help screen function keys.
- If you press a help screen function key, there will be a slight delay while the help screen is read from diskette.

Normally, you'll only need to press [Enter] to boot. Watch the boot messages to see whether the Linux kernel detects your hardware. If it does not properly detect your hardware, you may need to restart the installation in "expert" mode. If your hardware is properly detected, please continue to the next section.

Expert mode can be entered using the following boot command:

```
boot: linux expert
```

Please Note

The initial boot messages will not contain any references to SCSI or network cards. This is normal as these devices are supported by modules that are loaded during the installation process.

Options can also be passed to the kernel.

For example, to instruct the kernel to use all the RAM in a 128 MB system, enter:

```
boot: linux mem=128M
```

After entering any options, press [Enter] to boot using those options.

If you do need to specify boot options to identify your hardware, please make note of them -- they will be needed during the LILO configuration portion of the installation (please see Section 4.10, *Installing LILO* for more information).

Intel

The Red Hat Linux/Intel CD-ROM can also be booted by computers that support bootable CD-ROMs. Not all computers support this feature, so if yours can't boot from the CD-ROM, there is one other way to start the installation without using a boot disk. The following method is specific to Intel-based computers only.

If you have MS-DOS installed on your system, you can boot directly from the CD-ROM drive without using a boot disk.

To do this (assuming your CD-ROM is drive `d:`), use the following commands:

```
C:\> d:
D:\> cd \dosutils
D:\dosutils> autoboot.bat
```

This method will not work if run in a DOS window -- the `autoboot.bat` file must be executed with DOS as the only operating system. In other words, Windows cannot be running.

If your computer can't boot directly from CD-ROM (and you can't use a DOS-based autoboot), you'll have to use a boot diskette to get things started.

3.3 Selecting an Installation Method

Next, you will be asked what type of installation method you wish to use. You can install Red Hat Linux via any of five basic methods:

CD-ROM

If you have a CD-ROM drive and the Red Hat Linux CD-ROM. Please refer to Chapter 4, *Graphical User Interface Installation* to begin a CD-ROM installation. Requires a boot disk, a bootable CD-ROM or a PCMCIA boot disk.

Hard Drive

If you copied the Red Hat Linux files to a local hard drive. Please refer to the *Official Red Hat Linux Reference Guide* for hard drive installation instructions. Requires a boot disk or a PCMCIA boot disk.

NFS Image

If you are installing from an NFS Image server which is exporting the Red Hat Linux CD-ROM or a mirror image of Red Hat Linux. Requires a network or PCMCIA boot disk. Please refer to the *Official Red Hat Linux Reference Guide* for network installation instructions. Please also note that NFS installation may also be performed in GUI mode.

FTP

If you are installing directly from an FTP server. Requires a network or PCMCIA boot disk. Please refer to the *Official Red Hat Linux Reference Guide* for FTP installation instructions.

HTTP

If you are installing directly from an HTTP Web server. Requires a network or PCMCIA boot disk. Please refer to the *Official Red Hat Linux Reference Guide* for HTTP installation instructions.

4 Graphical User Interface Installation

4.1 Beginning the Installation

If you are planning to install via CD-ROM using the new graphical interface, please read on.

If you are planning to do a text mode installation, type `text` at the `boot:` prompt and refer to the *Official Red Hat Linux Reference Guide*.

4.1.1 Installing from CD-ROM

To install Red Hat Linux from CD-ROM, choose "CD-ROM," and select **OK**. When prompted, insert the Red Hat Linux CD into your CD-ROM drive. Once done, select **OK**, and press [Enter]. The installation program will then probe your system and attempt to identify your CD-ROM drive. It will start by looking for an IDE (also known as ATAPI) CD-ROM drive. If found, the installation will continue. If not detected, you will be asked what type of CD-ROM drive you have. You can choose from the following types:

SCSI

Select this if your CD-ROM drive is attached to a supported SCSI adapter; the installation program will then ask you to choose a SCSI driver. Choose the driver that most closely resembles your adapter. You may specify options for the driver if necessary; however, most drivers will detect your SCSI adapter automatically.

Other

If your CD-ROM drive is neither an IDE nor a SCSI, it's an "other." Sound cards with proprietary CD-ROM interfaces are good examples of this CD-ROM type. The installation program presents a list of drivers for supported CD-ROM drives -- choose a driver and, if necessary, specify any driver options.

Please Note

A partial list of optional parameters for CD-ROM drives can be found in the *Official Red Hat Linux Reference Guide*, in the *General Parameters and Modules* appendix.

If you have an IDE (ATAPI) CD-ROM drive and the installation program fails to find it (in other words, it asks you what type of CD-ROM drive you have), you must restart the installation, and enter `linux hdX=cdrom`. Replace the *X* with one of the following letters, depending on the interface the unit is connected to, and whether it is configured as master or slave:

- `a` - First IDE controller, master
- `b` - First IDE controller, slave
- `c` - Second IDE controller, master
- `d` - Second IDE controller, slave

(If you have a third and/or fourth controller, simply continue assigning letters in alphabetical order, going from controller to controller, and master to slave.)

Once identified, you will be asked to insert the Red Hat Linux CD into your CD-ROM drive. Select **OK** when you have done so. After a short delay, the next dialog box will appear.

After booting, the installation program begins by displaying the language screen. If you wish to abort the installation process at this time, simply eject the boot diskette or CD-ROM now and reboot your machine.

You can safely cancel the installation at any point before you configure X for your system. However, once X has been configured, partitions will be written and packages will be installed.

4.2 Language Selection

Using your mouse, please select your preferred language to use for the installation and the system default (see Figure 4–1, *Language Selection*).

Figure 4–1 Language Selection

4.3 Keyboard Configuration

First, choose the model that best fits your system (see Figure 4–2, *Keyboard Configuration*). If you cannot find an exact match for your keyboard type, please choose the best **Generic** match for your system (for example, Generic 101-key PC).

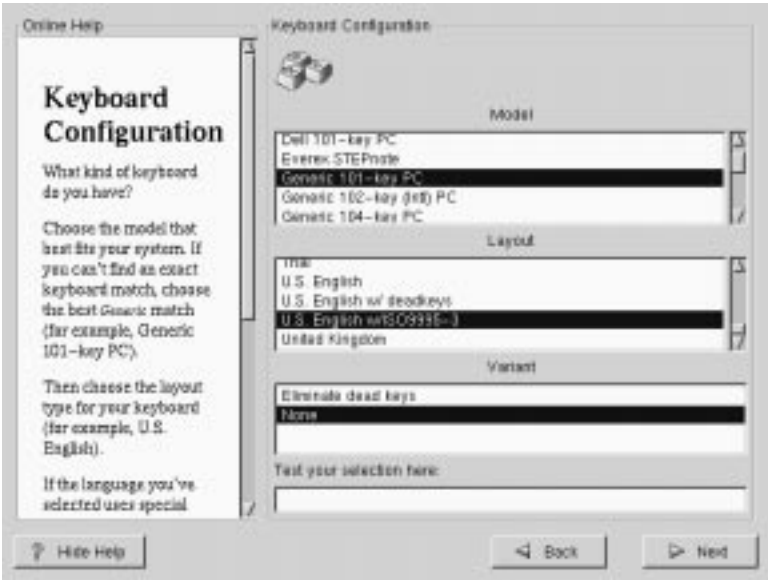
Next, choose the correct layout type for your keyboard (for example, U.S. English).

Also available are other keyboard options (such as the **Dead Keys** option) that you can choose from.

If you wish to test out your keyboard configuration before you click **Next**, use the blank like at the bottom of the configuration screen.

If you wish to change your keyboard type after you have installed your Red Hat Linux system, you can use the `/usr/sbin/kbdconfig` command or you can type `setup` at the `root` prompt.

Figure 4–2 Keyboard Configuration



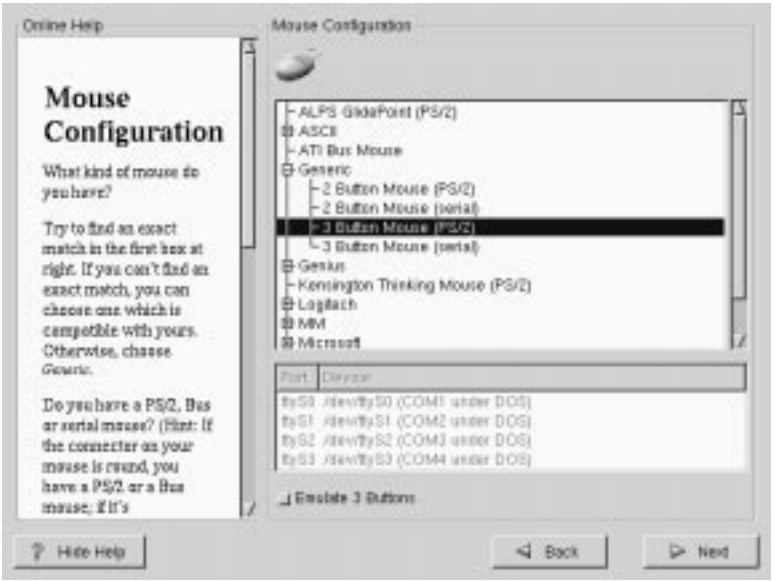
4.4 Mouse Configuration

First, choose the correct mouse type for your system. Try to find an exact match. If an exact match cannot be found, choose a mouse type that you are sure is compatible with your system (see Figure 4–3, *Mouse Configuration*) .

To determine your mouse's interface, follow the mouse cable back to where it plugs into your system. If the connector at the end of the mouse cable plugs into a rectangular connector, you have a serial mouse; if the connector is round, you have a PS/2 mouse. If you are installing Red Hat Linux on a laptop computer, in most cases the pointing device will be PS/2 compatible.

If you cannot find a mouse that you are sure is compatible with your system, select one of the **Generic** entries, based on your mouse's number of buttons, and its interface.

Figure 4–3 Mouse Configuration



If you have a PS/2 or a Bus mouse, you do not need to pick a port and device. If you have a serial mouse, you should choose the correct port and device that your serial mouse is on.

The **Emulate 3 Buttons** check box allows you to use a two-button mouse as if it had three buttons. In general, it's easiest to use the X Window System if you have a three-button mouse. If you select this check box, you can emulate a third, "middle" button by pressing both mouse buttons simultaneously.

If you wish to change your mouse configuration after you have booted your Red Hat Linux system, you can use the `/usr/sbin/mouseconfig` command from the shell prompt.

If you wish to configure your mouse as a left-handed mouse, you can reset the order of the mouse buttons. This can be done after you have booted your Red Hat Linux system, by typing `gpm -B 321` at the shell prompt.

4.5 Welcome to Red Hat Linux

The "Welcome" screen (see Figure 4–4, *Welcome to Red Hat Linux*) does not prompt you for any installation input. Please read over the help text in the left panel for instructions on where to register your Official Red Hat Linux product.

Figure 4–4 Welcome to Red Hat Linux

Throughout this installation, you will be able to use your mouse to choose different installation options. Please notice the **Hide Help** button at the bottom left corner of the screen. The help screen is open by default, but if you do not want to view the help information, click on the **Hide Help** to minimize the screen.

4.6 Install Path

Please choose whether you would like to perform a full installation or an upgrade (see Figure 4–5, *Choosing Install or Upgrade*).

Figure 4–5 Choosing Install or Upgrade

4.6.1 Installing

You usually install Red Hat Linux on a clean disk partition or set of partitions, or over another installation of Linux.

WARNING

Installing Red Hat Linux over another installation of Linux (including Red Hat Linux) does *not* preserve any information (files or data) from a prior installation. Make sure you save any important files! If you are worried about saving the current data on your existing system (without making a backup on your own), you should consider performing an upgrade instead (see Section 4.6.2, *Upgrading*).

If you choose to perform a full installation, you must also choose the class of the installation. Your options include: **Custom**, **GNOME Workstation**, **KDE Workstation**, or **Server**.

Only the custom-class installation allows you complete flexibility. The workstation-class and server-class installations automatically go through the installation process for you and omit certain steps. During a custom-class installation, it is up to *you* how disk space should be partitioned. You have complete control over the packages that will be installed on your system. You can also determine whether you'll use LILO to boot your system.

If you would like to know what steps are missed by not performing a custom-class installation please refer to Section 2.4.4, *Behind the Scenes of a Custom-Class Installation*.

Workstation-class installations will install the X Window System and the desktop manager of your choice.

A workstation-class installation will erase *all information* in *all Linux-related partitions* from *every one* of your computer's hard drive(s).

A server-class installation is most appropriate for you if you'd like your system to function as a Linux-based server, and you don't want to heavily customize your system configuration.

A server-class installation will erase *all partitions* (both Linux and non-Linux) from *every one* of your computer's hard drive(s).

4.6.2 Upgrading

The installation process for Red Hat Linux 6.1 includes the ability to upgrade from prior versions of Red Hat Linux (version 2.0 and later) which are based on RPM technology.

Upgrading your system installs the modular 2.2.x kernel as well as updated versions of the packages which are currently installed on your machine. The upgrade process preserves

existing configuration files by renaming them using an `.rpmsave` extension (e.g., `sendmail.cf.rpmsave`) and leaves a log of the actions it took in `/tmp/upgrade.log`. As software evolves, configuration file formats can change, so you should carefully compare your original configuration files to the new files before integrating your changes.

Please Note

Some upgraded packages may require that other packages are also installed for proper operation. The upgrade procedure takes care of these *dependencies*, but it may need to install additional packages which are not on your existing system.

4.7 Automatic Partitioning

The `Automatic Partitioning` screens will only be seen if you are performing a workstation- or server-class installation.

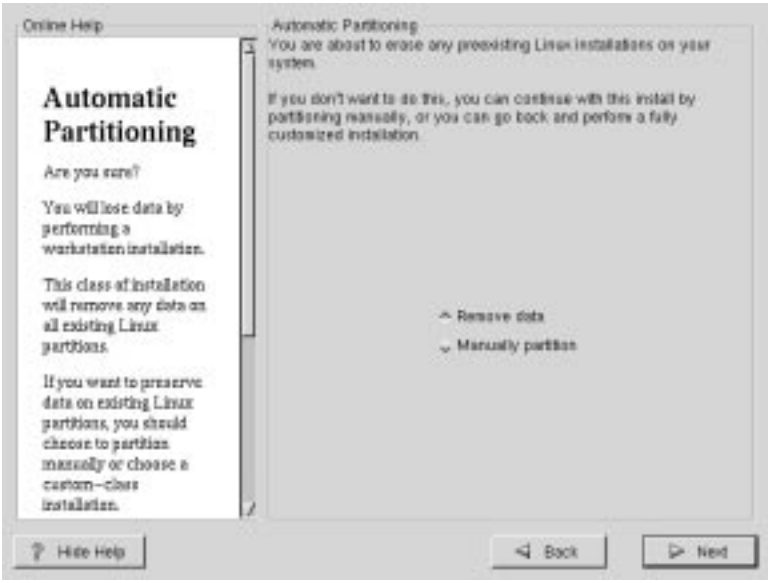
Here you can choose to continue with this installation, to partition manually, or to use the **Back** button to go back and choose a different installation method (see Figure 4–6, *Automatic Partitioning*).

If you do *not* want to lose some or all of your data, you should either choose to partition manually or choose a different installation class.

A workstation-class installation will remove data on all currently existing Linux partitions. If you do not want Red Hat Linux to be installed on your master boot record (MBR) or if you want to use a boot manager other than LILO, do not choose this installation method.

A server-class installation will remove data on all partitions of all hard drives. If you have another OS on your system that you wish to keep installed, if you do not want Red Hat Linux to be installed on your master boot record (MBR), or if you want to use a boot manager other than LILO, do not choose this installation method.

Figure 4–6 Automatic Partitioning



If you are unsure how you want your system to be partitioned, please read the chapter on partitioning in the *Official Red Hat Linux Reference Guide*.

4.8 Partitioning your System

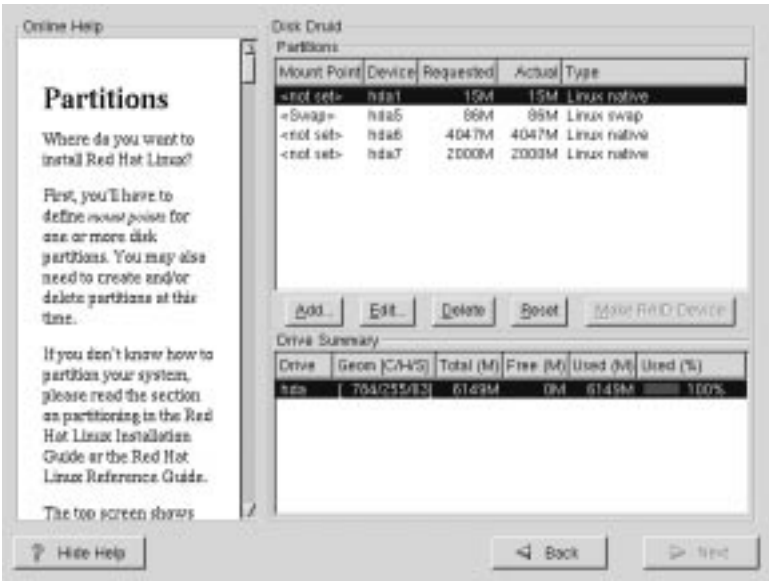
If you are performing a workstation- or server-class installation and you chose *not* to partition manually, please skip to Section 4.12, *Time Zone Configuration*.

At this point, it's necessary to let the installation program know where it should install Red Hat Linux. This is done by defining **mount points** for one or more disk partitions in which Red Hat Linux will be installed. You may also need to create and/or delete partitions at this time (refer to Figure 4–7, *Partitioning Your System*).

Please Note

If you have not yet planned how you will set up your partitions, refer to the chapter on partitioning in the *Official Red Hat Linux Reference Guide* for more information. As a bare minimum, you'll need an appropriately-sized root partition, and a swap partition of at least 16 MB.

Figure 4–7 Partitioning Your System



The partitioning tool used in Red Hat Linux 6.1 is Disk Druid. Those of you who have installed Red Hat Linux before have possibly used Disk Druid, but will notice that in this version, Disk Druid has a clean, graphical interface.

With the exception of certain esoteric situations, Disk Druid can handle the partitioning requirements for a typical Red Hat Linux installation.

Alpha, SPARC

Note that there are some points you should be aware of if you decide to use Disk Druid on either Alpha or SPARC systems. Please refer to the *Official Red Hat Linux Alpha/SPARC Installation Addendum* for more information.

4.8.1 Partition Fields

Each line in the "Partitions" section represents a disk partition. Each line in this section has five different fields:

Mount Point:

A mount point is the location within the directory hierarchy at which a volume exists. The volume is said to be mounted at this location. This field indicates where the partition will be mounted. If a partition exists, but is "not set" you need to define its mount point. Double-click on the partition or use the **Edit** key.

We recommend that, unless you have a reason for doing otherwise, you should create the following partitions:

- A swap partition (at least 16MB) -- Swap partitions are used to support virtual memory. If your computer has 16MB of RAM or less, you *must* create a swap partition. Even if you have more memory, a swap partition is still recommended. The minimum size of your swap partition should be equal to your computer's RAM, or 16MB (whichever is larger).
- A `/boot` partition (16MB, maximum) -- The partition mounted on `/boot` contains the operating system kernel, along with files used during the bootstrap process. Due to the limitations of most PC BIOSes, creating a small partition to hold these files is a good idea. This partition should be no larger than 16MB.
- A `root` partition (600MB-1.5GB) -- This is where "`/`" (the root directory) resides. In this setup, all files (except those stored in `/boot`) reside on the root partition. A 600MB root partition will permit the equivalent of a workstation-class installation (with *very* little free space), while a 1.5GB root partition will let you install every package.

Device:

This field displays the partition's device name.

Requested:

The "Requested" field shows the partition's original size. To re-define the size, you must delete the current partition and recreate it using the **Add** button.

Actual:

The "Actual" field shows the space currently allocated to the partition.

Type:

This field shows the partition's type (such as Linux Native or DOS).

4.8.2 Problems When Adding a Partition

If you attempt to add a partition and Disk Druid can't carry out your request, you'll see a dialog box listing any partitions that are currently unallocated, along with the reason they could not be allocated. Note that the unallocated partition(s) are also displayed on Disk Druid's main screen (though you may have to scroll through the "Partitions" section to see them).

As you scroll through the "Partitions" section, you might see an "Unallocated Requested Partition" message (in red text), followed by one or more partitions. A common reason for this is a lack of sufficient free space for the partition. In any case, the reason the partition remains unallocated will be displayed after the partition's requested mount point.

To fix an unallocated requested partition, you must move the partition to another drive which has the available space, resize the partition to fit on the current drive, or delete the partition entirely. Make changes using the **Edit** button or by double clicking on the partition.

4.8.3 Drive Summaries

Each line in the "Drive Summaries" section represents a hard disk on your system. Each line has the following fields:

Drive:

This field shows the hard disk's device name.

Geom [C/H/S]:

This field shows the hard disk's **geometry**. The geometry consists of three numbers representing the number of cylinders, heads and sectors as reported by the hard disk.

Total:

The "Total" field shows the total available space on the hard disk.

Free:

The "Free" field shows how much of the hard disk's space is still unallocated.

Used:

These fields show how much of the hard disk's space is currently allocated to partitions, in megabytes and percentage.

The **Drive Summaries** section is displayed only to indicate your computer's disk configuration. It is not meant to be used as a means of specifying the target hard drive for a given partition. That is done using the **Allowable Drives** field in Section 4.8.5, *Adding Partitions*.

4.8.4 Disk Druid's Buttons

These buttons control Disk Druid's actions. They are used to add and delete partitions, and to change partition attributes. In addition, there are buttons that are used to accept the changes you've made, or to exit Disk Druid. Let's take a look at each button in order.

Add:

used to request a new partition. When selected, a dialog box will appear containing fields (such as mount point and size) that must be filled in.

Edit:

used to modify attributes of the partition currently highlighted in the "Partitions" section. Selecting this button will cause a dialog box to appear. Some or all of the fields in the **Edit Partition** dialog box can be changed, depending on whether the partition information has already been written to disk.

Delete:

used to delete the partition currently highlighted in the **Current Disk Partitions** section. You'll be asked to confirm the deletion of any partition.

Reset:

used to restore Disk Druid to its original state. All changes you may have made will be lost if you choose to reset the partitions.

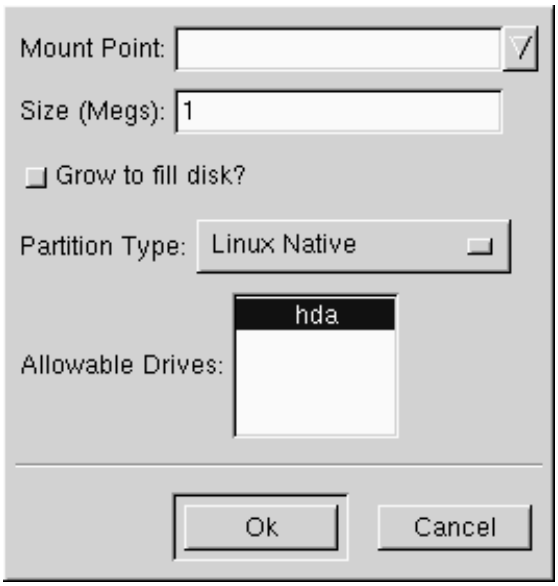
Make RAID Device:

Make RAID Device can be used if you want to provide redundancy to any or all disk partitions. *It should only be used if you have experience using RAID.* To read more about RAID, please refer to the *Official Red Hat Linux Reference Guide*.

4.8.5 Adding Partitions

To add a new partition, select the **Add** button. A dialog box will appear (see Figure 4–8, *Adding a Partition*).

Figure 4–8 Adding a Partition



Please Note

You will need to dedicate at least one partition to Red Hat Linux, and optionally more. This is discussed more completely in the chapter on partitioning in the *Official Red Hat Linux Reference Guide*.

- **Mount Point**: Highlight and enter the partition's mount point. For example, if this partition should be the root partition, enter `/`; enter `/usr` for the `/usr` partition, and so on. You can also use the pull-down menu to choose the correct mount point for your partition.
- **Size (Megs)**: Enter the size (in megabytes) of the partition. Note that this field starts with a "1" in it, unless you change it you'll end up with a 1 MB partition.
- **Grow To Fill**: This check box indicates whether the size you entered in the previous field is to be considered the partition's exact size, or its minimum size. When checked, the partition will grow to fill all available space on the hard disk. The partition's size will expand and contract as other partitions are modified. You can make more than one partition growable; if you do so, the additional free space will be shared among all growable partitions.
- **Allowable Type**: This field contains a list of different partition types (such as Linux Native or DOS). Select the appropriate partition type by using the mouse.
- **Allowable Drives**: This field contains a list of the hard disks installed on your system. If a hard disk's box is highlighted, then a desired partition can be created on that hard disk. If the box is *not* checked, then the partition will *never* be created on that hard disk. By using different check box settings, you can direct Disk Druid to place partitions as you see fit, or let Disk Druid decide where partitions should go.
- **Ok**: Select this button and press [Enter] when you are satisfied with the partition's settings, and wish to create it.
- **Cancel**: Select this button and press [Enter] if you don't want to create the partition.

4.8.6 Editing Partitions

To edit a partition, select the **Edit** button or double-click on the existing partition.

Please Note

If the partition already existed on your hard disk, you will only be able to change the partition's mount point. If you want to make any other changes, you will need to delete the partition and recreate it.

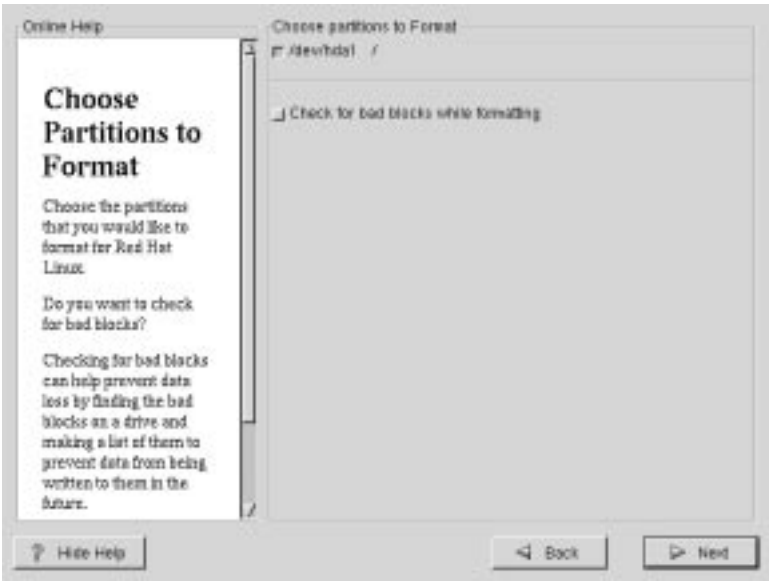
4.8.7 Deleting a Partition

To delete a partition, highlight itin the "Partitions" section and double-click the **Delete** button. You will be asked to confirm the deletion.

4.9 Choose Partitions to Format

Choose the partitions that you would like to format. All newly created partitions should be formatted. In addition, any existing partitions that contain data you no longer need should be formatted. However, partitions such as `/home` or `/usr/local` must not be formatted if they contain data you wish to keep (see Figure 4–9, *Choosing Partitions to Format*).

Figure 4–9 Choosing Partitions to Format



If you wish to check for bad blocks while formatting each filesystem, please make sure to select the **check for bad blocks** option.

Checking for bad blocks can help prevent data loss by locating the bad blocks on a drive and making a list of them to prevent using them in the future.

4.10 Installing LILO

If performing a workstation- or server-class installation, please skip ahead to Section 4.12, *Time Zone Configuration*.

In order to be able to boot your Red Hat Linux system, you usually need to install LILO (the LInux LOader). You may install LILO in one of two places:

The master boot record (MBR)

The recommended place to install LILO, unless the MBR already starts another operating system loader, such System Commander or OS/2's Boot Manager. The master boot record is a special area on your hard drive that is automatically loaded by your computer's BIOS, and is the earliest point at which LILO can take control of the boot process. If you install LILO in the MBR, when your machine boots, LILO will present a `boot:` prompt. You can then boot Red Hat Linux or any other operating system you configure LILO to boot (see below).

The first sector of your root partition

Recommended if you are already using another boot loader on your system (such as OS/2's Boot Manager). In this case, your other boot loader will take control first. You can then configure that boot loader to start LILO (which will then boot Red Hat Linux).

If you choose to install LILO, please select where you would like LILO to be installed on your system (see Figure 4–10, *LILO Configuration*). If your system will use only Red Hat Linux you should choose the master boot record (MBR). For systems with Win95/98, you also should install LILO to the MBR so that LILO can boot both operating systems.

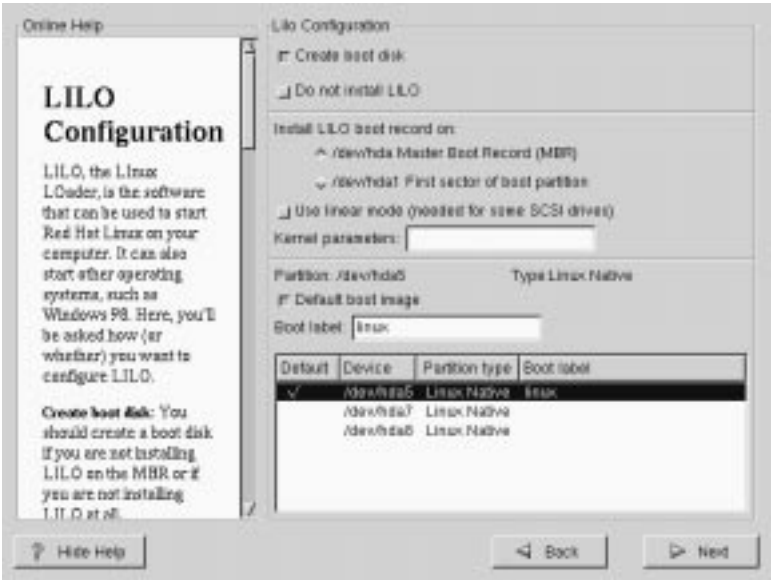
If you have Windows NT (and you want to install LILO) you should choose to install LILO on the first sector of the root partition, not the MBR. Please be sure to create a boot disk. In a case such as this, Windows NT's operating system loader will be on the MBR and the only way you can choose LILO (on the first sector of your root partition) is by using the boot disk. Be sure to check out http://www.linuxdoc.org/HOWTO/mini/Linux+NT-Loader.html for more information on setting up LILO and NT.

WARNING

If you choose not to install LILO for any reason, you will not be able to boot your Red Hat Linux system directly, and will need to use another boot method (such as a boot diskette). Use this option only if you are sure you have another way of booting your Red Hat Linux system!

If your computer accesses a hard drive in LBA mode, check `Use linear mode`. This is most often used in situations where the drive is an SCSI and you are getting errors accessing the drive.

Figure 4–10 LILO Configuration



If you wish to add default options to the LILO boot command, enter them into the kernel parameters field. Any options you enter will be passed to the Linux kernel every time it boots.

Bootable Partition -- Every bootable partition is listed, including partitions used by other operating systems. The "Boot label" column will be filled in with the word `linux` on the partition holding your Red Hat Linux system's root filesystem. Other partitions may also have boot labels. If you would like to add boot labels for other partitions (or change an existing boot label), click once on the partition to select it. Once selected, you can change the boot label.

Please Note

The contents of the "Boot label" column will be what you will need to enter at LILO's `boot:` prompt in order to boot the desired operating system. However, if you forget the boot labels defined on your system, you can always press [Tab] at LILO's `boot:` prompt to display a list of defined boot labels.

4.10.1 Configuring LILO

- **Create boot disk** -- The **Create Boot Disk** option is checked by default. If you do not want to create a boot disk, you should deselect this option. However, we strongly urge you to create a boot disk. A boot disk can be handy for a number of reasons:
  - Use It Instead of LILO -- You can use a boot disk instead of LILO. This is handy if you're trying Red Hat Linux for the first time, and you'd feel more comfortable if the boot process for your other operating system is left unchanged. With a boot disk, going back to your other operating system is as easy as removing the boot disk and rebooting.
  - Use It In Emergencies -- The boot disk can be used in conjunction with the rescue mode, which will give you the tools necessary to get your system back on its feet [1].

[1] To do this, you have several options:

⇒ Using the CD-ROM to boot, type `linux rescue` at the `boot:` prompt.

⇒ Using the network boot disk, type `linux rescue` at the `boot:` prompt. You will then be prompted to pull the rescue image from the network.

⇒ Using the boot disk included with the Red Hat Linux boxed set, type `linux rescue` at the `boot:` prompt. You can then load the rescue images from the CD-ROM or hard drive.

– Use It If Another Operating System Overwrites LILO -- Other operating systems may not be as flexible as Red Hat Linux when it comes to supported boot methods. Quite often, installing or updating another operating system can cause the master boot record (originally containing LILO) to be overwritten, making it impossible to boot your Red Hat Linux installation. The boot disk can then be used to boot Red Hat Linux so you can reinstall LILO.

- **Do not install LILO** -- if you have Windows NT installed on your system, you may not want to install LILO. If you choose not to install LILO for this reason, make sure that you have chosen to create a boot disk; otherwise you will not be able to boot Linux. You can also choose to skip LILO if you do not want to write LILO to your hard drive.

4.10.2 Alternatives to LILO

If you do not wish to use LILO to boot your Red Hat Linux system, there are several alternatives:

Boot Disk

As previously stated, you can use the boot disk created by the installation program (if you elected to create one).

LOADLIN

You can load Linux from MS-DOS. Unfortunately, it requires a copy of the Linux kernel (and an initial RAM disk, if you have a SCSI adapter) to be available on an MS-DOS partition. The only way to accomplish this is to boot your Red Hat Linux system using some other method (e.g., from LILO on a diskette) and then copy the kernel to an MS-DOS partition. `LOADLIN` is available from ftp://metalab.unc.edu/pub/Linux/system/boot/dualboot/ and associated mirror sites.

SYSLINUX

An MS-DOS program very similar to `LOADLIN`. It is also available from ftp://metalab.unc.edu/pub/Linux/system/boot/loaders/ and associated mirror sites.

Some commercial bootloaders

For example, `System Commander` and Partition Magic, which are able to boot Linux (but still require LILO to be installed in your Linux root partition).

4.10.3 SMP Motherboards and LILO

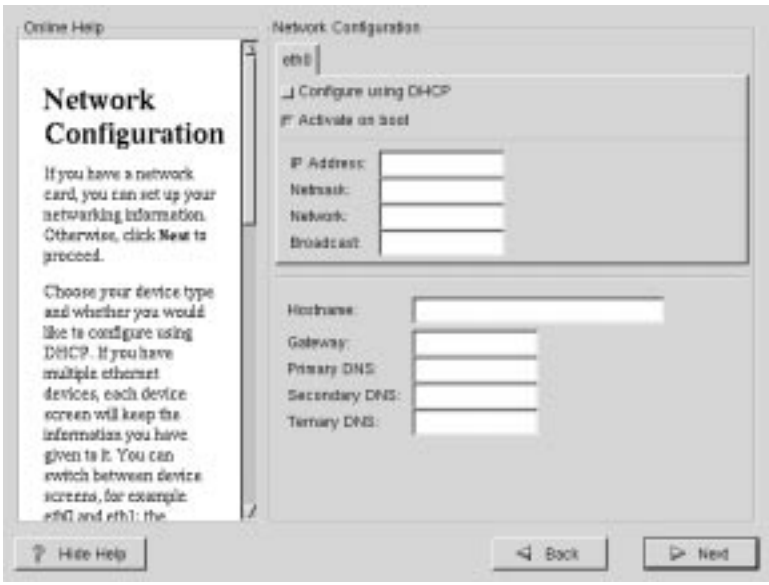
This section is specific to SMP motherboards only. If the installer detects an SMP motherboard on your system, it will automatically create two **lilo.conf** entries as opposed to the usual single entry.

One entry will be called **linux** and the other will be called **linux-up**. The *linux* will boot by default. However, if you have trouble with the SMP kernel, you can elect to boot the *linux-up* entry instead. You will retain all the functionality as before, but you will only be operating with a single processor.

4.11 Network Configuration

If you have a network card and have not already configured your networking information, you now have the opportunity to configure networking. Figure 4–11, *Network Configuration*).

Figure 4–11 Network Configuration



Choose your device type and whether you would like to configure using DHCP. If you have multiple ethernet devices, each device will keep the information you have provided. You may switch between devices, for example eth0 and eth1, and the information you give will

be specific to each device. If you select **Activate on boot**, your network interface will be started when you boot. If you do not have DHCP client access or are unsure as to what this information is, please contact your network administrator.

Next enter, where applicable, the **IP Address**, **Netmask**, **Network**, and **Broadcast** numbers. If you are unsure about any of these, please contact your network administrator.

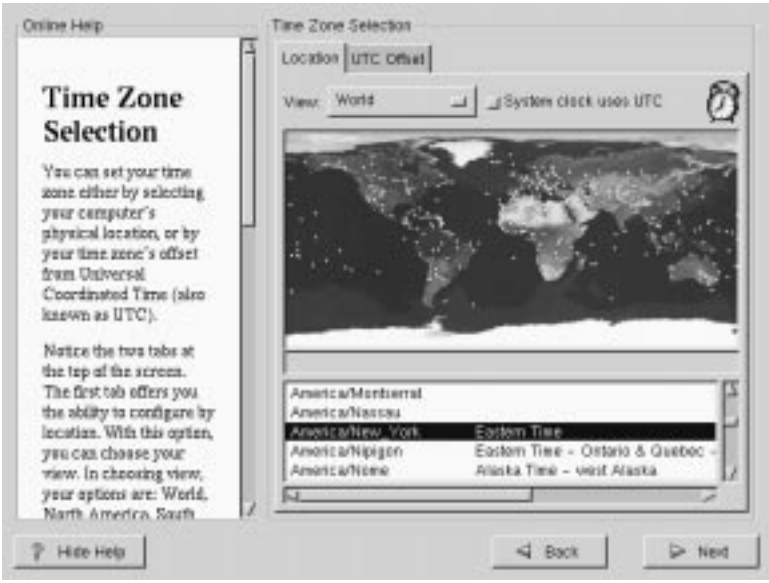
Take this opportunity to enter in a name for your system. If you do not, your system will be known as `localhost`.

Finally, enter the **Gateway**, **Primary DNS**, **Secondary DNS** and **Tertiary DNS** numbers.

4.12 Time Zone Configuration

You can set your time zone either by selecting your computer's physical location, or by your time zone's offset from Universal Coordinated Time (also known as UTC).

Figure 4–12 Configuring Time Zone



Notice the two tabs at the top of the screen (see Figure 4–12, *Configuring Time Zone*). The first tab offers you the ability to configure by location. With this option, you can choose your

view. In choosing **view**, your options are: **World**, **North America**, **South America**, **Pacific Rim**, **Europe**, **Africa**, and **Asia**.

From the interactive map, you can click on a specific city, as indicated by the yellow dots; a red **X** will appear to indicate your selection. You can also scroll through a list and choose your desired time zone.

The second tab offers you the ability to use the UTC offset. UTC presents you with a list of offsets to choose from, as well as an option to set Daylight Savings Time.

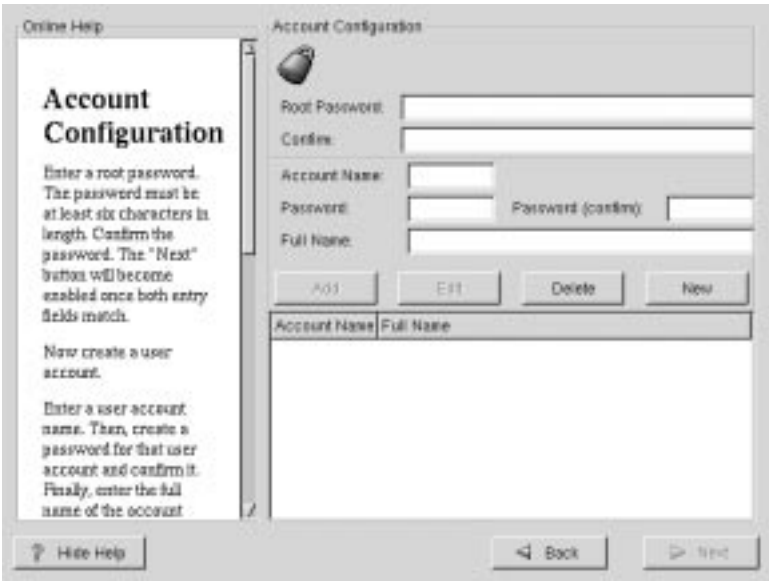
For both tabs, there is the option of selecting **System Clock uses UTC**. Please select this if you know that your system is set to UTC.

If you wish to change your time zone configuration after you have booted your Red Hat Linux system, you may use the `/usr/sbin/timeconfig` command.

4.13 Account Configuration

The **Account Configuration** screen allows you to set your root password. Additionally, you can set up user accounts for you to login to once the installation is complete (see Figure 4–13, *Account Creation*).

Figure 4–13 Account Creation



4.13.1 Setting the Root Password

The installation program will prompt you to set a **root password** for your system. You'll use the root password to log into your Red Hat Linux system for the first time.

The root password must be at least six characters long; the password you type is not echoed to the screen. You must enter the password twice; if the two passwords do not match, the installation program will ask you to enter them again.

You should make the root password something you can remember, but not something that is easy for someone else to guess. Your name, your phone number, **qwerty**, **password**, **root**, **123456**, and **anteater** are all examples of poor passwords. Good passwords mix numerals with upper and lower case letters and do not contain dictionary words: **Aard387vark** or **420BMttNT**, for example. Remember that the password is case-sensitive. Write down this password and keep it in a secure place.

Please Note

The **root** user (also known as the **superuser**) has complete access to the entire system; for this reason, logging in as the root user is best done *only* to perform system maintenance or administration.

4.13.2 Setting Up User Accounts

If you choose to create a user account now, you will have an account to log in to once the installation has completed. This allows you to safely and easily log into your computer without having to be **root** to create other accounts.

Enter an account name. Then enter and confirm a password for that user account. Enter the full name of the account user and press [Enter]. Your account information will be added to the account list, clearing the user account fields so you can add another user.

You can also choose **New** to add a new user. Enter the user's information and use the **Add** button to add the user to the account list.

You can also **Edit** or **Delete** the user accounts you have created or no longer want.

4.14 Authentication Configuration

If performing a workstation-class installation, please skip ahead to Section 4.16, *GUI X Configuration Tool*.

If performing a server-class installation, please skip ahead to Section 4.18, *Installing Packages*.

You may skip this section if you will not be setting up network passwords. If you are unsure as to whether you should do this, please ask your system administrator for assistance.

Unless you are setting up **NIS** authentication, you will notice that both **MD5** and **shadow** passwords are selected (see Figure 4–14, *Authentication Configuration*). We recommend you use both to make your machine as secure as possible.

To configure the NIS option, you must be connected to an NIS network. If you are unsure whether you are connected to an NIS network, please ask your system administrator.

Figure 4–14 Authentication Configuration

- **MD5 Password** -- allows a long password to be used (up to 256 characters), instead of the standard eight letters or less.
- **Shadow Password** -- provides a secure method of retaining passwords. The passwords are stored in `/etc/shadow`, which is only readable by root.
- **Enable NIS** -- allows you to run a group of computers in the same Network Information Service domain with a common password and group file. There are two options to choose from here:
  - **NIS Domain** -- this option allows you to specify which domain or group of computers your system belongs to.
  - **NIS Server** -- this option causes your computer to use a specific NIS server, rather than "broadcasting" a message to the local area network asking for any available server to host your system.

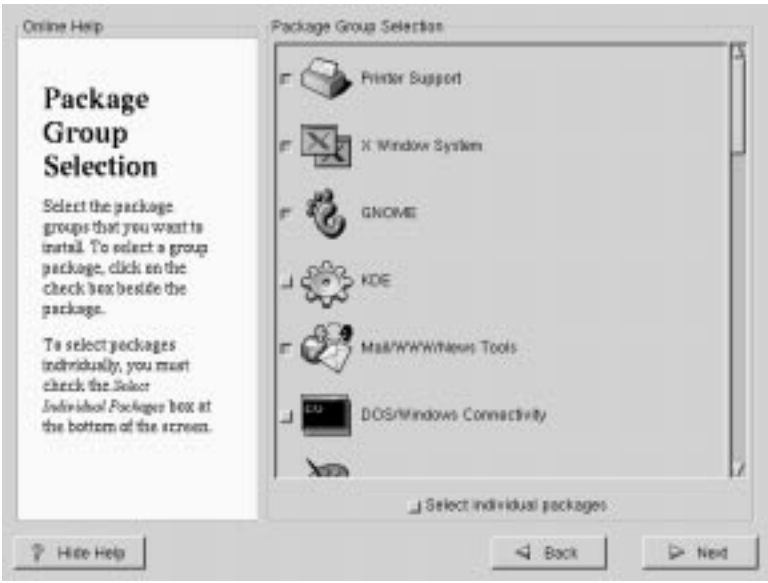
4.15 Package Group Selection

After your partitions have been selected and configured for formatting, you are ready to select packages for installation.

You can select **components**, which group packages together according to function (for example, `C Development`, `Networked Workstation`, or `Web Server`), **individual packages**, or a combination of the two.

To select a component, click on the check box beside it (see Figure 4–15, *Package Group Selection*).

Figure 4–15 Package Group Selection



Select each component you wish to install. Selecting `Everything` (which can be found at the end of the component list) installs all packages included with Red Hat Linux. Selecting every package will require close to 1.5GB of free disk space.

To select packages individually, check the **Select Individual Packages** box at the bottom of the screen.

4.15.1 Selecting Individual Packages

After selecting the components you wish to install, you can select or deselect individual packages. The installation program presents a list of the packages in that group, which you can select or deselect using your mouse (see Figure 4–16, *Selecting Individual Packages*).

Figure 4–16 Selecting Individual Packages

On the left side of the screen you will see a directory listing of various package groups. When you expand this list (double-click to select it) and double-click on a single directory, the list of packages available for installation will appear on the right.

To select an individual package, double-click on it with the left mouse button, or click on it once to highlight it and click on the **Select Package For Installation** button below. A red check mark will appear on any of the packages you have selected for installation.

To read information about a particular package before choosing it for installation, left-click it once to highlight it, and the information will apprear at the bottom of the screen along with the name and size of the package.

Please Note

Some packages (such as the kernel and certain libraries) are required for every Red Hat Linux system and are not available to select or deselect. These **base packages** are selected by default.

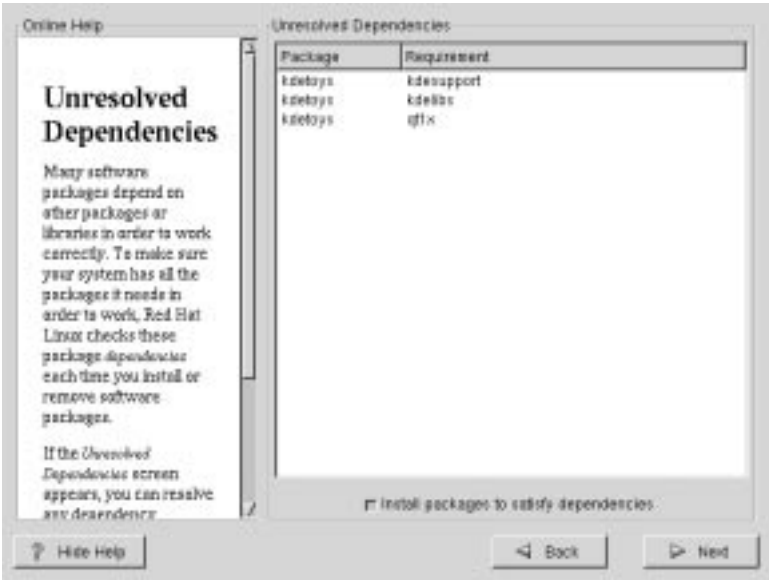
4.15.2 Unresolved Dependencies

Many software packages, in order to work correctly, depend on other software packages that must be installed on your system. For example, many of the graphical Red Hat system administration tools require the python and pythonlib packages. To make sure your system has all the packages it needs in order to be fully functional, Red Hat Linux checks these package **dependencies** each time you install or remove software packages.

If any package requires another package which you have not selected to install, the program presents a list of these **unresolved dependencies** and gives you the opportunity to resolve them (see Figure 4–17, *Unresolved Dependencies*).

The **Unresolved Dependencies** screen will only appear if you are missing certain packages that are needed by your selected packages. Under the list of missing packages, there is an **Install packages to satisfy dependencies** check box at the bottom of the screen which is selected by default. If you leave this checked, the installation program will resolve package dependencies automatically by adding all required packages to the list of selected packages.

Figure 4–17 Unresolved Dependencies



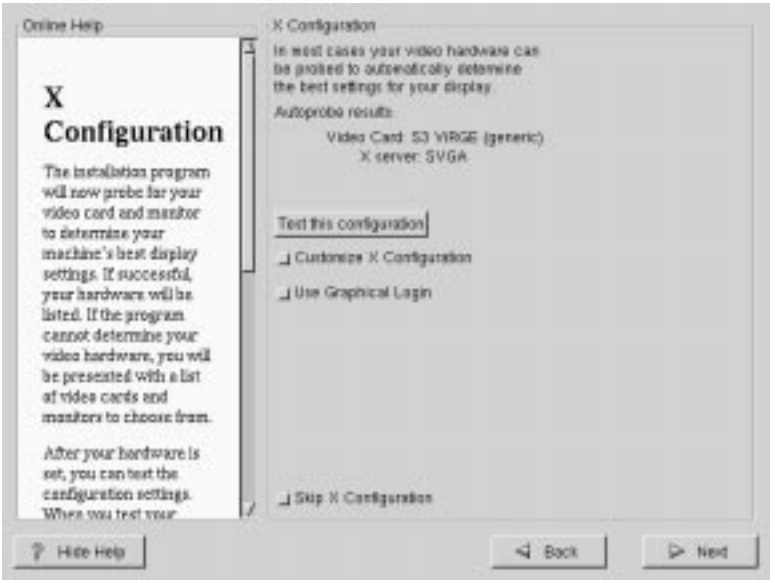
4.16 GUI X Configuration Tool

If you decided to install the X Window System packages, you now have the opportunity to configure an X server for your system. If you did not choose to install the X Window System packages, skip ahead to Section 4.18, *Installing Packages*.

`Xconfigurator` first probes your system in an attempt to determine what type of video hardware you have (see Figure 4–18, *X Configuration Screen*). Failing that, `Xconfigurator` will present a list of video cards and monitors for you to select from.

If your video card does not appear on the list, XFree86 may not support it. However, if you have technical knowledge about your card, you may choose **Unlisted Card** and attempt to configure it by matching your card's video chipset with one of the available X servers.

Figure 4–18 X Configuration Screen



Next, `Xconfigurator` prompts you for the amount of video memory installed on your video card. If you are not sure, please consult the documentation accompanying your video card. You will not damage your video card by choosing more memory than is available, but the XFree86 server may not start correctly if you do.

If the video card you selected might have a video clockchip, `Xconfigurator` presents a list of clockchips. The recommended choice is **No Clockchip Setting**, since XFree86 can automatically detect the proper clockchip in most cases.

If your monitor does not appear on the list, select **Custom**. If you do select **Custom**, `Xconfigurator` prompts you to select the horizontal sync range and vertical sync range of your monitor (these values are generally available in the documentation which accompanies your monitor, or from your monitor's vendor or manufacturer).

CAUTION

It is not recommended to select a monitor "similar" to your monitor unless you are certain that the monitor you are selecting does not exceed the capabilities of your monitor. If you do so, it is possible you may overclock your monitor and damage or destroy it.

Once your hardware has been determined, you can test the configuration settings. We recommend that you do test your configuration to make sure that the resolution and color is what you want to work with.

If you would like to customize the X configuration, please make sure the **Customize X Configuration** buttom is selected. If you choose to customize, you will be presented with another screen that lets you select how many colors you want (256, 65,536 or 16 mil) and what your resolution should be. Again, you will have the option of testing the configuration.

You may also choose to **Skip X Configuration** if you would rather set up X after the install or not at all.

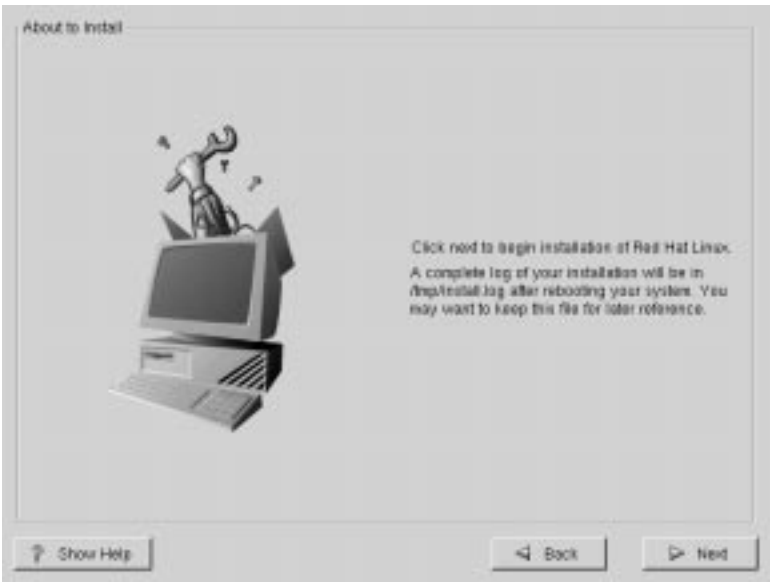
4.17 Preparing to Install

You will now see a screen preparing you for the actual installation of Red Hat Linux to your system (see Figure 4–19, *Ready to Install*).

WARNING

If for some reason you would rather not continue with the installation process, this is your last opportunity to safely reboot your machine. Once you press the Next button, partitions will be written and packages will be installed. If you wish to abort the installation, you should reboot now before your hard drive(s) are rewritten.

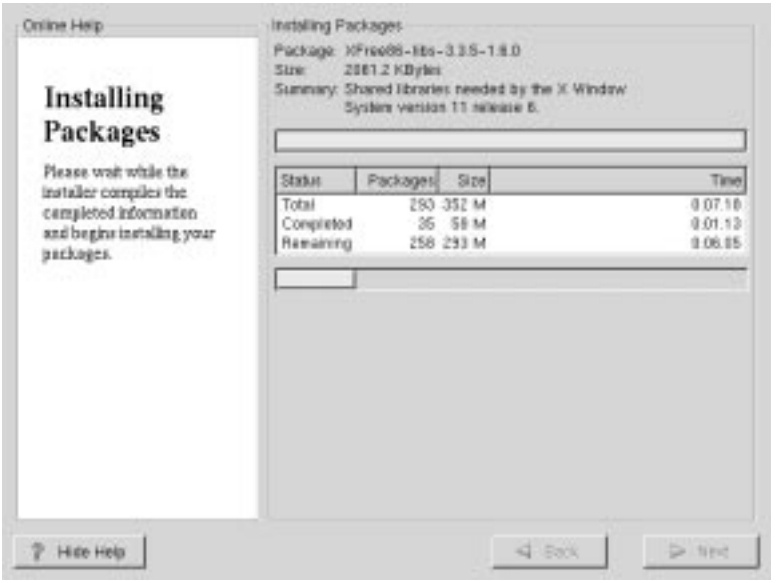
Figure 4–19 Ready to Install



4.18 Installing Packages

At this point there's nothing left for you to do until all the packages have been installed (see Figure 4–20, *Installing Packages*). How quickly this happens depends on the number of packages you've selected, and your computer's speed.

Figure 4–20 Installing Packages



4.19 Boot Disk Creation

If you chose to to create a boot disk, you should now insert a blank diskette into your floppy drive (see Figure 4–21, *Creating Your Boot Disk*).

After a short delay, your boot disk will be created. After removing it from your floppy drive, label it clearly. Note that if you would like to create a boot disk after the installation, you'll be able to do so. For more information, please see the `mkbootdisk` man page, by typing `man mkbootdisk` at the shell prompt.

If you boot your system with the boot disk (instead of LILO), make sure you create a new boot disk if you make any changes to your kernel.

Figure 4–21 Creating Your Boot Disk

4.20 Installation Complete

Congratulations! Your Red Hat Linux 6.1 installation is now complete!

The installation program will prompt you to prepare your system for reboot. Don't forget to remove any diskette in the floppy drive or CD in the CD-ROM drive. If you decided to skip installing LILO, you'll need to use your boot disk now (see Figure 4–22, *Installation Complete*).

Figure 4–22 Installation Complete

After your computer's normal power-up sequence has completed, you should see LILO's standard prompt, which is `boot:`. At the `boot:` prompt, you can do any of the following things:

- Press [Enter] -- Causes LILO's default boot entry to be booted.
- Enter a Boot Label, followed by [Enter] -- Causes LILO to boot the operating system corresponding to the entered boot label.
- Do Nothing -- After LILO's timeout period, (which, by default, is five seconds) LILO will automatically boot the default boot entry.

Do whatever is appropriate to boot Red Hat Linux. You should see one or more screens of messages scroll by. Eventually, you should see a `login:` prompt or a GUI login screen (if you installed the X Window System and chose to start X automatically).

If you're not sure what to do next, we suggest you begin with the *Official Red Hat Linux Getting Started Guide* as an introduction to using Red Hat Linux. The *Official Red Hat Linux Getting Started Guide* covers topics relating to the basics of your system and includes

the updated *GNOME User's Guide*. If you are a more experienced user, you may find the *Official Red Hat Linux Reference Guide* to be more helpful.

A Getting Technical Support

A.1 Remember to Sign Up

If you have an official edition of Red Hat Linux 6.1, please remember to sign up for the benefits you're entitled to as a Red Hat customer.

You'll be entitled to any or all of the following benefits, depending upon the Official Red Hat Linux product you purchased:

- Official Red Hat support -- Get help with your installation questions from Red Hat, Inc.'s support team.
- Priority FTP access -- No more late-night visits to congested mirror sites. Owners of Red Hat Linux 6.1 receive free access to priority.redhat.com, Red Hat's preferred customer FTP service, offering high bandwidth connections day and night.
- Red Hat Update Agent -- Receive e-mail directly from Red Hat as soon as updated RPMs are available. Use Update Agent filters to receive notification about only those subjects that interest you.
- Under the Brim: The Official Red Hat E-Newsletter -- Every month, get the latest news and product information directly from Red Hat.

To sign up, go to http://www.redhat.com/now. You'll find your **Personal Product ID** on a red and white card in your Official Red Hat Linux box.

A.2 An Overview of Red Hat Support

Red Hat provides installation assistance for Official Red Hat Linux boxed set products and covers installation on a single computer. This assistance is intended to help customers successfully install Red Hat Linux. Assistance with installation is offered via telephone and the Web.

Red Hat Support will attempt to answer any questions you may have before the installation process is initiated. This includes the following:

- Hardware compatibility questions
- Basic hard drive partitioning strategies

Red Hat, Inc. Support can also provide assistance during the installation process:

- Getting any supported hardware recognized by the Red Hat Linux operating system.
- Assistance with drive partitioning.
- Configuring Red Hat Linux and up to one other operating system (on Intel platforms only) to dual-boot using the Linux boot loader LILO. Please note that third party boot loaders and partitioning software are not supported.

We can also help you with basic post-installation tasks, such as:

- Successfully configuring the X Window System using XF86Setup or Xconfigurator.
- Configuring a local parallel port printer to print text.
- Configuring a mouse.

Our installation assistance service is designed to get you up and running with Red Hat Linux as quickly and as easily as possible. However, there are many other things that you may want to do with your Red Hat Linux system (from compiling a custom kernel to setting up a Web server) which are not covered.

For assistance with these tasks, there is a wealth of on-line information available in the form of HOWTO documents, Linux-related websites, and commercial publications. The Red Hat Linux operating sytem includes the various Linux HOWTO documents on the installation CD in the `/doc/HOWTO` directory as plain text files that can easily be read from within Red Hat Linux and other operating systems.

A large number of Linux-related websites are available. The best starting point for finding information on Red Hat Linux is the Red Hat, Inc. website at:

```
http://www.redhat.com/
```

Many Linux-related books are available. If you're new to Linux, a book that covers Linux basics will be invaluable. We can recommend several titles: *Using Linux* by Bill Ball; *Linux Clearly Explained* by Bryan Pfaffenberger; *Linux for Dummies* by Jon "maddog" Hall; and *A Practical Guide to Linux* by Mark G. Sobell.

Red Hat also offers various incident-based support plans to assist with configuration issues and tasks that are not covered by installation assistance. Please see the Red Hat Support website for more information. The Red Hat, Inc. Support website is located at the following URL:

```
http://www.redhat.com/support/
```

A.3 Scope of Red Hat Support

Red Hat, Inc. can only provide installation assistance to customers who have purchased an Official Red Hat Linux boxed set. If you have obtained Linux from any other company, you must contact that company for support. Examples of such companies are as follows:

- Macmillan
- Sams/Que
- Linux Systems Labs (LSL)
- Mandrake
- CheapBytes

Additionally, Red Hat Linux obtained via any of the following methods does not qualify for support from Red Hat:

- Red Hat Linux PowerTools Archive.
- Downloaded via FTP on the Internet.
- Included in a package such as Motif or Applixware.
- Copied or installed from another user's CD.

A.4 The Red Hat, Inc. Support System

As of October 1999, Red Hat, Inc. has implemented a new technical support system. If you signed up for technical support in the past with Red Hat, it may be necessary for you to sign up again. The new system will implement a unified login and password that will work across the entire Red Hat website. The support system will also automatically route and track service requests.

If you haven't signed up yet, then you should. Instructions for how to sign up are provided next, in Section A.5, *How to Get Technical Support*.

A.5 How to Get Technical Support

In order to receive technical support for your Official Red Hat product, you first have to sign up.

Every Official Red Hat product comes with a Personal Product Identification code: a 16 character alphanumeric string. The Personal Product ID for Red Hat Linux 6.1 is located on a red and white card that can be found inside the box. Your Personal Product ID is on a perforated card that you can punch out and keep in a safe place. You need this code, so don't lose the card!

Please Note

Do not throw away the card with your Personal Product ID. You need the Personal Product ID to get technical support. If you lose the certificate, you may not be able to receive support.

The Personal Product ID is the code that will enable your technical support and any other benefits or services that you purchased from Red Hat, depending upon which Red Hat product you purchased. The Personal Product ID may also enable priority FTP access, depending on the product that you purchased, for a limited amount of time.

A.5.1 Signing up for Technical Support

You'll need to:

1. Create a customer profile at http://www.redhat.com/now. You may have already completed this step; if you have, continue to the next step. If you do not already have a customer profile on the Red Hat website, please create a new one.
2. With your login name and password, please login at the Red Hat Support website at http://www.redhat.com/support.
3. Update your contact information if necessary.

Please Note

If your e-mail address is not correct, communications regarding your technical support requests CANNOT be delivered to you, and you will not be able to retrieve your login and password by e-mail. Be sure that you give us your correct e-mail address.

If you're worried about your privacy, please see Red Hat's privacy statement at http://www.redhat.com/legal/privacy_statement.html.

4. Add a product to your profile. Please enter the following information:
   - The Personal Product ID for the boxed set product.
   - A description of the hardware on which the Red Hat Linux product will be installed.
   - The Support Certificate Number or Entitlement Number if the product is a contract.
5. Set your customer preferences.
6. Answer the optional customer questionnaire.
7. Submit the form.

If the previous steps were completed successfully, you can now login at http://www.redhat.com/support and open a new technical service request. However, you must still use your Personal Product ID in order to obtain technical support via telephone (if the product you purchased came with phone support). Please do not lose your Personal Product ID, or you might not be able to receive support.

A.6 Questions for Technical Support

Technical support is both a science and a mystical art form. In most cases, support technicians must rely on customer observations and communications with the customer in order to diagnose and solve the problem. Therefore, it is extremely important that you are as detailed and clear as possible when you state your questions and report your problems. Examples of what you should include are:

- Symptoms of the problem, for example: "Linux is not able to access my CD-ROM drive. When it tries, I get timeout errors."
- When the problem began, for example: "My system was working fine until yesterday, when a lightning storm hit my area."
- Any changes you made to your system, for example: "I added a new hard drive and used ‘Partition Wizzo’ to add Linux partitions."
- Other information that may be relevant to your situation, such as the installation method (CD-ROM, NFS, HTTP).

A.6.1 How to Send Support Questions

Please login at http://www.redhat.com/support and open a new service request, or call the phone number for support. If your product came with phone support, or you’ve purchased a

phone support contract, the phone number you'll need to call will be provided to you during the sign up process.

A.7 Support Frequently Asked Questions (FAQ)

A.7.1 Q: E-Mail Messages to support@redhat.com Bounce

I send e-mail to support@redhat.com but my messages bounce back to me. What is the problem?

A.7.2 A: support@redhat.com Is Not Used at This Time

To better serve our customers, Red Hat is re-engineering our e-mail support process. At this time, the support@redhat.com address is not functional. In the meantime, please use support via the Web or by telephone.

A.7.3 Q: System Won't Allow Login

I know that I have already signed up, but the system will not let me log in.

A.7.4 A: Old Logins and Passwords Won't Work

You could be trying to use an old login and password, or simply mistyping your login or password.

B Making Installation Diskettes

It is sometimes necessary to create a diskette from an **image file** (for example, you might need to use updated diskette images obtained from the Red Hat Linux Errata).

As the name implies, an image file is a file that contains an exact copy (or image) of a diskette's contents. Since a diskette contains filesystem information in addition to the data contained in files, the image file is not usable until it has been written to a diskette.

To start, you'll need a blank, formatted, high-density (1.44 MB), 3.5-inch diskette. You'll need access to a computer with a 3.5-inch diskette drive, and capable of running a DOS program, or the `dd` utility program found on most Linux-like operating systems.

The image files are found in the following directories on your Red Hat Linux CD:

- `images` -- Contains the boot images for Red Hat Linux/Intel, and the various kernel and ramdisk images for Red Hat Linux/Alpha.

  On the Red Hat Linux/SPARC CD, this directory contains the boot image, and an image for network booting.

- `milo` -- Contains the various images for the Red Hat Linux/Alpha miniloader, MILO. This directory exists only on Red Hat Linux/Alpha CDs.

Once you've selected the proper image, it's time to transfer the image file onto a diskette. As mentioned previously, this can be done on a DOS-capable system, or on a system running a Linux-like operating system.

B.1 Making a Diskette Under MS-DOS

To make a diskette under MS-DOS, use the `rawrite` utility included on the Red Hat Linux CD in the `dosutils` directory. First, label a blank, formatted 3.5-inch diskette appropriately ("Boot Diskette," "Supplemental Diskette," etc). Insert it into the diskette drive. Then, use the following commands (assuming your CD is drive `d:`):

```
C:\> d:
D:\> cd \dosutils
D:\dosutils> rawrite
Enter disk image source file name: ..\images\boot.img
Enter target diskette drive: a:
Please insert a formatted diskette into drive A: and
press --ENTER-- : [Enter]
```

```
D:\dosutils>
```

`rawrite` first asks you for the filename of a diskette image; enter the directory and name of the image you wish to write (for example, `..\images\boot.img`). Then `rawrite` asks for a diskette drive to write the image to; enter `a:`. Finally, `rawrite` asks for confirmation that a formatted diskette is in the drive you've selected. After pressing [Enter] to confirm, `rawrite` copies the image file onto the diskette. If you need to make another diskette, label another diskette, and run `rawrite` again, specifying the appropriate image file.

B.2 Making a Diskette Under a Linux-like O/S

To make a diskette under Linux (or any other Linux-like operating system), you must have permission to write to the device representing a 3.5-inch diskette drive (known as `/dev/fd0` under Linux). First, label a blank, formatted diskette appropriately ("Boot Diskette," "Supplemental Diskette," etc.). Insert it into the diskette drive (but don't issue a `mount` command). After mounting the Red Hat Linux CD, change directory to the directory containing the desired image file, and use the following command (changing the name of the image file and diskette device as appropriate):

```
# dd if=boot.img of=/dev/fd0 bs=1440k
```

If you need to make another diskette, label another diskette, and run `dd` again, specifying the appropriate image file.

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