Red Hat Linux 7.2

The Official Red Hat Linux Getting Started Guide

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Introduction

Welcome to the *Official Red Hat Linux Getting Started Guide*!

By now, you should have read the *Official Red Hat Linux Installation Guide* and successfully installed Red Hat Linux. This manual is designed to help new and intermediate Linux users navigate and perform common tasks. Keep in mind that Linux looks, feels, and performs differently from other operating systems you may have used. Forget about the conventions of other operating systems and with an open mind, approach Red Hat Linux as a new, interesting, and versatile alternative.

This manual is task-oriented. You will find useful tips, hints, warnings, and screen shots interspersed throughout. First, you will learn the basics of using Red Hat Linux, such as customizing a desktop, configuring a printer, and getting online. Once the basics are covered, the tasks covered in this manual become progressively more advanced.

Most users choose to work within either the GNOME or KDE graphical desktop environments (other desktop environments are available). The *Official Red Hat Linux Getting Started Guide* focuses primarily on how to perform tasks in these two environments.

Topics discussed include:

- Using the GNOME and KDE graphical desktop environments
- Managing files and directories
- Navigating the filesystem
- Connecting to the Internet
- Upgrading applications
- And links to online resources covering common questions and answers, computer basics, an explanation of Red Hat Linux system directories, and more.

After conquering the basics of your Red Hat Linux system, you may need information on more advanced topics. You can find this information in the *Official Red Hat Linux Customization Guide* and the *Official Red Hat Linux Reference Guide*. All of our manuals are available in HTML and PDF formats at http://www.redhat.com/support/manuals.

About This Manual — Read This? Please?

This book explains how to get started with Red Hat Linux using both the graphical user interface and the shell prompt. New users tend to be more comfortable using the graphical interface, so each chapter explains graphical procedures first and shell prompt procedures second (see *A Note About Environments* and Chapter 10, *Shell Prompt Basics* for more on working from the shell prompt).

Also, there are chapters in the printed version of this manual that contain only general explanations of the topic at hand (specifically Chapter 9, *Manipulating Images With GIMP*, Chapter 10, *Shell Prompt Basics*, and Chapter 12, *Updating and Adding Packages to Red Hat Linux*). The documentation CD and the Red Hat website (http://www.redhat.com) have the Official Red Hat Linux Getting Started Guide in its entirety. This non-printed information is certainly important, but not vital to getting started with Red Hat Linux. Placing this information online helps keep the printed manual smaller, easier to handle, and more focused.

Introductory Terms

When you learn about a new operating system, you also need to learn new terminology. Here are a few basic terms you should learn. You will see these terms often:

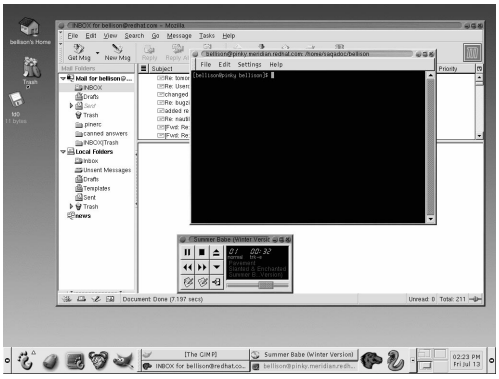
- **Shell prompt**: A software interface (similar to a DOS screen) between the user and the operating system. The shell interprets commands entered by the user and passes them on to the operating system. The shell prompt displays the command line.
- **Command line**: The place in the shell prompt where commands are typed.
- **Command**: An instruction given to the computer, most often with the keyboard or mouse.
- **Graphical User Interface (GUI)**: A screen with icons, menus, and panels for the user to click on to initiate functions.
- **GNOME and KDE**: Two popular GUIs included with Red Hat Linux.
- **Panel**: A GUI environment toolbar, usually located across the bottom of the screen. The panel contains the main menu button, among other things, and can be customized by the user.
- **Root**: The root user account is created during installation and has complete access to your system. You must be logged in as root to accomplish certain system administration tasks. User accounts are created so typical user tasks can be done without using the root account, to reduce the chance of damaging your OS.
- **su** and **su -**: The command `su` gives you access to the root account or other accounts on your system. When you `su` to root, or switch to your root account while still inside your user account shell, you have access to important system files that you can change, or damage, permanently. Logging in with the `su -` command makes you root within the root account shell. If you log in as root with `su -`, you have access to certain commands that the `su` command does not grant. Use caution when you are logged in as root.
- **Man page** and **info page**: Man (short for manual) and info pages give detailed information about a command or file (man pages tend to be brief and provide less explanation than info pages). To read the man page for the `su` command, for example, type `man su` at a shell prompt (or type `info su` for the info page). To close one of these pages, press [q].

- **X** or **X Window System**: These terms refer to the graphical user interface environments. If you are "in X" or "running X" you are working in a GUI rather than a console environment.
- **Console**: Console, shell prompt, terminal, "the screen that looks like DOS" — these are all the same thing: a non-graphical interface. This environment has no icons, limited menus, and requires that you type commands to perform tasks, rather than pointing and clicking with your mouse.
- **RPM**: An RPM is a software package file you can install on your computer. All Red Hat Linux files are available as RPMs.

A Note About Environments

Your Red Hat Linux system is more than the graphical user interface. However, most new and intermediate users are likely to work within the graphical environment. The Official Red Hat Linux Getting Started Guide demonstrates the techniques behind accomplishing tasks in two popular environments: GNOME (as shown in Figure 1, *A GNOME Desktop*) and KDE.

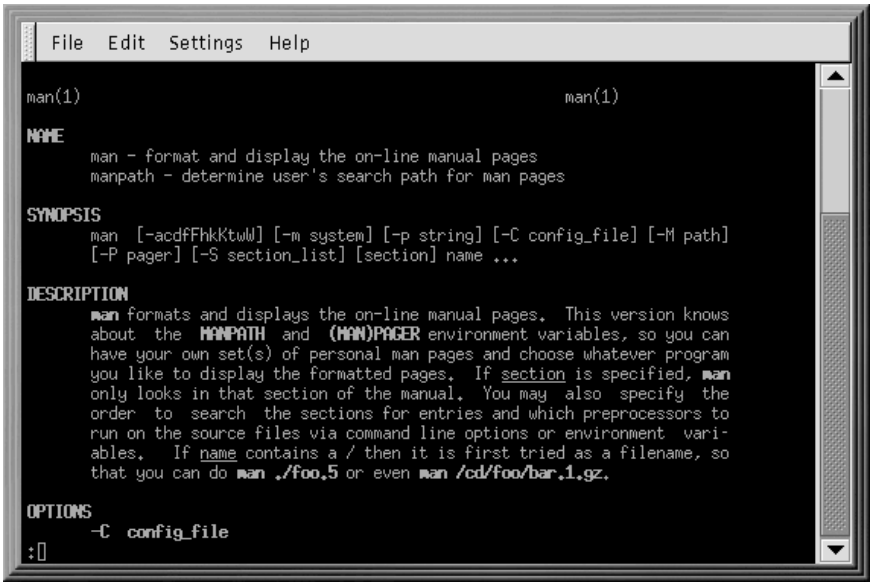
Figure 1 A GNOME Desktop



In addition to the chapters covering KDE and GNOME, this guide contains plenty of useful information on using the shell prompt (as shown in Figure 2, *Viewing Text in a Shell Prompt*). Using the shell prompt requires typing commands to perform tasks, as opposed to using the menus and icons in a graphical environment. The shell prompt can often perform tasks faster than a graphical environment, but may take more time and effort to learn to use. The shell prompt is something that Linux users generally become comfortable with over time.

Do not let the appearance of one of these text screens intimidate you. The shell prompt is a lot easier to use than you might think and it often lets you perform tasks much more quickly than you can in a graphical environment. Give it a chance, be patient, and give yourself time to learn.

Figure 2 Viewing Text in a Shell Prompt

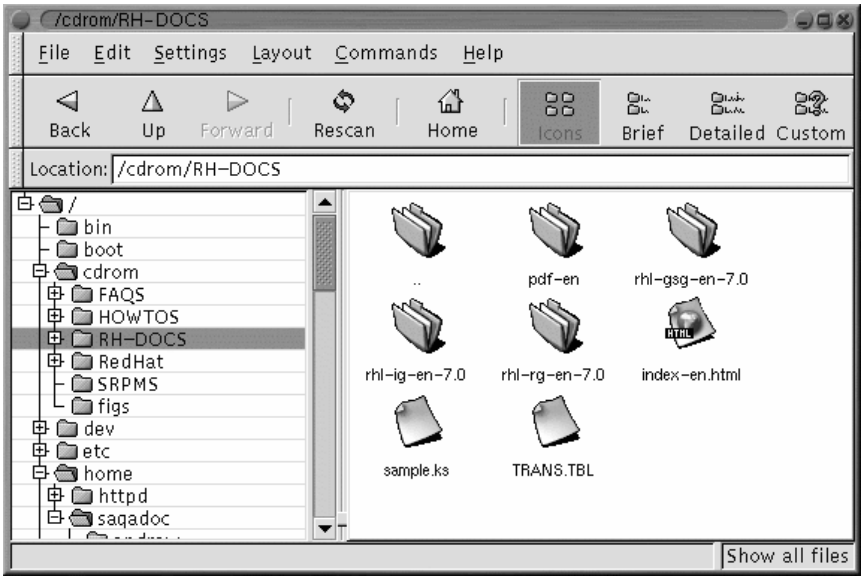


Documentation Resources

If you have the Official Red Hat Linux boxed set, remember to take a look through the Red Hat Linux 7.2 Documentation CD. All of our manuals are on this CD, as well as other useful resources. Inserting the Documentation CD in the CD-ROM drive should automatically open the file manager (Obviously, you will need to be logged in to do this. See Chapter 1, *Getting Started* for information on how to log in). If the file manager does not open automatically after a minute or so, right-click on the CD-ROM icon on your desktop and select **Mount Device** or **Mount**, whichever appears on the pop-up menu.

When the file manager opens, click on **RH-DOCS** in the left window. On the right, you will see several files. There are three ways to view the manuals:

Figure 3 Documentation CD Files



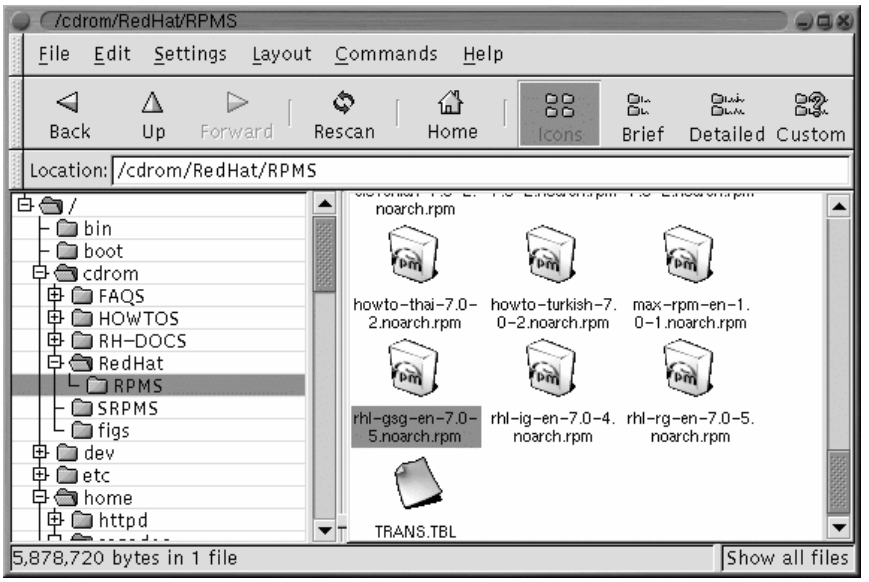
View in PDF format.

You will see one file whose name starts with the letters "pdf". Click on this to view the manuals in PDF format.

Install the manuals on your computer.

Files beginning with the letters "rhl" can be installed on your system. To do this, select the /cdrom/Red-Hat directory in the left window of the file manager. Expand the folder (click on the + sign) and then click on RPMS beneath it. You will see a variety of documentation files on the right.

Figure 4 Installing Documentation Files



Scroll through the right side of the file manager screen and look for files beginning with the letters "rhl" (as shown in Figure 4, *Installing Documentation Files*. There will be one file for each of our four manuals. The file names contain the abbreviations IG, RG, CG, and GSG, corresponding to the Installation, Reference, Customization, and Getting Started guides respectively.

Now, open a terminal by clicking on the **Terminal Emulation Program** button on the panel at the bottom of your desktop. Type the following at the command line:

```
cd su
```

Now press [Enter]. You will be asked for your root password. Enter the password at the command line and press [Enter]. You are now logged in as root. To install all four manuals, type the following:

```
rpm -ivh rhl-*.rpm
```

Press [Enter].

If you only want to install certain manuals, replace "rhl-*.rpm" with the full file name (as shown in the right window of the file manager) of the manual that you want to install. For example, the file name for the Official Red Hat Linux Getting Started Guide will look something like rhl-gsg-en-7.2-5.noarch.rpm, so you would type the following to install the Official Red Hat Linux Getting Started Guide on your computer:

```
rpm -ivh rhl-gsg-en-7.2-5.noarch.rpm
```

Press [Enter]. Type **exit** at the command line and press [Enter]. This takes you out of the root login and back to your user account.

Now go to **Main Menu** =>**Programs** => **Documentation** => **Official Red Hat Linux** and select the manual you want to open. It will automatically open in a Web browser.

View manuals online (HTML).

Look under **RH-DOCS** in the file manager tree. The file that ends with the letters "html" opens the manuals for viewing in a Web browser without installing them on your system. Double-click on the .html file in the file manager and you will see a screen with links to all of the manuals. At the bottom of this page, there is a link to the opening page of the documentation CD. The opening page has links to a variety of Linux documentation resources.

Of course, you can also go to http://www.redhat.com/support/manuals and bookmark the site. All of the manuals are available there in PDF and HTML format.

We Need Feedback!

If you spot a typographical error in the *Official Red Hat Linux Getting Started Guide*, or if you have thought of a way to make this manual better, we would love to hear from you! Please submit a report in Bugzilla (http://bugzilla.redhat.com/bugzilla) against the component rhl-gsg.

Be sure to mention the manual's identifier:

```
rhl-gsg(EN)-7.2-Print-RHI (2001-09-12T11:19-0400)
```

If you mention the manual's identifier, we will know exactly which version of the guide you have.

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

Sign Up for Support

If you have an official edition of Red Hat Linux 7.2, please remember to sign up for the benefits you are entitled to as a Red Hat customer.

Depending on which Official Red Hat Linux product you purchased, you can receive any or all of the following benefits:

- Official Red Hat support — Get help with your installation questions from Red Hat, Inc.'s support team.

- Red Hat Network — Use Red Hat Network to automatically retrieve and install system and security updates, as well as other packages.
- *Under the Brim: The Official Red Hat E-Newsletter* Red Hat Linux Every month, get the latest news and product information directly from Red Hat.

To sign up, go to http://www.redhat.com/apps/activate. You will find your Product ID on the black, red and white registration card in your Official Red Hat Linux box.

And for even more support, go to http://www.redhat.com/support/ where you will find plenty of information on documentation, support programs, updates, and more.

Good luck and enjoy your new Red Hat Linux system!

The Red Hat Documentation Team

Part I The Basics

1 Getting Started

Time to get started. The first thing you have to do is log in. When you log in, you are basically introducing yourself to the system.

Linux is Case Sensitive

Like UNIX, Linux is case sensitive. That means that typing "root" refers to a different account than "Root". As far as Linux is concerned, the lowercase "root" refers to the root login, or system administrator.

When you installed Red Hat Linux, you had the opportunity to install the X Window System (also simply called X), which provides the display of graphical information. You were also asked whether you wanted to use a graphical screen, rather than a console (or shell prompt) to log in. A graphical screen has icons, lots of menus, and is generally more approachable for a new user. A console, or shell prompt, resembles an MS-DOS screen and requires the use of specific phrases or commands, which the user types at the command line. Although our emphasis throughout this book will be on navigation and productivity using X, we will cover both the graphical and console methods of logging in and starting the X Window System.

1.1 Logging In

Unlike some other operating systems, your Red Hat Linux system uses accounts to manage privileges, maintain security, and more. Not all accounts are created equal: some accounts have fewer rights to access files or services than others.

If you have already created a user account, you can skip ahead to Chapter 2, *The GNOME Desktop Environment*. If you created only the root account, read on to learn how to set up a user account.

Because your Red Hat Linux system creates the root account during installation, some new users are tempted to use only this account for all their activities. This is a bad idea. Since the root account is allowed to do anything on the system, you can easily damage your system by accidentally deleting or modifying sensitive system files. You may be tempted to forego creating and using a user account during or after installation, but this is risky.

1.1.1 Logging In As Root

If you did not create a user account during installation, you must log in as root. Regardless of whether you have chosen a graphical or console login screen, you will have to supply a login account name and the password associated with that account.

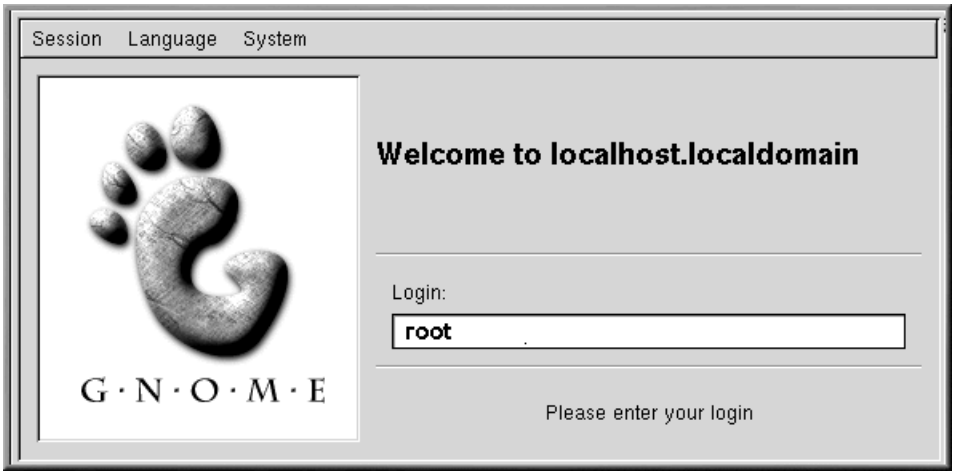
From a shell prompt, for example, you will see something like:

```
Red Hat Linux release 7.0
Kernel 2.xx on an i686
localhost login:root
Password:yourrootpassword
```

Unless you have chosen to give your machine its own **hostname**, which is primarily used in a network setting, your machine will probably be called **localhost**.

To log in to the root account, type **root** at the login prompt and press [Enter]. Then type the root password you chose during installation at the password prompt and press [Enter].

Figure 1–1 The Graphical Login Screen



If you see a shell prompt (instead of the graphical desktop as shown in Figure 1–1, *The Graphical Login Screen*) you can start the X Window System by typing **startx** as follows:

```
[root@localhost /root]# startx
```

Changing Your Login Screen

To find out how you can change from a console to a graphical login screen see Section 13.14, *Changing Login from Console to X at Startup*.

Once you start the X Window System, you will find a desktop similar to Figure 1–2, *A GNOME Desktop* in GNOME or Figure 1–3, *A KDE Desktop* in KDE.

Figure 1–2 A GNOME Desktop

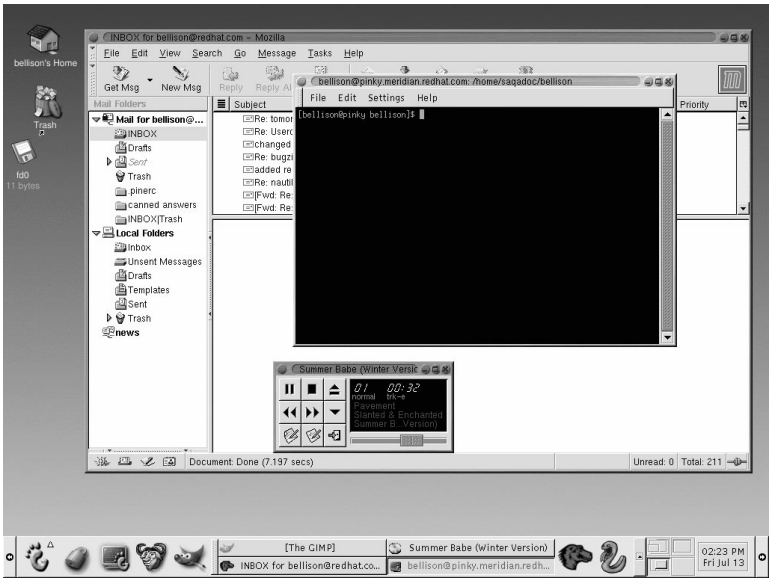
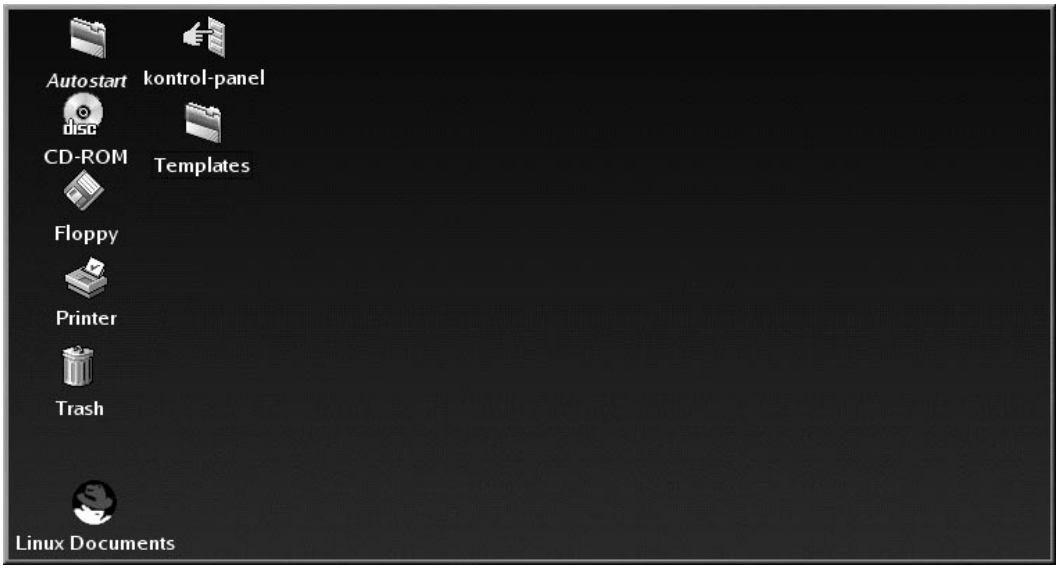


Figure 1–3 A KDE Desktop



1.1.2 Opening a Terminal Window

Both GNOME and KDE offer quick launch buttons on their panels to open a terminal window, also referred to as a shell prompt.

Figure 1–4 The GNOME Panel

On the GNOME panel, the button that launches a shell prompt looks like: 

Similar to GNOME, the KDE panel prominently features a quick launch button for a shell prompt. The launcher looks like: 

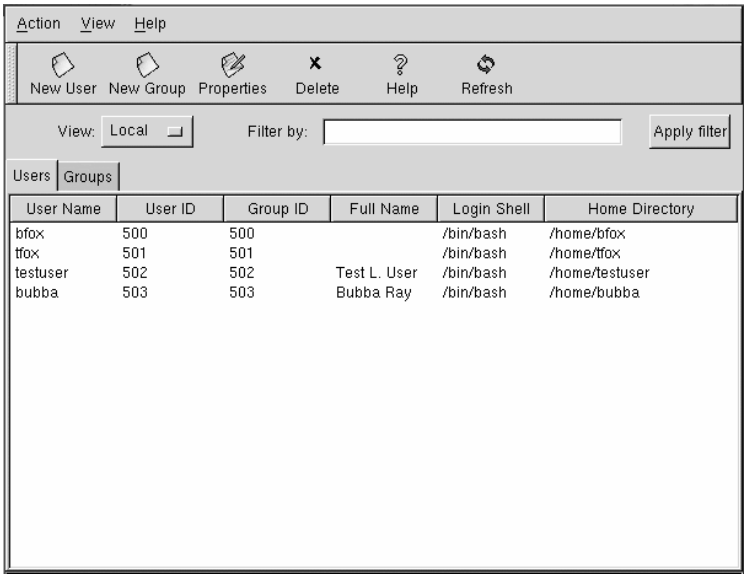
You can also find the launcher from the KDE main menu under **System**=> **Terminal**.

1.2 Creating a user account

When you installed Red Hat Linux you were given the opportunity to create user accounts. If you did not create at least one (not including the root account) you should do so now. Working in root when you do not absolutely have to is a bad idea.

There are two ways to create new and/or additional user accounts: from a GUI, using the user configuration tool; and from a shell prompt.

Figure 1–5 The User Configuration Tool



To create a user account from a GUI:

1. Log in. If you only have a root account, you must log in as root. If you are already logged in to a user account and want to create more accounts, you do not have to change to root; you will be prompted for the root password later.
2. In GNOME, click on the **Start Here** button on the panel at the bottom of your desktop. In the new window that opens, click on the **System Settings** icon and then on the icon for the user configuration tool (if you are not logged in as root, you will be prompted to enter the root password). In KDE, go to **Main Menu** => **System** => **User Manager**.
3. When the configuration tool opens (Figure 1–5, *The User Configuration Tool*), click on **New User**.

4. Fill in the user name (this can be an abbreviation or some sort of nickname), the full name of the user for whom this account is being created, and a password (which you will enter a second time for verification). The name of this user's home directory and the name of the login shell should appear by default.

5. Click on **OK**. The user account creation is complete.

To create a user account from a shell prompt:

1. Open a terminal and log in as root.

2. Type **useradd** followed by a space and the username for the new account you are creating at the command line (for example, **useradd *beth***. Press [Enter].

3. Now type **passwd** followed by a space and the username again (**passwd *beth***).

4. The shell prompt should display `New UNIX password`. This is asking you to enter a password for the new account. Type the password you want to apply to this account and press [Enter].

5. You will be asked to enter the password again for confirmation. Then you will see the following message, indicating that the new account has been created:

```
passwd: all authentication tokens updated successfully
```

Choosing Account Names

Often, user accounts are just variations on the user's name, such as jsmith for John Smith. User account names can be anything from your name, initials, or birthday to something more creative.

What is a Secure Password?

You can be fancy or plain when you pick a user account name, but take precautions when you choose a password. The password is the key to your account, so it should be both unique and easy for you to remember. Your password should be at least six characters (actually, it can be 256 characters long if you enabled MD5 passwords during the installation, though you probably do not need that many). You can mix upper- and lowercase letters, as well as numbers and characters. Avoid easy selections, such as "qwerty" or "password." If you want to pick an easy-to-remember but somewhat unique password, consider a variation of a word, such as "a!rPl8nE" for "airplane."

You can exit from a terminal window by clicking the **X** button on the upper right corner of the window, or by typing **`exit`** at the prompt.

Forgot Your Password?

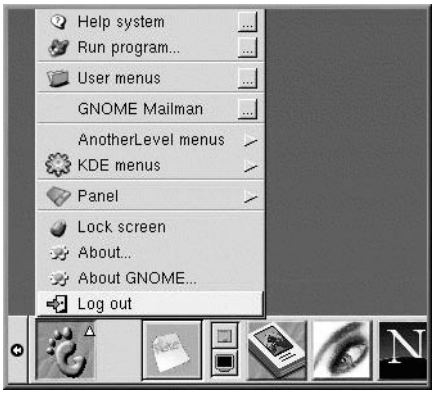
See (Section 13.13, *Forgotten Password*) for information on what to do if you forget your root or user account password.

1.3 Logging Out of Root

Remember, working in your root account unless you have to is a bad idea. You could unwittingly (and permanently) alter files that are critical to the proper performance of the operating system. Now that you have created at least one user account, log out of root and log in to a user account.

To log out from GNOME, go to **Main Menu Button** => **Log out** (as shown in Figure 1–6, *The Log out Selection*) or simply type **`exit`** at the shell prompt.

Figure 1–6 The Log out Selection



When the confirmation dialog appears (see Figure 1–7, *Logout Confirmation*), select the **Logout** option and click the **Yes** button. If you want to save the configuration of your panel, as well as any programs which are running, check the **Save current setup** option, as well.

Figure 1–7 Logout Confirmation

Similarly, in KDE, you can log out of root by going to **Main Menu** => **Logout** or by simply typing **`exit`** at the shell prompt.

By default, the panel in KDE also contains a quick launch button to log out; it is located near the taskbar, at the center of the panel, and looks like: 

Now, you can log into your user account the same way you logged in as root.

2 The GNOME Desktop Environment

2.1 GNOME Fundamentals

GNOME is a flexible and user-friendly way to use a graphical user interface with Red Hat Linux.

This chapter covers the fundamentals of GNOME and its file manager, Nautilus. In later chapters, you will find greater detail about tasks such as connecting a printer and setting up your Internet account.

You will find the latest GNOME-related information at the the official GNOME website: http://www.gnome.org.

If You Want To Use GNOME and KDE Applications

If you have both GNOME and KDE on your system, you can often use applications from the other environment. For example, you can use the KDE email client, KMail, even if you are working in GNOME.

Choose Double-Click or Single-Click

You can configure the mouse to activate files and applications with a double- or a single-click, whichever you prefer. Click on the icon for the Nautilus **Start Here** screen on the desktop (there is also one on the panel). This opens the file manager. Click on **Preferences** at the top of the screen and then select **Edit Preferences**. The preferences screen opens, showing a list of configurable options on the left. Click on **Icon and List Views**. Now make your selection for double or single mouse click in the top section of this window. Click on **Ok** and this change takes place immediately.

2.2 The Desktop

Your first view of GNOME will look something like Figure 2–1, *A GNOME Desktop*.

Figure 2–1 A GNOME Desktop

The GNOME environment is called a desktop. This is the area where you have application launchers, document windows, lists of files (folders), and so on.

The long bar across the bottom of the desktop is known as the panel. The panel displays application launchers and status indicators, such as the current time, minimized applications you are running, and more.

The icons elsewhere on the desktop can be file folders or application launchers. To open a folder or launch an application, double-click on its icon.

Minimizing & Maximizing Screens

A screen can be minimized, or "hidden", by clicking on the _ in the upper-left corner. Buttons for minimized screens appear in the panel at the bottom of the screen. Click on a button to maximize its' screen. If you have your panel hidden, middle-click on the desktop and place your cursor over **Windows**. A list of open screens appears and you can select the one you want to maximize.

You can add icons to the desktop to provide you with quick launchers to applications or files (a CD player, your floppy drive, etc.) Drag and drop icons from the panel, an open file manager window, or the GNOME main menu.

Mounting a Device

Ordinarily, you can use your drives (floppy, CD, etc) just by clicking on them. Most devices are now mounted automatically. But occasionally you may get an error message, telling you a device needs to be mounted. When you mount a floppy or CD-ROM, you are making that device's contents available to you. For example, to mount a CD-ROM, type the following command at a shell prompt:

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

This command tells the system which device (/dev/cdrom) to mount and where to mount it (on the /mnt/cdrom directory).

2.3 The Nautilus File Manager

Nautilus is a primary part of the GNOME desktop. It gives you easy access to files, applications, the Internet, and more in one central place.

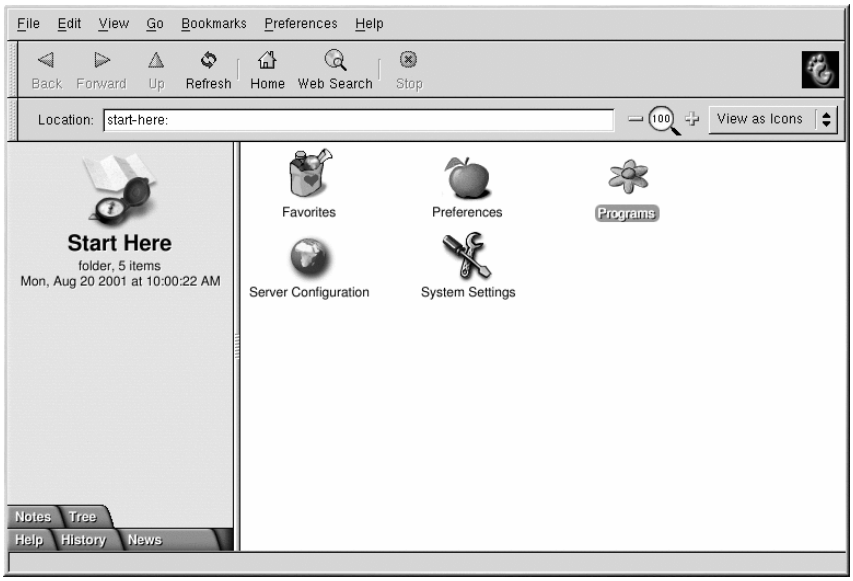
The Nautilus **Start Here** screen (Figure 2–2, *The Start Here Screen*) opens automatically when you log in to GNOME. If you close the screen, you can open it again by clicking on one of the **Start Here** icons, located on the desktop and the panel, or by selecting **Start Here** from the GNOME main menu.

With Nautilus, you can:

- Save frequently used items in the **Favorites** folder for quick access.
- View the contents of your home directory with one button click.
- Quickly open the Sawfish control center and other tools that change the way GNOME looks and acts.
- Add additional directories to the **Start Here** screen for fast access and to help you keep your work organized.
- Configure your Internet connection, add new user accounts, set up a server, and more.

Working in Nautilus is efficient and easy, and it lets you avoid the long, cluttered menus that are often found connected to the main menu button. The following sections explain how to use the various menu options and icons in Nautilus.

Figure 2–2 The Start Here Screen

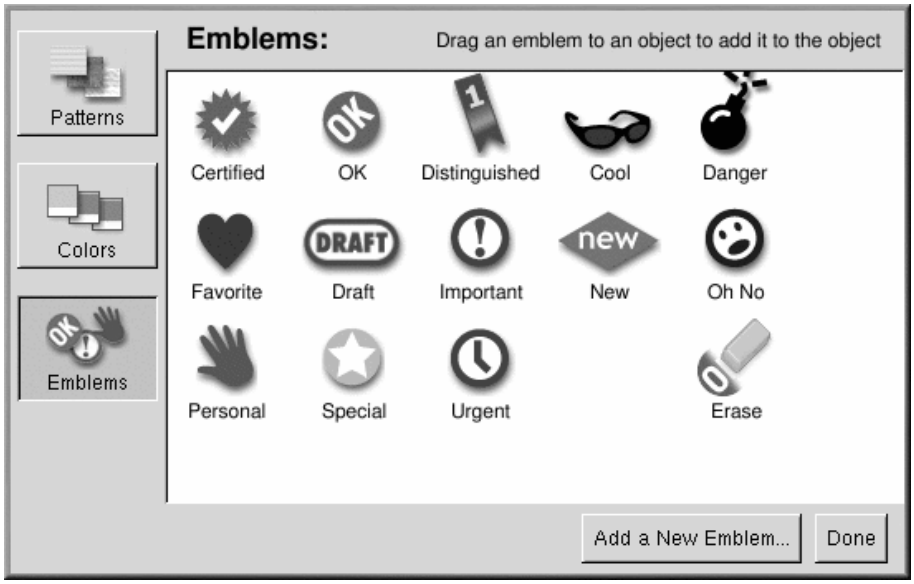


The **Start Here** screen has a main menu, a toolbar, and, on the right side of the screen, a number of icons. On the left is the sidebar, which shows the file or webpage in which you are currently working, and beneath this there are five tabs. Each of these elements is explained below.

2.3.1 *Main Menu*

- **File** — these options are somewhat standard. They also change depending on what you are viewing; files have different options than webpages. Choose options here to open new windows, create new folders, search the Web, rename files, move items to the trash, and more.
- **Edit** — contains the standard cut, copy, and paste options, and options for customizing icons. Select **Backgrounds and Emblems** to customize those elements of your desktop and Nautilus screen (see Figure 2–3, *Backgrounds and Emblems Selection*).

Figure 2–3 Backgrounds and Emblems Selection



- **View** — contains options for hiding/showing the various navigational bars on the screen, zoom options, the order in which items are arranged, view items as icons or a list, and more.
- **Go** — contains navigation options (back, forward, home, etc.) and a list of recently viewed screens. Select from this list and you will be returned to the screen you choose.
- **Bookmarks** — select to add or edit bookmarks, or choose one of the built-in bookmarks. To remove these built-in bookmarks, click on **Preferences** on the main menu and then click on **Navigation** in the screen that opens. The option to remove built-in bookmarks is on this screen.
- **Preferences** — see Chapter 4, *Customizing Your Desktop* for details on selecting preferences and customizing your desktop.
- **Help** — choose from these options for more Nautilus information or choose **Support** to open the Red Hat support webpage.

2.3.2 *The Toolbar*

The toolbar shows standard **Back/Forward** navigational buttons that move you back and forth between the pages you have viewed. **Up** moves you up one level in the file directory (see Chapter 11, *Managing Files and Directories* for information on the file system).

Refresh reloads the current screen (can be helpful if a page appears fuzzy). **Home** displays the home directory by default. You can have this button display any file or website you want by clicking on **Preferences** and then **Edit Preferences** on the main menu and selecting **Navigation** on the screen that appears. Enter the file path or URL of your choice in the **Home Location** field.

Web Search opens a search engine in the Nautilus screen. This option also displays a list of Web browsers you can use to continue your search or display the page you choose after a search. This frees up the Nautilus screen for other tasks.

Stop interrupts the downloading or display of a page or file you have selected to view.

2.3.3 *The Sidebar*

On the left of the Nautilus screen is the sidebar. It displays the name of the directory or file you are working in or Web browser options when you view a webpage.

At the bottom of the sidebar are five tabs. Click on a tab to open it and click it again to close it.

- **Notes** — leave yourself notes about the file, directory, or webpage you are currently viewing.
- **Tree** — shows the file directory as a tree.
- **Help** — provides links to GNOME and Nautilus documentation and more.
- **History** — shows a list of pages you have viewed during your current session. Click on a page name in this list to return to it.
- **News** — shows current news headlines. Click on **Select Sites** for a list of news websites from which you want headlines displayed. Click on **Edit** to add or remove sites to or from this list. **Done** displays the main news tab.

2.3.4 *The Start Here Window*

The **Start Here** screen displays automatically by default. It contains four icons that access packages you have installed and one for storing favorites.

- **Favorites** — drag and drop or cut and paste favorite files or application launchers here.
- **Preferences** — opens the control center. Configure multimedia, session, desktop, and peripheral settings here. You also access the Sawfish window manager here (see Chapter 4, *Customizing Your Desktop* for more on customizing the desktop with Sawfish).
- **Programs** — opens a screen displaying categories for GNOME applications you have installed. Click on a category to access launchers for its respective applications.
- **Server Configuration** — displays links to Samba, Bind, and other server configuration tools, if installed. See the *Official Red Hat Linux Customization Guide* and the *Official Red Hat Linux Reference Guide* for information on these tools.

- **System Settings** — displays links to the Internet, network, printer, date/time, and service configuration tools. Also has links to the hardware browser and the user manager. Use the user manager to add, edit, or delete user accounts.

Notification Options

Once you select an application you want to launch, GNOME can display a screen that lets you know the application is loading and will be ready shortly. To activate this option, open Nautilus by clicking on the **Start Here** icon on the panel. In the screens that follow, click on **Preferences**, **Desktop**, and **Launch Feedback** respectively.

Select **Display splashscreen** or **Display animated star** in the **Notification Options** screen to have one or the other display when you launch an application. You can also add an hourglass to your cursor as an indicator that a file or application is launching.

2.4 The Panel

Like much of GNOME, the panel is highly configurable (see Figure 2–4, *The Panel at the Bottom of the Desktop*).

From the panel, you can launch applications and applets (small applications and utilities which are meant to be docked into the panel). Among the applets already running on the panel are the GNOME Pager and clock applet. Click on the **Main Menu** button and go to **Applets** to see the available applets.

You can hide the panel automatically or manually, place it on any edge of your desktop, change its size and color, and more. Right-click on the panel and select **Panel** => **Properties**. Then select **All Properties** to open a general window for adjusting all panel setting, or one of the specific properties (Hiding Policy, Background Type, Size, etc.).

Elements of the GNOME Pager

The GNOME Pager consists of the Desk Guide, which is a visual representation of your desktops, and the Tasklist, which shows your running applications.

For more on the Desk Guide and GNOME Pager, see Section 2.7, *Multiple Desktops*.

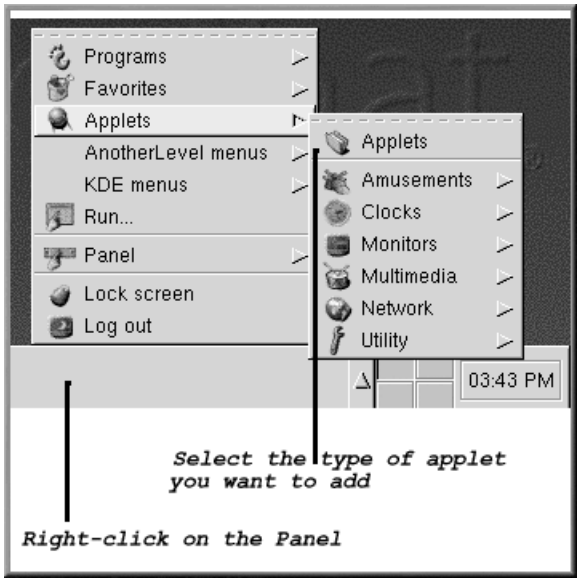
Applications, folders, and applets can be docked on the panel, so that they can be launched with a single mouse click.

Figure 2–4 The Panel at the Bottom of the Desktop

To add an applet, do one of the following:

- Right-click on the panel; select **Applet** and choose from the list of applets (see Figure 2–5, *Adding an Applet*).

Figure 2–5 Adding an Applet



- Choose **Applets** from the Main Menu button and choose from the list of applets.

Switch Tasks Quickly

One way to bring currently running applications to the front is to press [Alt]-[Tab]. To scroll through the tasks, hold down the [Alt] key, while pressing the [Tab] key in succession. When you have found the task you want to bring to the front, stop pressing the [Tab] key and release the [Alt] key.

2.5 Main Menu Button

The stylized GNOME footprint on the panel is the **Main Menu Button**. Left-click on the button to expand it.

From here, you can start all the included applications and applets for GNOME (or use Nautilus—see Section 2.3, *The Nautilus File Manager*); you also have access to KDE applications, under **KDE menus** (if KDE is installed on your machine). These submenus give you access to a full range of applications on your system. From the **Main Menu Button**, you can also log out, run applications from a command line, and lock your screen, which runs a password protected screensaver.

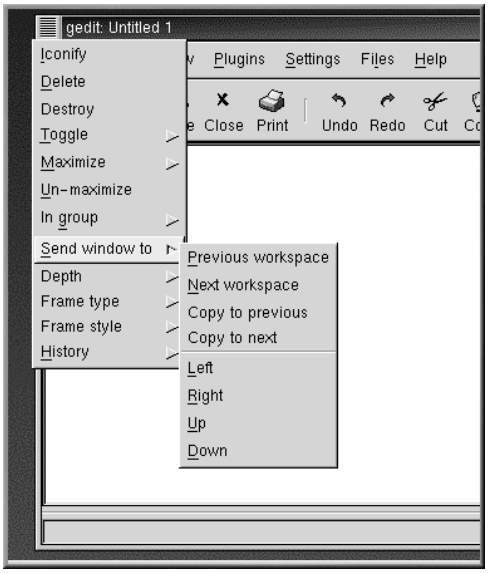
2.6 Finding Help

Additional documentation on GNOME and Nautilus can be found by clicking on the **Help** tab on the **Start Here** screen. Go to the Red Hat support website by clicking on **Help** on the Nautilus main menu and selecting **Support**. Info pages and man pages are also helpful documents and are usually installed on a Linux system. See *Introductory Terms*.)

2.7 Multiple Desktops

Instead of crowding your work on to one screen, you can use virtual desktops, which extend your workspace to multiple desktop areas. For example, you may have your browser open on one desktop. If you want to use a word processor and email program without having them all be on top of each other, you can have each application run on its own desktop.

Figure 2–6 Moving an Application to Another Desktop



By default, four desktops are available to you. However, using the configuration utility for your window manager, you can modify that number. To run sawfish's configuration program, middle-click on your desktop (or click your right and left mouse buttons simultaneously), and select **Customize**. Go to the entry called **Workspaces** to increase or decrease the number of available desktops. You can also go to **Main Menu** => **Programs** => **Settings** => **Sawfish window manager** => **Workspaces**.

In the **Workspaces** field, use the arrows or enter a number manually to determine the number of workspaces. You can name the Workspaces by clicking on **Insert** and typing a name in the pop-up box that appears. Likewise, you can edit and delete workspace names by clicking on the appropriate buttons.

The numbers in the **Columns** and **Rows** fields are multiplied by the number in the **Workspaces** field, increasing your number of workspaces. Enter different numbers in these fields and click on **Try**. Watch the display on the workspaces tab change as you do this.

In this same window, click on the **Edge Flipping** tab. If you choose **Select the next desktop when the pointer hits the screen edge**, you will be moved to the next desktop when you point the cursor at any edge of your current desktop. Activate the **Only flip when interactively moving a window** option and you will only be moved to the next screen automatically if you are dragging an open window with the cursor. Leave both of these options unchecked and you can click on the desktop you want in the

Desk Pager to move to another desktop. To manually move an open window from one desktop to another, right-click on the top border and select **Send window to** for window moving options.

Figure 2–7 The GNOME Pager

The Pager (see Figure 2–7, *The GNOME Pager*) is a GNOME utility which allows you to switch desktops (or workspaces) by clicking on the corresponding desktop, as well as see which applications are currently running.

Additional Tasklists and Desk Guides

You can add new Pagers and Desk Guides to the panel by right-clicking on the panel and moving your cursor to **Panel** => **Add to panel** => **Applet** => **Utility** and selecting either **Desk Guide** or **Tasklist** from the menu.

2.8 Switching Environments

In addition to changing your graphical environment at the login screen, you can switch to another environment when you are already logged in.

You can change environments by using the Switchdesk utility (see Figure 2–8, *The Switchdesk Utility*). Whether you are using GNOME or KDE you can select your new environment in Switchdesk and log out. When you restart your session, you will find your new environment.

Additional Environments

If you performed a workstation install, the Switchdesk utility will show options for GNOME and other desktop environments. Custom installations may display even more options.

Figure 2–8 The Switchdesk Utility

There are several ways to start Switchdesk:

- Go to **Main Menu Button** => **Programs** => **System** => **Desktop Switching Tool**.
- Dock a switchdesk applet on your panel. Right-click on the panel and go to **Panel** => **Add to panel** => **Launcher from menu** => **System** => **Desktop Switching Tool**.
- Click on the **Terminal Emulation Program** icon on the panel and type **`switchdesk`** at the prompt.
- Open the Run program item from the **Main Menu Button** and type **`switchdesk`** in the window.

Your changes will no be reflected immediately. Instead, you have to log out of your current X session. The next time you start X, you will be working in your new environment.

2.9 Quitting from GNOME

When you log out, GNOME allows you to simply log out (and leave the system running), restart, or halt the system completely.

Figure 2–9 The GNOME Log Out Confirmation

To log out from the **Main Menu** on the panel, click on the **Main Menu Button** and select **Log out**.

In the confirmation dialog which opens (see Figure 2–9, *The GNOME Log Out Confirmation*), you can choose to:

- **Logout** — logs you out of your account and returns you to the login screen, leaving the system running.
- **Halt** — logs you out of your account and shuts down the system. To restart after you halt, press [Ctrl]-[Alt]-[Del] or push the reset button on your computer.
- **Reboot** — logs you out of your account and restarts the system.

Select any of the options and click on the **Yes** button to continue. Also, select the **Save current setup** option if you want to save your session. Saving your session will preserve your current configuration of the panel and save the programs you might have open.

If you do not wish to proceed, click on the **No** button to continue with your GNOME session.

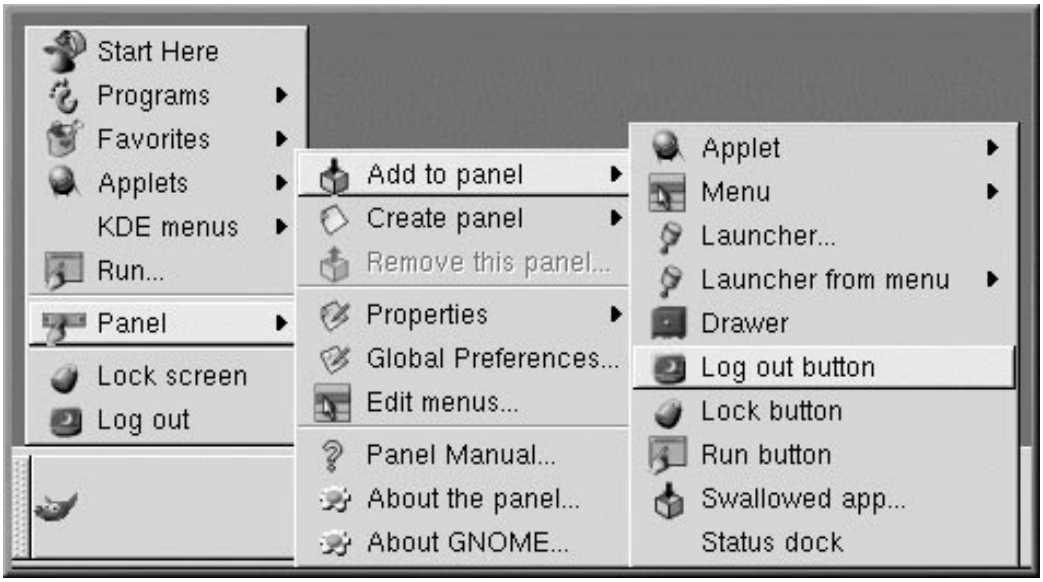
Typing Your Password

When you select either **Halt** or **Reboot**, you will be asked for your account's password before proceeding. In the space provided, just type in the password you used when you logged in for your current session.

2.10 Adding a Log Out Button

You can add a quick launch **Log out** button to the panel.

Figure 2–10 Adding a Log Out Button



To add the button to your panel, right-click on the panel and select **Panel** => **Add to panel** => **Log out button** (see Figure 2–10, *Adding a Log Out Button*). Now, when you want to log out, just click on this button.

2.11 Shutting Down from the Run Program Menu

An additional way to shut down or restart your machine is to select the **Run program** item from the **Main Menu** and, in the dialog which opens, type **`shutdown -r now`** or **`shutdown -h now`**. The **`-r`** means reboot, and will restart your machine; the **`-h`** means halt, and will shut down the system.

2.12 Shutting Down at the Shell Prompt

Like the **Run program** option in GNOME, you can use the **`shutdown`** command to halt or restart your system from a shell prompt, whether you are working in GNOME, KDE, or the non-graphical environment.

To halt or restart your system from a shell prompt:

- To see a shell prompt, from the panel, click on the **Terminal Emulation Program** launcher.
- At the shell prompt, type **`shutdown -r now`** or **`shutdown -h now`** and enter your user account password in the dialog box that appears. The **`-h`** means halt and will shut down the system; the **`-r`** means reboot and will restart the system.
- In console mode, type **`shutdown -r now`** or **`shutdown -h`** now and enter your user account password after the `Password` prompt.

Make certain that you have saved your work before halting or restarting your system from the shell prompt. Running applications will be closed and you will not have the option of saving your work or your session.

Restarting an X Session

If you are having difficulty quitting your X session, (for example, if you get no response when you click on the **Log out** button in KDE) you can swiftly end the X session and return to the login screen by pressing the [Ctrl]-[Alt]-[Backspace] keys. This procedure should be used only as a last resort, however. *Make sure you close your running applications and save your work before logging out this way!*

More About Shutting Down

You can specify the delay between when you issue the **shutdown** command and its execution. Replace the word now with a "+" and a number; for example **shutdown -h +5** will shutdown and halt the system after five minutes have passed.

3 The KDE Desktop Environment

This chapter provides an overview of KDE fundamentals. Details, such as configuring your desktop, working with the file manager, and using specific KDE tools, will be covered in later chapters.

For the latest documentation on KDE, visit the project's website: http://www.kde.org.

The KDE desktop shows application launchers, document windows, file folders, and so on. You access the main menu from this screen and you can configure the desktop to suit your needs.

The long bar across the bottom of the desktop is the panel. The panel contains application launchers, status indicators, and the desktop manager. You can have up to 16 desktops running at the same time in KDE (for more information on this, see Section 3.3.1, *Multiple Desktops*). The taskbar appears at the top of the desktop and shows your currently running applications.

3.1 Using Your Mouse

Click Once on the Mouse in KDE

You start applications and open folders by clicking just once on the associated icon.

Making a Two-Button Mouse Emulate a Three-Button Mouse

A three-button mouse offers the greatest ease of access to menus and navigation in KDE. If you have a two-button mouse and you selected three-button emulation during the installation of Red Hat Linux, simply hold down both the left and right mouse buttons at the same time to emulate the middle button of a mouse.

You can switch desktops with the mouse by placing the cursor in the desktop and pressing the middle button of your mouse. Select the desktop you want from the pop-up menu that appears.

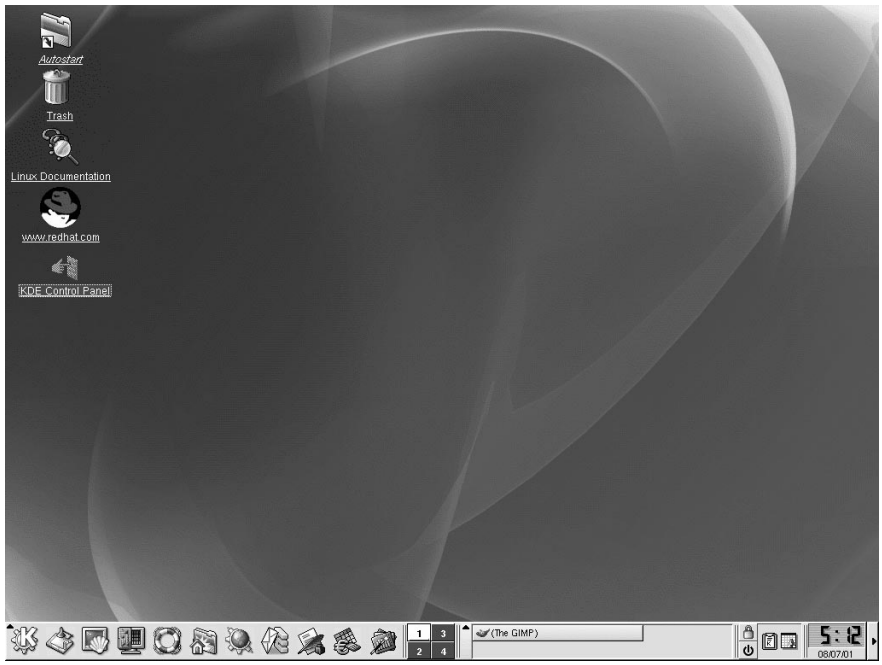
Use the right mouse button to reveal a brief menu of desktop related actions.

Right-clicking on a folder or application reveals a menu related to actions you can take with your selection, such as moving the item to the **Trash**, revising the item's properties, and more.

3.2 The Desktop

When you first start KDE, your desktop will look something like Figure 3–1, *A Typical KDE Desktop*.

Figure 3–1 A Typical KDE Desktop



Customize Your Desktop

You can customize the look of your desktop with preferred colors or pictures, or using themes. To learn more about themes in KDE, visit the KDE website (http://www.kde.org).

3.2.1 Desktop Icons

Your desktop shows icons for the trash can, the control panel, and more. These icons provide shortcuts to their respective devices. You can access any one of these devices by left-clicking once on the applicable icon.

You can drag items to the **Autostart** folder if you want them to launch automatically when you log in.

Diskette Formatting

If you place a floppy diskette in the drive, then select the **floppy** drive on your desktop, you may receive an error message such as `wrong fs type, bad option, bad superblock on /dev/fd0` or other.

Most likely, the diskette you have placed in the drive is not formatted with the ext2 filesystem, the Linux filesystem format. For more information about how to access a diskette that is not formatted for Linux, as well as about the ext2 filesystem, see Section 13.1, *Using a Diskette*.

When you right-click on the drive icons, you will see several options for working with these drives, such as **Delete**; **Rename**; **Move to Trash**, which will remove the icon from your desktop (you probably will not want to do this); **Copy**, which allows you to copy the icon to another location; and **Open with**, which you should probably avoid for now.

Mounting a Device

Ordinarily, you can use your drives just by clicking on them. Most devices are now mounted automatically. But occasionally you may get an error message, telling you a device needs to be mounted. When you mount a floppy or CD-ROM, you are making that device's contents available to you. For example, to mount a CD-ROM, type:

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

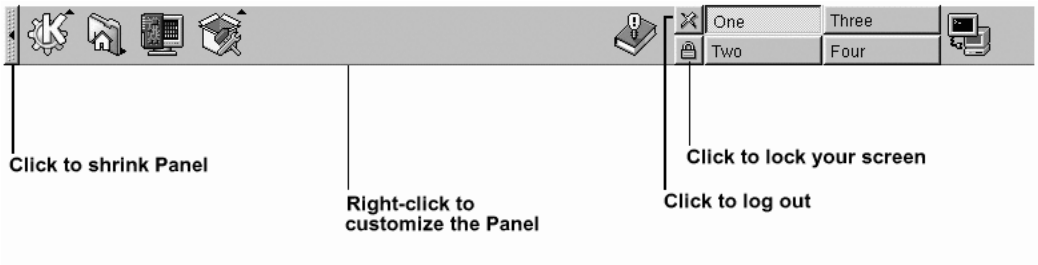
This command tells the system which device (`/dev/cdrom`) to mount and where to mount it (the **`/mnt/cdrom`** directory).

You can drag and drop your unwanted items to the **Trash** icon. Right-click on the trashcan and select **Empty Trash Bin** to delete the items from your system.

3.3 The Panel

The panel stretches across the bottom of the desktop.

Figure 3–2 The Panel



The panel is very configurable. You can add and remove buttons that launch applications and applets, which will allow you to open them easily. Right-click on the panel and select **Panel menu** => **Settings** to open the **KPanel Control Module**. Go to the **General** tab for panel placement and appearance options.

Other tabs in the **KPanel Control Module** have options to further customize your panel. Click on **Help** for more information.

Applications and utilities can easily be added to the panel. To add an application to the panel, right-click on the panel and go to **Add**. Then select **Button**, **Applet**, or **Extension** and make your choice from the corresponding menu. Once your choice is highlighted, release the mouse button and the item will be added to the panel.

3.3.1 Multiple Desktops

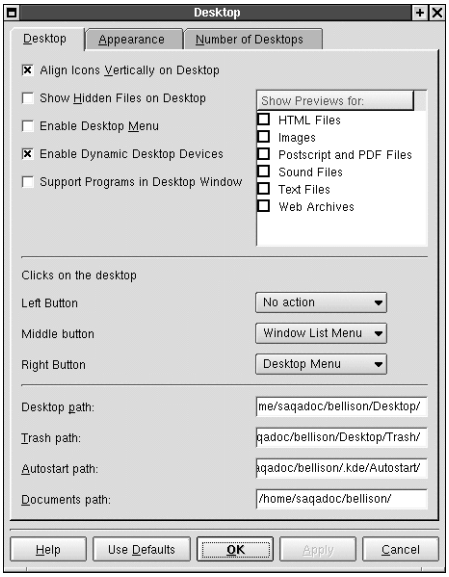
By default, KDE provides four desktops on which you can spread your work. Each desktop can hold icons, open applications, and have individually customized backgrounds.

For example, while you are writing email on the first desktop, you can have Netscape Navigator running on desktop two, a word processor open on desktop three, and so on.

You can change the number and names of desktops available in KDE. To make these adjustments:

1. Right-click on the desktop; you will see a limited menu of actions you can take.
2. Select **Configure Desktop**; the KDE panel configuration tool will open.
3. Click on the **Number of Desktops** tab (see Figure 3–3, *The Desktops Tab in the Panel Configuration*).

Figure 3–3 The Desktops Tab in the Panel Configuration



Now you can change the names of your desktops (from **Desktop 1**, **Desktop 2**, etc.) by deleting these default names and typing in any name you want in each desktop's corresponding text box (see Figure 3–3, *The Desktops Tab in the Panel Configuration*).

You can increase (or decrease) the number of desktops available to you by adjusting the slider at the top of the **Desktops** tab. For more desktops, drag the bar to the right; for fewer desktops, drag the bar to the left. The **Desktop**, **Appearance**, and **Number of Desktops** tabs are where you can make various desktop configuration selections, like icon arrangement and font size.

Buttons for your desktops appear on the panel in the Desktop Pager. Click on the buttons to move among your desktops. Alternately, you can use the **Windowlist** applet to navigate your desktops. If the **Windowlist** icon is not on your panel, you can add it by right-clicking on the panel and selecting **Add** => **Windowlist**.

Switch Desktops Quickly

You can use the keyboard combination of the [Ctrl] and Function keys to switch desktops. For example, [Ctrl]-[F2] will switch you from desktop one to desktop two, [Ctrl]-[F3] will take you to desktop three.

3.4 The Main Menu K Icon

The main menu in KDE, (the **K** icon), incorporates all of the available KDE applets and applications, as well as many other applications on your Red Hat Linux system.

You can find the icon on the left of the panel. You open the main menu by clicking once on the icon. You will see the top level of menu headings first. These headings are the major groups into which the applications are placed. For example, to open KOrganizer, the KDE calendar and appointment book, you would open **Main Menu K**, drag your mouse to highlight the **Applications** menu listing, then highlight and click once on the **Organizer** entry in the submenu which opens.

From the **Main Menu**, you can also access:

- The KDE Control Center, an invaluable resource for customizing your environment and locating system information.
- A **Home Directory** listing which will open a browser showing you all the files in your home directory.
- The **Lock Screen** and **Logout** icons, which will password protect your desktop and allow you to log out of your account.

3.5 The Taskbar

The taskbar displays all running applications — both minimized and on the desktop (see Figure 3–4, *Applications on the Taskbar*).

Figure 3–4 Applications on the Taskbar

You can keep the taskbar running in a separate location from the panel or you can have them both located in the same place on the desktop. The default configuration places the taskbar at the top of the desktop while the panel runs at the bottom of the desktop. Right-click on the panel and select **Panel menu** => **Settings** to open the **Kpanel Control Module**. Make your placement selection under **Panel Location** on the **General** tab.

You can maximize running applications or bring them to the front of your working windows by clicking on the associated item on the taskbar.

Switch Tasks Quickly

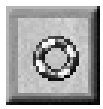
Another way to bring minimized or background windows to the front is to use the [Alt] and [Tab] keys. To pick an item from the taskbar, hold down [Alt]-[Tab]. To scroll through the tasks, hold down the [Alt] key, while pressing the [Tab] key in succession. When you have found the task you want to maximize and bring to the front, release both keys.

3.6 Finding Help

KDE Help is the online help browser for getting the most out of KDE, as well as for many features of your Red Hat Linux system.

Figure 3–5 The Opening Screen of the Help Browser

There are several ways to access KDE Help, but the easiest are:

- From the panel — A single click on the KDE Help icon, which looks like: 

- From the **Main Menu** — select **Help**.
- By right-clicking on the desktop and selecting the **Help on desktop** entry in the brief menu.

The opening screen of the KDE Help browser will appear like Figure 3–5, *The Opening Screen of the Help Browser*. From this main page, you can view help documentation on using and configuring the desktop, working with Konquerer (the KDE file manager), and more.

Click on the search tab and type in a keyword, subject, or significant phrase in the **Keywords** field. Click on **Search** or press [Enter] to begin searching the Internet for your subject.

3.7 Switching Environments

In addition to changing your graphical environment at the login screen, you can switch to another environment when you are already logged in. You can change environments using the Switchdesk utility (see Figure 3–6, *The Switchdesk Utility*). When you restart your session, you will find your new environment.

Figure 3–6 The Switchdesk Utility

There are three ways to start Switchdesk. You can start the Switchdesk at a shell prompt. You can add a button to the panel that will open Switchdesk (go to **Main Menu** => **Configure Panel** => **Add**

=> **Button** => **System** => **Desktop Switching Tool**). Or you can open Run from the main menu and type **`switchdesk`** at the prompt.

To open Switchdesk at a shell prompt:

- Type **`switchdesk`** at a shell prompt.
- Select your new environment and click **OK**.
- Close the terminal window by typing **`exit`**.
- Log out and log in again.

The next time you start your X session, you will be in your newly selected environment.

Regardless of the process you use to switch desktop environments, you have to log out and back in before your desktop will change.

3.8 Quitting from KDE

There are several easy ways to log out from your KDE session:

- From the **Main Menu**, select the **Logout** item.
- From the panel, select the **Logout** icon, which looks like: 
- From the desktop, right-click on the desktop and select **Logout** from the menu.

KDE offers you the chance to save your current settings, which will preserve your panel settings and keep your currently open applications.

If you are working in an application and you have not saved your work when you log out, a dialog will inform you that you will lose your unsaved material when you log out.

When you see this dialog, you can simply select the **Cancel** button, save your work, then log out again. If you continue without saving your work, you will lose the data.

3.9 Shutting Down at the Shell Prompt

Like the **Run program** option in GNOME, you can use the **`shutdown`** command to halt or restart your system from a shell prompt, whether you are working in GNOME, KDE, or the non-graphical environment.

To halt or restart your system from a shell prompt:

- Open a shell prompt — From the panel, click on the **Terminal Emulation** or **Console** launcher.

- At the shell prompt, type **`shutdown -r now`** or **`shutdown -h now`** and enter your user account password in the dialog box that appears. The **`-h`** means halt and will shut down the system; the **`-r`** means reboot and will restart the system.
- At a console, type **`shutdown -r now`** or **`shutdown -h now`** and enter your user account password after the `Password` prompt.

Be sure to save your work before halting or restarting your system from the shell prompt. Running applications will be closed and you will not have the option of saving your work or your session.

Killing an X Session

If you are having difficulty quitting your X session, (for example, if you get no response when you click on the **Log out** button in KDE) you can swiftly kill the X session and return to the login screen by pressing the [Ctrl]-[Alt]-[Backspace] keys. This procedure should be used only as a last resort, however. *Make sure you close your running applications and save your work before logging out this way!*

More About Shutting Down

You can specify the delay between when you issue the **`shutdown`** command and its execution. Replace the word now with a "+" and a number; for example **`shutdown -h +5`** will shutdown and halt the system after five minutes have passed.

4 Customizing Your Desktop

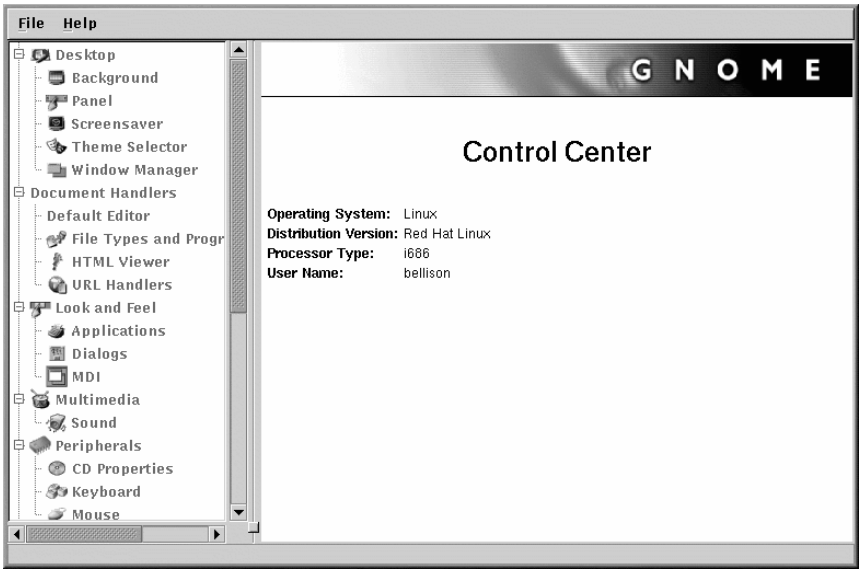
Both GNOME and KDE offer you plenty of ways to add your own personality to your workspace. Each environment provides powerful control centers, that let you change the way your workspace looks, sounds, and behaves.

Both control centers offer quite a few options for you to modify. For more detailed instructions on using them, you should click on their **Help** buttons or read the related documentation from the environments' help browsers.

4.1 Customizing with the GNOME Control Center

You can start the GNOME Control Center by clicking on the **Start Here** icon (there's one on the panel and the desktop). This opens the main Nautilus screen. Click on **Preferences** to open the GNOME Control Center.

Figure 4–1 The GNOME Control Center



The GNOME Control Center contains several icons that open screens for customizing the desktop, multimedia preferences, and more. Click on **Desktop** to configure the look of your workspace.

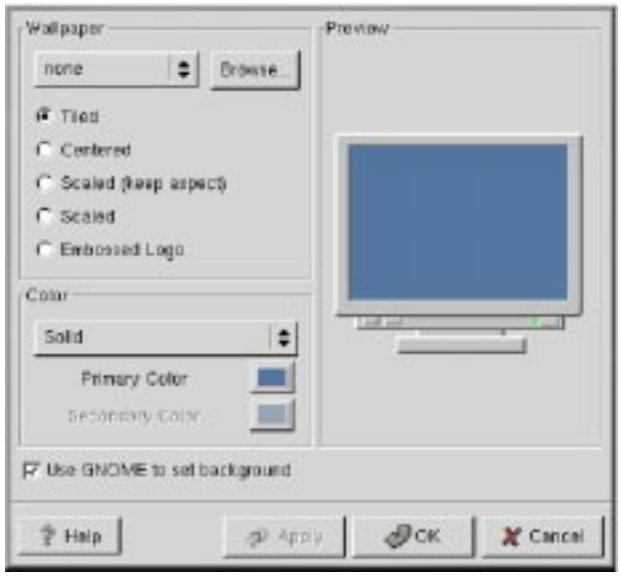
Preview Your Changes

Not sure if you will be happy with your selections? Click on the **Try** button to see what your desktop will look like with your changes. If you do not like it, just click on the **Revert** button to return to your original settings.

4.1.1 Changing the Background

To change your desktop's background, click on the **Background** icon. You will see your current desktop background in the preview screen of the main panel.

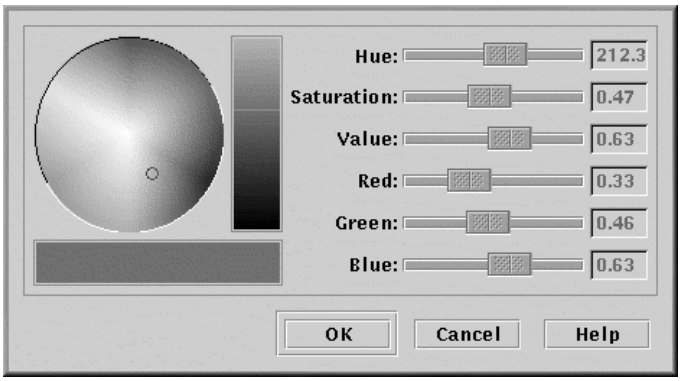
Figure 4–2 The Background Category in the GNOME Control Center



In the **Color** section of the **Background** screen, you can determine whether your desktop has a solid or gradient (blended colors) background.

For a solid background, click on the dropdown menu and choose **Solid**. Click on **Primary Color** and the **Pick A Color** palette appears (see Figure 4–3, *The Background Settings Color Palette*). Choose a color by clicking on it in the color palette. You can move the slider bars on the right side of the screen to make choices and adjustments as well. Once you find a color you like, click on **OK**.

Figure 4–3 The Background Settings Color Palette



If you choose **Horizontal** or **Vertical Gradient** from the dropdown menu, you need to choose a **Primary** and **Secondary Color**.

If you want something a little more expressive, try adding wallpaper to your desktop.

By default, there are no wallpaper choices available when you click on the dropdown menu under **Wallpaper**. Click on **Browse** and choose the directory that contains saved wallpaper images to view your wallpaper options. Select one of these files and click on **OK**, or just double-click on the file name, to add the file to the dropdown menu.

You can arrange the wallpaper on your desktop in the following ways:

- **Tiled** — The image is repeated across the desktop.
- **Centered** — The image is centered on the desktop, surrounded by your chosen background color or gradient.
- **Scaled (keep aspect)** — The image is scaled to fit as much of the screen as possible without distorting the image.
- **Scaled** — The image is stretched to fit the entire screen.
- **Embossed Logo** — The background image is the default Red Hat logo.

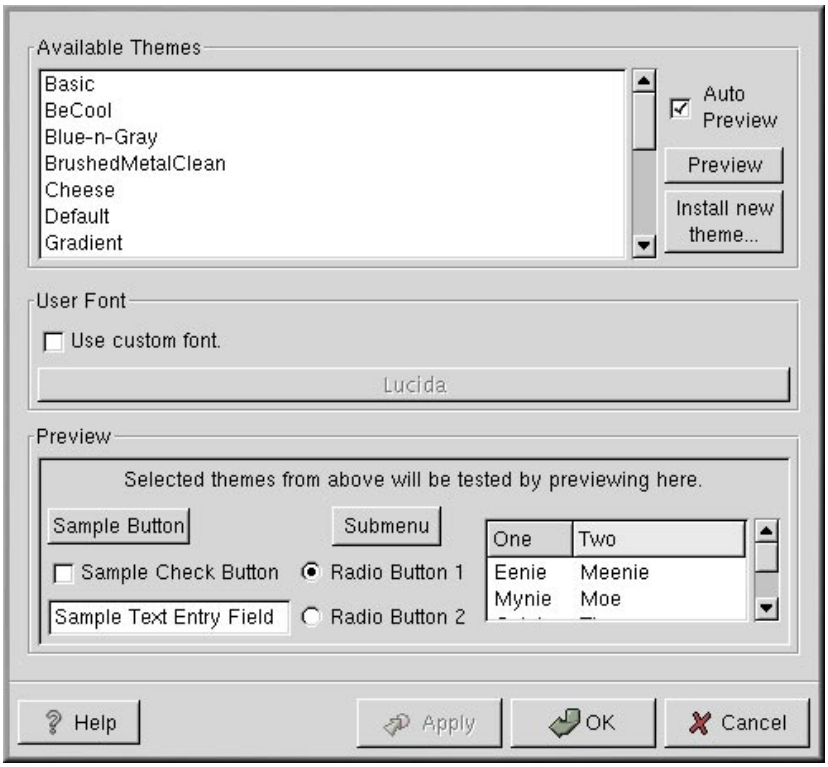
You can deselect the option to **Use GNOME to set background** if you would prefer to set the background in another way (such as through your window manager's configuration program).

4.1.2 Changing the Theme

You can change the look and feel of your workspace with themes. The appearance of your panel, text boxes, buttons, and other visual elements will be coordinated with the theme you select.

To change your current theme, click on the **Theme Selector** icon.

Figure 4–4 The Theme Selector Category



The Theme Selector panel has sections where you can select a new theme, preview its effect, and modify the default font that theme will use (see Figure 4–4, *The Theme Selector Category*).

If you select the **Auto Preview** option, you can see how the theme will look like in the **Preview** section. If the option is not selected, you can still preview the theme by clicking on the **Preview** button.

More Themes Are Available

If you do not see a theme you like, you can find more themes at http://gtk.themes.org, a repository for themes. To install a theme, download a theme from the website, then select the **Install new theme** button. In the dialog which opens, scroll to the name of the file you downloaded (which will probably be in your login directory, named something like *New_theme.tar.gz*). Left-click on the file name, then click the **OK** button. Your new theme will appear in the **Available Themes** section.

You can select a font other than the default in the **User Font** section. Click on **Use custom font**, then click on the activated font box. A new dialog box opens where you select a different font to appear on such desktop items as the menu and Tasklist.

You can also customize the panel and select a screensaver here. Click on the applicable topic on the left of the screen and make the choices you want. Customizing the panel and the screensaver is simple and the icons and dialog boxes explain the necessary steps clearly.

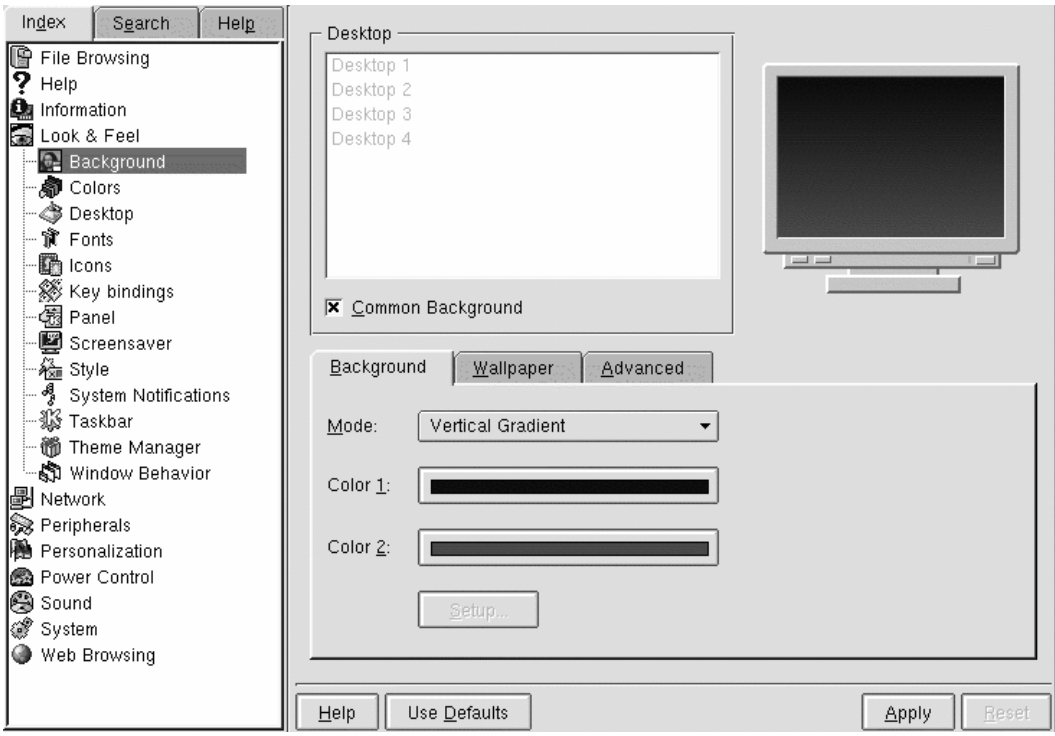
4.2 Customizing with the KDE Control Center

You can start the KDE Control Center from either the Main Menu K icon (**Main Menu** => **Control Center**) or from the panel, by clicking on the KDE Control Center icon, which looks like: 

4.2.1 Changing the Background

To change your desktop background in KDE, open the KDE Control Center, click on Look and Feel and then on Background. The Background category of the KDE Control Center will look like Figure 4–5, *The Background Category in the KDE Control Center*.

Figure 4–5 The Background Category in the KDE Control Center



The KDE Control Center is divided into two main panels. On the left, you will find categories, and on the right, (the main panel), you will see the corresponding elements you can modify for a category. The categories may be collapsed when you first open the control center. Click on the + to expand the categories.

In the **Background** category, you can change the background colors from a single color to a two-color gradient, and determine the appearance of the gradient (vertical, horizontal, etc.) by selecting from the **Mode** dropdown menu.

Click on the color bars next to **Color 1** and **Color 2** to choose your background (you do not have to select two colors if you do not want to). Now click on **Setup**. If you choose **Background Program** or **Pattern** from the **Mode** dropdown list, you will now see a dialog asking you to make further selections.

Automatic Preview

Whenever you make a selection for your background, you will automatically see a preview of the effect in the dialog.

The KDE Control Center's **Background** category allows you to set different backgrounds for each desktop. When the **Common Background** option is unchecked in the **Desktop** panel, the labels for each of your desktops will be highlighted. Click on a label to customize the corresponding desktop. Checking the **Common Background** label will apply your background selection to all your desktops. Note that you can add both colors and/or wallpaper to each of your desktops, as long as the **Common Background** option is unchecked.

Click on the **Wallpaper** tab to choose a pre-selected pattern or photo for your desktop. In the dropdown list next to **Mode**, you can select how you want the image to appear: centered, tiled (the pattern is repeated across your desktop), and others.

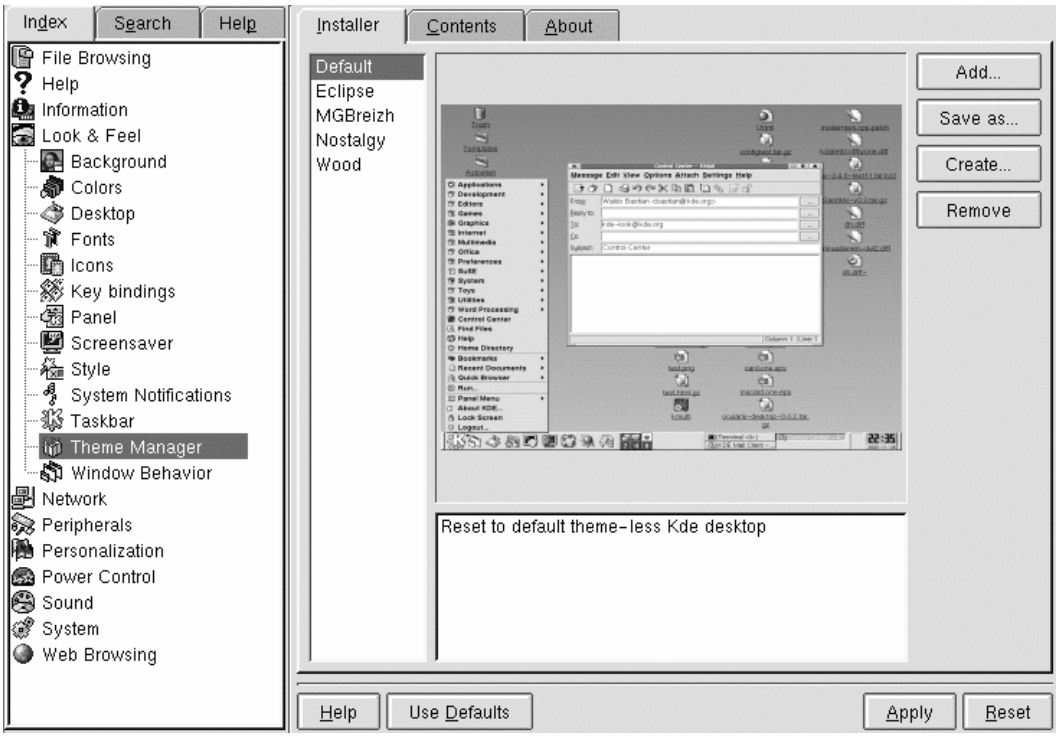
If you want something closer to a total makeover, try changing the theme of your workspace.

4.2.2 Changing the Theme

Applying a new theme to your workspace can change the look and feel of your panel, buttons, menus, and even the background.

To begin, select the **Theme Manager** category(Figure 4–6, *The KDE Theme Manager Category*). By default, you have several themes, but there are quite a few more themes available at http://kde.themes.org.

Figure 4–6 The KDE Theme Manager Category



If you want to install a theme you have downloaded, click on the **Add** button. In the dialog which opens, locate the name of the theme file you have downloaded. Double-click on it or highlight the file and click on **OK**. Your theme will be installed and will appear in the list of themes in the middle of the screen. Select a theme to see a preview. Click on **OK** to apply the theme to your desktop and close the control center. Click on **Apply** to apply the theme without closing the control center.

5 Getting Online

PPP accounts are used to dial in to an Internet Service Provider (ISP) using a modem, ISDN, or DSL connection. Using PPP (Point-to-Point Protocol), you connect to a large network (the Internet) through your ISP; your machine becomes a part of that network and you use the resources of the network.

Red Hat Linux offers a useful tool for establishing and modifying PPP accounts used to connect to ISPs and networks. This utility removes much of the guesswork in creating an online connection; in many cases, your only requirement is an ISP account.

The Internet Druid utility can be used for Internet configuration in any desktop environment. This application is easy to use, providing a GUI that takes you through the few steps that are required to set up your PPP account.

You Must Enter the Root Password

Because you will be making changes to your system, you must be root or enter the root password when prompted in order to create a PPP account.

Your own ISP may have specific connection requirements for their service which differ from the instructions in this chapter. Before connecting with either of these tools, check first with your ISP for any specific instructions that they provide, including the following information:

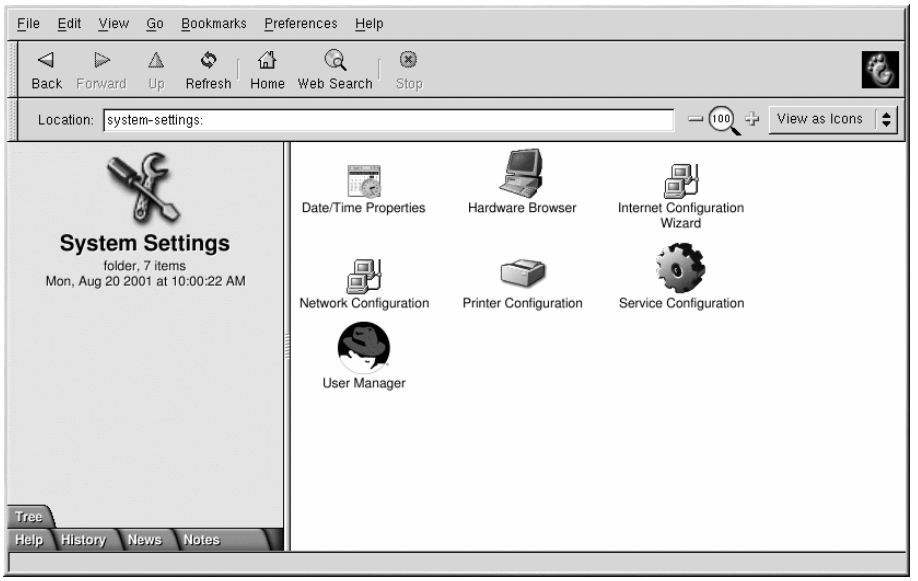
- The phone number that your modem must dial to connect to your ISP.
- Your login name and password for the ISP account.
- Possibly, a gateway address. Some ISPs may require you to specifically type in the address for the ISP's gateway.
- **DNS entries**: DNS means **Domain Name System**. DNS servers act as a roadmap for the Internet. When you use the Internet, the DNS tells your machine where to send its message traffic. The DNS tracks **IP** (Internet Protocol) addresses; each computer connected to the Internet must have an IP address, which is a unique set of numbers like *2xx.2xx.2x.2*. You may receive one or more DNS entries from your ISP when you sign up.

5.1 Internet Druid

Internet Druid, the Red Hat Internet configuration tool, makes easy work of connecting to the Internet.

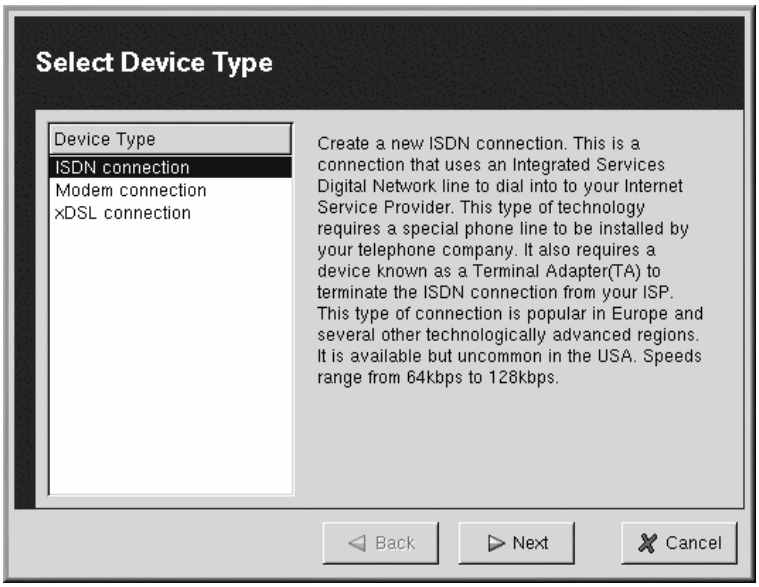
To establish an Internet connection, click on the **Start Here** icon (in GNOME, there is one on the desktop and one on the panel) and click on **System Settings** in the next window to open (see Figure 5–1, *System Settings*). In KDE, select **GNOME menus** from the main menu and select **Start Here**.

Figure 5–1 System Settings



Click on **Internet Configuration Wizard**. If you are not logged in as root, you will be prompted for the root password. Enter the password and the **Add New Device Type** screen opens (see Figure 5–2, *Add New Device Type*). There are three Internet/network account setup options:

Figure 5–2 Add New Device Type



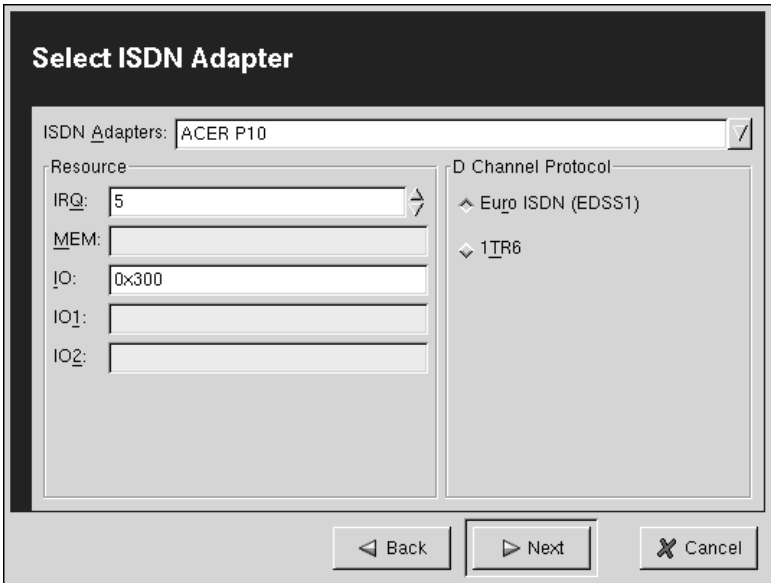
- ISDN connection - Integrated Services Digital Network. A connection using high-speed, high-quality digital telecommunication lines as opposed to an analog modem connection.
- Modem connection - A connection using a peripheral device, a modem, to connect computers to each other. Digital data is modulated into analog signals and sent over phone lines.
- xDSL connection - Digital Subscriber Line or Loop. High-speed transmission through telephone lines.

There are different type of ISDN and DSL connections. The information provided here provides general guidelines. You may need to contact your ISDN or DSL provider for help configuring your Internet/network connection.

5.1.1 Configuring an ISDN Connection

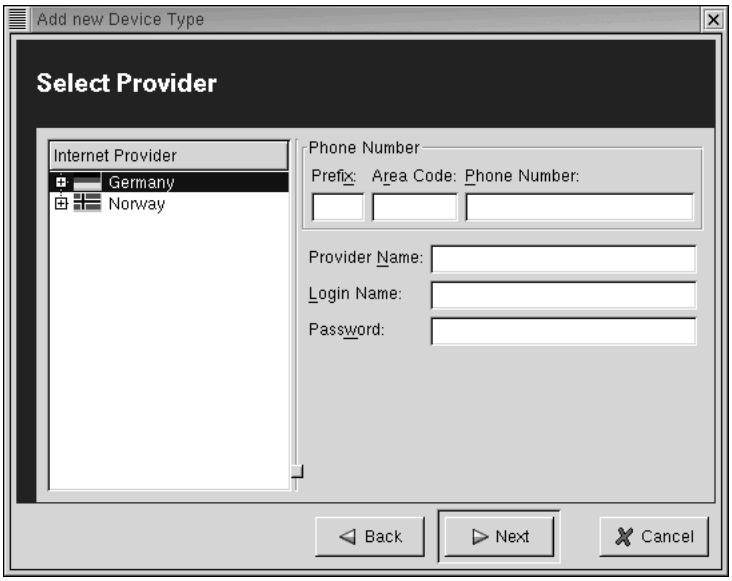
To setup an ISDN account, choose **ISDN connection** in the **New Device Type** screen (see Figure 5–2, *Add New Device Type*) and click on **Next**. The **Select ISDN Adapter** screen opens (see Figure 5–3, *Select ISDN Adapter screen*), where you fill in the **ISDN Adapter**, **Resource**, and **D Channel Protocol** fields. Your system may probe for these automatically, in which case you can just accept the defaults. Contact your ISDN provider for more information if needed. Click on **Next** when finished.

Figure 5–3 Select ISDN Adapter screen



On the next screen, **Select Provider** (see Figure 5–4, *Select ISDN Provider*), you can expand the list of Internet providers on the left and select yours if it is there. If it is not, type the name and phone number of your provider in the **Internet Providers** field. Also, enter your ISDN user name and password. Click on **Next** and you will be asked to verify the information. Go back if you need to change anything or click on **Finish** to create the account.

Figure 5–4 Select ISDN Provider



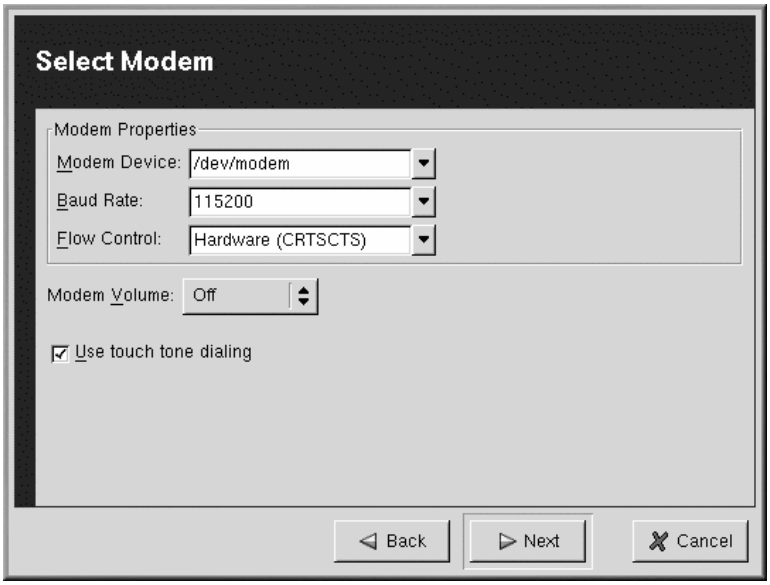
Once the account is created, neat closes. Launch Mozilla (an icon for Mozilla appears by default on the panel) or other Internet software application to launch an interface for the ISDN connection.

5.1.2 Configuring a Modem Connection

To configure your Internet connection with a standard peripheral modem, select **Modem connection** and click on **Next** on the **Add New Device Type** screen.

Internet Druid will probe the system for a modem. If it finds one, the information on the next screen, **Select Modem**, will be filled in for you. If it does not detect a modem, you must fill in the location of your modem device on the filesystem (`/dev/modem` by default), the baud rate, and the flow control. Refer to your modem's documentation if you need more information.

Figure 5–5 Select Modem screen



On the **Select Modem** screen, indicate if your telephone uses touch-tone dialing and adjust the modem volume if you choose. Continue to the next screen (see Figure 5–4, *Select ISDN Provider*). Select your provider from the list on the left or enter it manually in the **Provider Name** field. Enter the phone number, login name, and password and continue to the next screen.

On the final screen, you will be asked to review the information you entered. Go back if you need to change anything or click **Finish** to complete the setup.

Click on the Mozilla icon on the panel to launch an interface for your Internet connection.

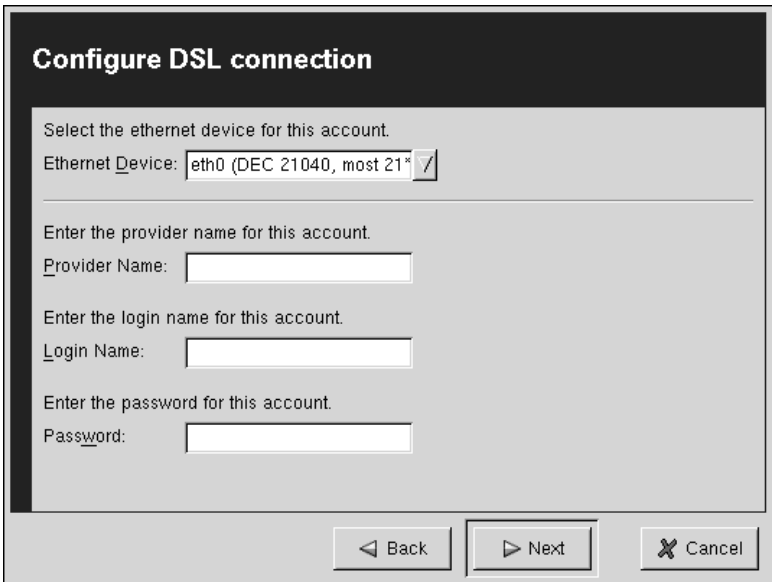
5.1.3 Configuring a DSL Connection

To configure a DSL network or Internet connection, choose **xDSL connection** and click on **Next** on the **Add New Device Type** screen (see Figure 5–2, *Add New Device Type*).

On the **Configure DSL Connection** screen (see Figure 5–6, *Configure DSL Connection screen*), select an Ethernet device and enter your provider name and login information. Continue to the next screen, verify your information, and click on **Finish** to complete the setup.

Now click on the Mozilla icon on the panel to launch an interface for your Internet connection.

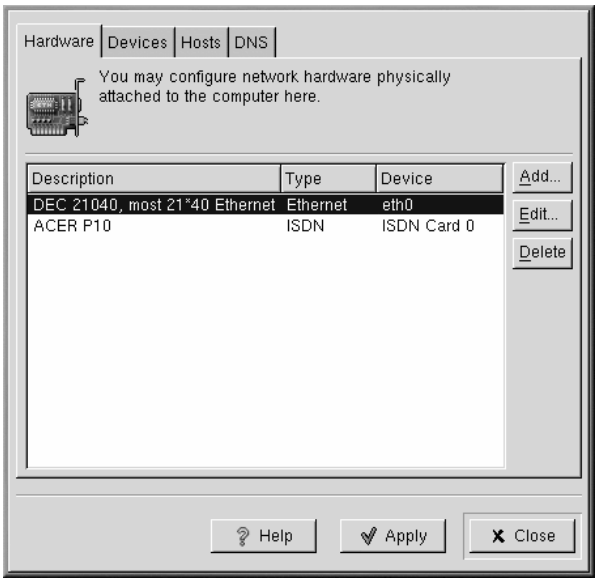
Figure 5–6 Configure DSL Connection screen



5.2 Network Configuration

Configuring a network with Red Hat Linux is simple. In GNOME, click on the **Start Here** button on the desktop or panel. In KDE, access the **GNOME menus** from the main menu button and click on **Start Here**. When the **Start Here** screen opens, click on **System Settings**. Click on **Network Configuration** in the following screen to launch the Network Administration Tool (neat) and then enter the necessary information on each of the tabs in the network configuration window.

Figure 5–7 Network Configuration



If you are configuring a network, you will probably have all of the necessary information readily available. If not, contact your system administrator or refer to the *Official Red Hat Linux Customization Guide* for more information on neat.

5.3 Connecting and Disconnecting

Once you have configured your PPP account, all you have to do to connect to the Internet is launch your Internet application. Red Hat Linux comes with the Mozilla application, but you can install and use others if you choose.

To disconnect, close the application you are using to access the Internet. Click on the **x** in the upper right corner of the application's screen to end your connection, or select **File** => **Quit** from the main menu (if your browser does not have a **Quit** option, it probably has an **Exit** option that does the same thing.

5.4 Connecting With Cable

Your cable provider should provide you with equipment you need to get online. To set up a DHCP connection (which is generally required for cable), you need an Ethernet card. All you have to do is

hook up the equipment, launch Mozilla (see Chapter 6, *The Mozilla Web Browser* for more information on Mozilla), and your system should connect. For more information on configuring your cable interface, see the Official Red Hat Linux Customization Guide or contact your cable provider.

6 The Mozilla Web Browser

Once you have configured your Internet connection (see Chapter 5, *Getting Online*), you are ready to get online. Red Hat Linux comes with the open source browser Mozilla. This chapter explains how to customize Mozilla so you can surf the Web, send and receive email, subscribe to newsgroups, and create webpages.

Mozilla functions like any other Web browser. It has the standard navigation toolbars, buttons, and menus. To learn more about browser basics, go to Section A.1.5, *Basic Web Browser Navigation*.

6.1 Mozilla User Accounts

Before you open Mozilla for the first time, you must create a user account. This feature gives you added security if you share a computer with others and helps you stay organized by creating separate user accounts for business use, personal use, etc.

Click on the Mozilla icon on the panel, or, in GNOME, go to **Main Menu** => **Programs** => **Internet** => **Mozilla Profile Manager**. In KDE, go to **Main Menu** => **Internet** => **Mozilla Profile Manager**. If you have been using Netscape, you can select **Migrate Netscape Profile** instead of the profile manager option and all of your existing accounts, bookmarks, etc. will be integrated into Mozilla for you.

Figure 6–1 Mozilla Profile Manager

After you open the profile manager, click on **Create Profile** (Figure 6–1, *Mozilla Profile Manager*) to begin. The first screen is an introduction; click on **Next** to continue. On the following screen (Figure 6–2, *Create a User Profile*), enter a name in the **Enter New Profile Name** field (work, Joe, research, etc.). You can also choose where your settings will be stored by clicking on **Choose Folder**, or just accept the default location that appears.

Figure 6–2 Create a User Profile

When you click on **Finish**, you will see the user profile you just created listed under **Available Profiles** on the main Profile Manager screen (Figure 6–1, *Mozilla Profile Manager*). You can also edit and delete profiles from this screen by clicking on **Rename Profile** or **Delete Profile**.

Now that you have created a user profile, click on **Start Mozilla** (Figure 6–1, *Mozilla Profile Manager*) to launch the application or click on **Exit** to close it.

6.2 Mozilla Navigator

Once you have configured your user profile, you are ready to use the browser. To access Mozilla in GNOME, click on the Mozilla launcher on the panel or go to **Main Menu** => **Programs** => **Internet** => **Mozilla**. In KDE, go to **Main Menu** => **Internet** => **Mozilla**.

The Mozilla Navigator screen (Figure 6–3, *Mozilla's Main Screen*) has all of the standard Web browser functions that other browsers have. There is a main menu at the top of the screen and a navigation bar below it. There is a sidebar on the left that contains additional options. And in the bottom left corner, there are four small icons : **Navigator**, **Mail**, **Composer**, and **Address Book**.

To browse the Internet, click on **Search** and enter a topic in the search engine that opens, type a website URL in the location bar, click on and create bookmarks, or check the **What's Related** sidebar tab to see pages related to the one you are viewing currently.

Other Web Browsers

In addition to Mozilla, you can use Galeon, Netscape, or any other Web browser you have installed. For information on Galeon, check the official website at http://galeon.sourceforge.net and for more on Netscape, go to http://home.netscape.com/browsers/redirect/index.html.

You can open either of these applications (if you have them installed) in GNOME by going to **Main Menu** => **Programs** => **Internet** and selecting either Galeon or Netscape Communicator. Or you can simply type **galeon** or **netscape** at a command line.

Figure 6–3 Mozilla's Main Screen

6.2.1 Mozilla Navigator Main Menu

The following options are available from the main menu at the top of the Mozilla Navigator screen. Note that many menu items have keyboard shortcuts listed next to them. For example, [Ctrl]+[p] is the keyboard shortcut for printing.

File

- **New Navigator Window** — Opens an additional Mozilla Navigator window.
- **New** — Make a selection from this list to open a new Navigator or browser window, a new screen for composing mail, a blank Composer screen for working on a webpage, or a blank address card for adding and saving new entries in your address book.
- **Open Web Location** — Opens a dialog box for URL or local file entry.

- **Open File** — Opens a dialog box for file selection or entry.
- **Close** — Closes Mozilla.
- **Save As** — Opens a dialog box where you can name a file and have it automatically saved as such.
- **Edit Page** — Opens Mozilla Composer where you can edit or create HTML pages.
- **Send Page** — Opens an email composition screen so you can send the contents of the webpage you are currently viewing within the body of a letter.
- **Send Link** — Opens an email composition screen so you can send a link to the webpage you are viewing.
- **Print** — Prints the current webpage or document (see Chapter 7, *Printer Configuration* for information on configuring a printer).
- **Work Offline** — Disconnects Mozilla from the Internet but allows you to keep working on files and correspondence within Mozilla.
- **Quit** — Closes Mozilla.

Edit

- **Undo/Redo** — Automatically cancels or repeats the last action.
- **Cut/Copy/Paste/Delete** — Highlighted text can be cut or copied and then pasted elsewhere, or deleted permanently.
- **Select All** — Highlights the entire contents of a document. The contents can then be collectively deleted, copied, or have other edit functions applied.
- **Prefill Form** — Automatically enters information in online forms.
- **Save Form Data** — Saves the data most recently entered in a form.
- **View Saved Data** — Displays your contact information, billing and shipping information, etc.
- **Preferences** — Opens the Mozilla preferences window where you can configure the look and behavior of Mozilla.

View

- **Show/Hide** — Select from these menu items to hide or show the **Navigation Toolbar** (containing the forward, back, reload, and other buttons), the **Personal Toolbar** (containing buttons for your bookmarks, homepage, and more), and the **Status Bar** (at the bottom of the Mozilla screen, containing the icons for Navigator, Mail, Address Book, and Composer).
- **My Sidebar** — Selecting this option adds or removes the sidebar from the left of the screen.
- **Text Size** — Lets you make adjustments to the size of the text on screen.

- **Use Stylesheet** — If you have stylesheet files saved on you system, click on this option so see them listed. Selecting one will apply it to the webpage you are viewing.
- **Reload** — Refreshes the screen, just as the **Reload** button in the navigation toolbar does.
- **Stop** — Stops the current transfer. For example, if you've clicked on a link and then decide you don't want to go that site, select **Stop** to keep it from loading on your screen. You can also use the **Stop** button on the navigation toolbar.
- **Page Source** — Shows the source code for the page you are viewing.
- **Page Info** — Shows the title, URL, and last date modified for the current page.
- **Translate** — Gives you options for translating the current webpage into another language.
- **Language and Web Content** — Download and select languages for viewing web content.
- **Character Coding** — If you browse, compose, or send and receive email in more than one language, you need to select the appropriate character codings and fonts. Select character codes from this dropdown menu.

  A character coding method is the way a document or message has been converted to data to be used by your computer. All web documents and mail and news messages use a character coding method (also known as a character encoding or character set). Your version of Mozilla is probably set to default character coding(s) appropriate for your region.
- **Apply Theme** — Selecting a new theme changes the look of buttons, dialog boxes, menus, toolbars, and other items. A dialog box will open where you can make selections.

Search

- **Find in This Page** — Opens a dialog box where you type a word or phrase to search for on the current page - works with local files, not webpages.
- **Find Again** — Looks for the last word or phrase you searched for with **Find in This Page**.
- **Search the Web** — Opens a search engine

Go

- **Back/Forward** — Takes you back or forward through webpages you have viewed one at a time. You can determine the maximum number of pages forward and back that you can go with these buttons by going to **Edit** => **Preferences** on the main menu and selecting **Navigation** and then **Preferences** from the menu on the left of the main **Preferences** screen.
- **Home** — Takes you to a designated homepage. You can set your homepage by going to **Edit** => **Preferences** on the main menu and then selecting **Navigator** on the left side of the **Preferences** screen. Enter a URL or a local file name in the **Home Page Location** field to designate a homepage other than the default.

The **Go** menu item also shows a list of recently viewed pages. You can determine the maximum number of pages this list will show by going to **Edit** => **Preferences** on the main menu and then selecting **Navigation** and then **History** from the menu on the left of the **Preferences** screen.

Bookmarks

- **Add Bookmark** — Puts the page you are currently viewing on your general list of bookmarks.
- **File Bookmark** — Lets you add the current page to a specific folder in your bookmarks rather than the general list.
- **Manage Bookmarks** — Opens a screen where you move, rename, delete, and organize your bookmarks.

Tasks

- **Navigator, Mail, Composer, Address Book** — Each of these options opens the corresponding tool.
- **Privacy and Security** — contains the following options:

***Cookie Manager**

View, block, or unblock cookies.

***Image Manager**

View, block, or unblock sites that display images.

***Password Manager**

View and change passwords; encrypt, obscure, and clear sensitive information.

***Form Manger**

View stored form data and related tasks. When you fill out forms online, Mozilla asks you if you want to this information. If you do, the next time you view a form on a webpage, you will be asked if you want to have the saved information inserted in the form you are viewing.

***Understanding Privacy**

Displays an explanation of key privacy points.

- **Tools** — contains the following options:

***History**

Shows the websites you have viewed during your current session.

***Import Utility**

Opens Mozilla Mail Import Wizard which you can use to import messages, address book information, and/or preferences from other mail programs.

***Java Console & JavaScript Console**

Advanced functions for managing Java and JavaScript functions. Disabling one or both of these can help speed up your system's performance, but pages that require Java or JavaScript may not display properly.

IRC Chat

If you installed mozilla-chat, this option will appear under **Tasks** on the main menu. It launches an online chat application. The application has built-in help files for more information.

Help

- **Help Contents** Opens a help screen with categorized and indexed Mozilla help topics.
- **Release Notes** — Opens the Mozilla website, with current information about updates to the application.
- **About Plug-ins** — Shows a list of the various plug-ins (MPEG tool, Quicktime, MIDI player, Shockwave) compatible with Mozilla.
- **About Mozilla** — Displays basic copyright and licensing information.

6.2.2 Mozilla Navigator Icons

Mozilla Navigator shows a number of icons. All of the icons are labelled or will display labels when the cursor is held over them. The four icons on the taskbar in the lower left corner of the screen merit further discussion.

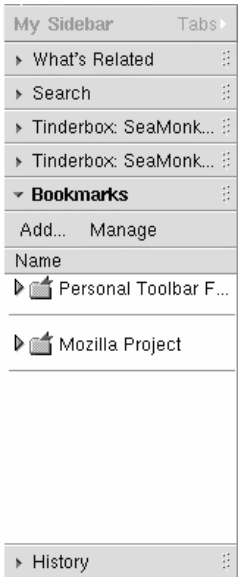
- **Navigator** — Clicking on the **Navigator** icon opens another Mozilla screen. This is convenient if you want to see more than one website at a time.
- **Mail** — The **Mail** icon opens a screen for composing mail. The first time you open this screen, you will be prompted to set up a mail account. There are only a few configuration screens and they provide you with instructions.
- **Composer** — The **Composer** icon opens a screen for composing documents and converting them to HTML for viewing online.
- **Address Book** — Click on the **Address Book** icon to open and edit your address book(s). On the left, under **Address Books**, is a list of existing address books. To create a new one, go to **File** => **New** => **Address Book** on the main menu and fill in a name for the book when prompted. You

can create separate lists within a address books by selecting a book and then clicking on **New List**. To add new names to your books, click on **New Card** and fill in the appropriate information when prompted.

6.3 The Mozilla Navigator Sidebar

The sidebar is located on the left of the Mozilla Navigator screen.

Figure 6–4 The Sidebar



To access the contents of any sidebar tab, click on its name. To close a sidebar tab, you must open another one. The sidebar contains the following tabs by default:

- **What's Related** — Click on this tab to see a list of other websites that are related to the one you are currently viewing. Go to the **Navigator** => **Smart Browsing** section of Mozilla's preferences to have the **What's Related** tool ignore certain websites.
- **Search** — The **Search** tab opens a screen in the sidebar where you can do a search for websites using a keyword or phrase and see the results without having to leave the site you are currently viewing.
- **Bookmarks** — You can add sites that you like or visit often to your bookmark list for easy access. When you find a site you want to add, click on **Bookmarks** => **Add Current Page**.

- **History** — The **History** tab shows a list of the sites you have visited. You can set determine how many days the history tab will store sites before clearing them by going to **Edit** => **Preferences** and going to **History** under the **Navigation** option.

The sidebar can be customized by clicking on the **Tabs** button that appears at the top of the sidebar list and selecting **Customize My Sidebar**. This opens a screen where you can add tabs to and remove tabs from your sidebar, and search for additional sidebar tabs online.

Click on **Tabs** and select **Sidebar Directory** to go straight to the Internet where you can browse through and choose websites to add as new sidebar tabs (similar to bookmarking them). Select a site and you will be asked to confirm the selection before the new tab is added.

6.4 Customizing Mozilla Preferences

To customize Mozilla, go to **Edit** => **Preferences**. A screen appears with a list of categories on the left: **Appearance**, **Navigator**, **Composer**, **Mail and Newsgroups**, **Privacy & Security**, and **Advanced**.

6.4.1 Appearance Preferences

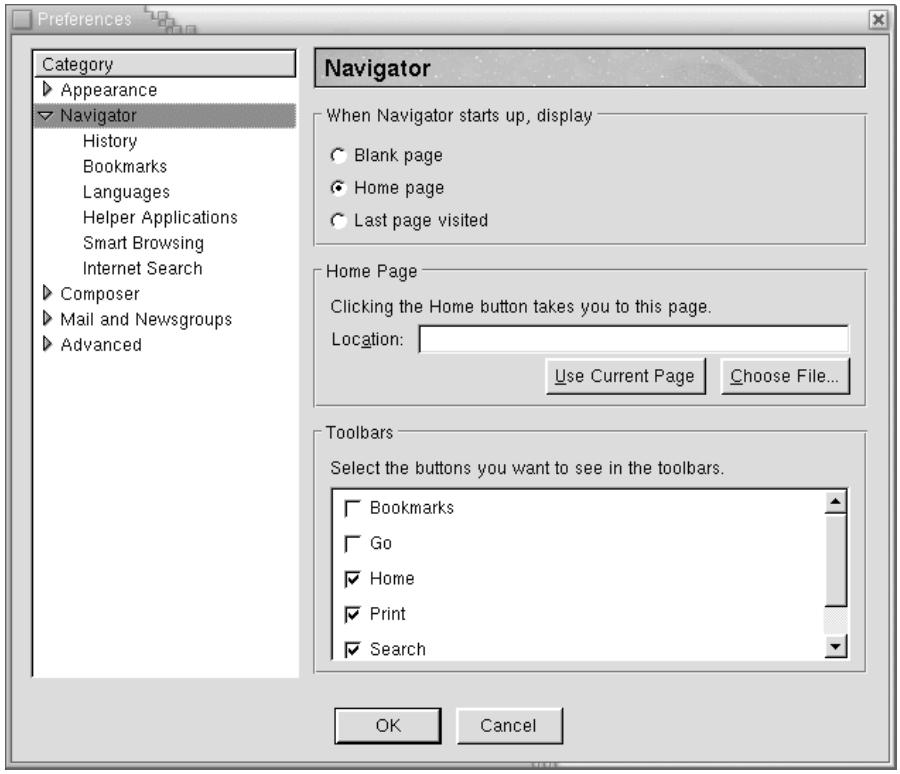
Under the **Appearance** option you can have Mozilla automatically launch Navigator, Composer, and/or Mozilla Mail when you start the application. If you have more than one language installed, you can select any of them from the **Choose your preferred language for Mozilla** dropdown menu.

The **Fonts**, **Colors**, and **Themes** options control the fonts, colors, and themes you will see on your Mozilla screen. **Content Packs** are different groups of sidebars, search options, bookmarks, etc., that may be installed on your system.

6.4.2 Navigator Preferences

The following options are available under **Navigator** on the **Preferences** (Figure 6–5, *Navigator Preferences*) screen:

Figure 6–5 Navigator Preferences



- **Navigator** — Under **Navigator** you can customize some of your homepage functionality, such as which buttons appear in the toolbar and what, if any, page appears when you launch the application.
- **History** — Your browsing history is a list of pages you have visited. You can determine the number of days your history should be saved (which appears under **Go** on the main menu), or clear the history completely. You can also clear the list of sites stored in the location bar, the field where URLs appear. If you manually enter an address here, it is stored in the location bar menu (click on the arrow at the end of this field to see the location bar history). Once an address is stored in the location bar, you only need to type the first few letters of the address for Mozilla to recognize it and fill in the rest of it for you.

The **Back** and **Forward** buttons store a history as well; you can determine how many pages backward or forward these buttons will go in the **Session History** field. You start a new session each time you login.

- **Languages** — Webpages are sometimes available in more than one language. On the **Languages** screen, you can add and prioritize languages you want displayed when they are available.

  Character Coding refers to the letters and symbols related to a language. If you only install one language, use the default setting If you install more than one, scroll through this list to find the appropriate character set.

- **Helper Applications** — **Helper Applications** designates particular applications for the handling of particular file types.

  The defaults shown here should be all you need. To add applications, click on **New Type**. A dialog box will appear where you need to enter a description of the file (such as text), the file extension used by this file type (such as `.txt`), the MIME type (a program that reads audio, video, etc. email attachments), and the application you want to open files of this type (emacs, x-pn-realaudio-pulgin, etc.).

- **Smart Browsing** — **Smart Browsing** is where you configure the **What's Related** option. On the Mozilla Navigator screen, you will see a sidebar on the left with a variety of options like bookmarks and a history list. The **What's Related** function automatically lists other websites that are related to the one you are currently viewing. You can have **What's Related** ignore certain domains (domain.com, shoesandsocks.net, etc.) by typing the domain you want ignored under **Do not request What's Related information for the following domains**. **Smart Browsing** is also where you enable or disable location line autocomplete (see **Preferences** => **History**) and Internet keywords. For an explanation of the Internet keywords feature, go to http://mozilla.org/docs/end-user/keywords.html

- **Internet Search** — Under **Internet Search**, you can select your default search engine, determine whether or not the search tab on your sidebar will open automatically when you perform a Web search, and select **Basic** or **Advanced** search preferences. The **Basic** option opens one search engine, while **Advanced** gives you several to choose from.

6.4.3 Composer Preferences

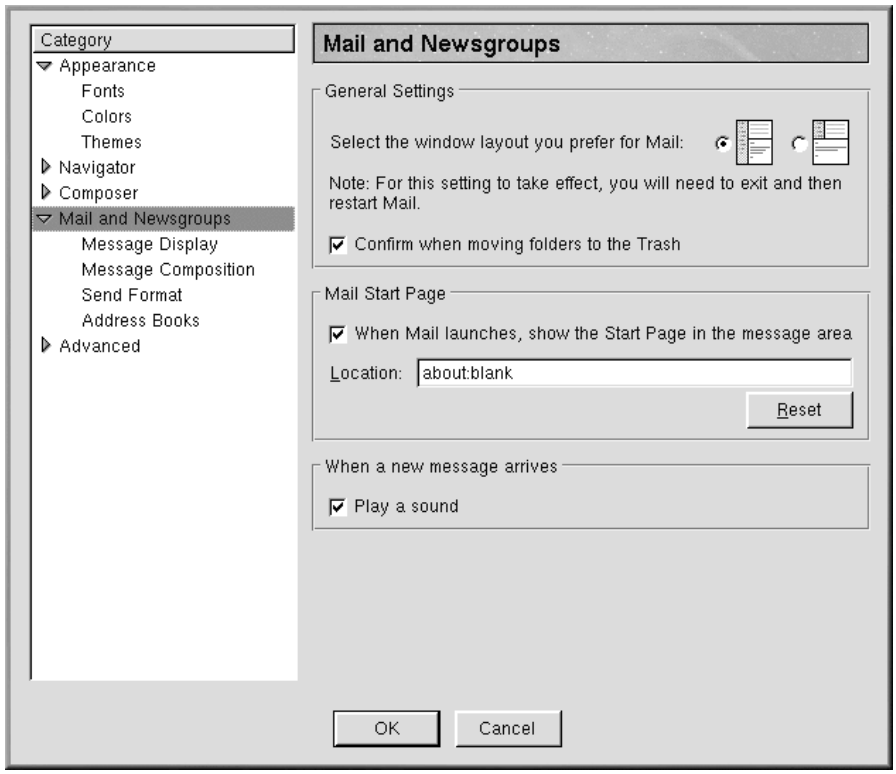
The **Composer** preferences customize settings that pertain to the form and function of HTML pages you develop with the **Mozilla Composer** tool. Under **Recent Pages**, determine how many recently accessed pages will appear when you click on **File** in the main menu. Select the **pretty print** option, under **When Saving Files**, to have Mozilla indent the lines of your HTML properly. This makes it much easier to read later. Under **Table Editing**, you can determine how your HTML will render when you insert or delete table cells.

The **New Page Settings** lets you adjust the default color, background images, and author for new HTML pages. These settings will be the default each time you create a new page.

6.4.4 Mail and Newsgroup Preferences

Mail and Newsgroup settings (Figure 6–6, *Mail and Newsgroup Preferences*) determine how messages appear on your screen, how they are sent, and address book functions.

Figure 6–6 Mail and Newsgroup Preferences



- **Mail and Newsgroups** — Select the window layout for your mail, configure **Start Page** preferences, and determine whether or not you will be alerted with a sound when new mail arrives.
- **Message Display** — Adjust the size and color of fonts in incoming text messages and change the language in which they appear.

- **Message Composition** — Determine whether messages that you forward to people will be sent as attachments or in the body of the message. You can also determine whether or not the original text of messages that you reply to appear in the body of your message and, if so, how. The spell check option, the length of text lines, and the language in which you type can be also be configured here.
- **Send Format** — The **Send Format** options deal with sending messages in HTML rather than plain text format.
- **Addressing** — Under **Email Address Collection**, you can tell Mozilla to automatically collect and store email addresses for you, set a limit on the number of addresses you want to store, and enable or disable autocomplete. Autocomplete looks in your address book after you type the first few letters of an address and supplies you with the rest of the address or possible matches.

6.4.5 Privacy & Security Preferences

- **Cookies** — Cookies are bits of information that some websites store on your computer. Cookies allow the site to recognize your computer on subsequent visits, and are often used to set site-based preferences, to track online purchases, or to collect advertising-related demographics. You can configure your cookie acceptance policy under **Cookies** and view your existing cookies. You can also access cookie information by going to **Tasks** => **Privacy and Security** => **Cookie Manager** on the main menu.
- **Images** — Determine whether (and how) Mozilla will accept images from websites. You can also request an alert before images are accepted and accept images only from the originating server.
- **Forms** — Enabling the **Form Manager** lets you fill out online forms faster. Click on **View Stored Form Data** to enter the information you want to appear on forms. Go to **Tasks** => **Privacy and Security** => **Form Manager** => **Demonstration** for an explanation and demonstration of the Form Manager tool.
- **Web Passwords** — Select the option under **Password Manager** to have Mozilla remember your passwords. You can also have your data encrypted (to prevent access by intruders) by selecting **Use encryption when storing sensitive data**.
- **Master Passwords** — The master password protects the Web password. Click on **Change Password** to, obviously, change your master password. In the **Master Password Timeout** section, tell Mozilla to ask for the master password the first time it is needed, every time it is needed, or after a designated amount of time has passed.
- **SSL**, **Certificates**, and **Validation** — Use the Mozilla help files (go to **Help** => **Help contents** on the main menu) for information on these subjects.

6.4.6 Advanced Preferences

The **Advanced** preferences cover topics such as proxies, cookies, and cache files. Unless you know something about these topics, it is recommended that you leave the default settings as they are.

- **Advanced** — Enable or disable Java and JavaScript, which help interpret how webpages are interpreted. Java is a programming language that can be used to make inter-active programs or animations. JavaScript is a cross-platform Web programming language.
- **Cache** — The cache keeps copies of frequently viewed webpages on your hard drive. This reduces the amount of time you have to spend online. Set the size of the cache in KB here and determine how often a the pages in the cache are compared to those on the network.
- **Proxies** — Proxies provide additional security between your computer and the Internet. See you system administrator for more information.
- **Software Installation** — Enable this option to install software using Mozilla.
- **Mouse Wheel** If you use a mouse wheel, choose from the options here to determine how the wheel behaves when used with designated modifier keys.
- **Offline and Disk Space** — Working offline reduces the amount of time you spend online and helps prevent losing work if there is an interruption in your Internet connection. In the **Offline** section, set preferences to determine Mozilla's behavior when you log on, go online, and go offline.

  Select the option under **Disk Space** if you want folders compacted after they reach a certain size.

6.5 Mozilla Mail

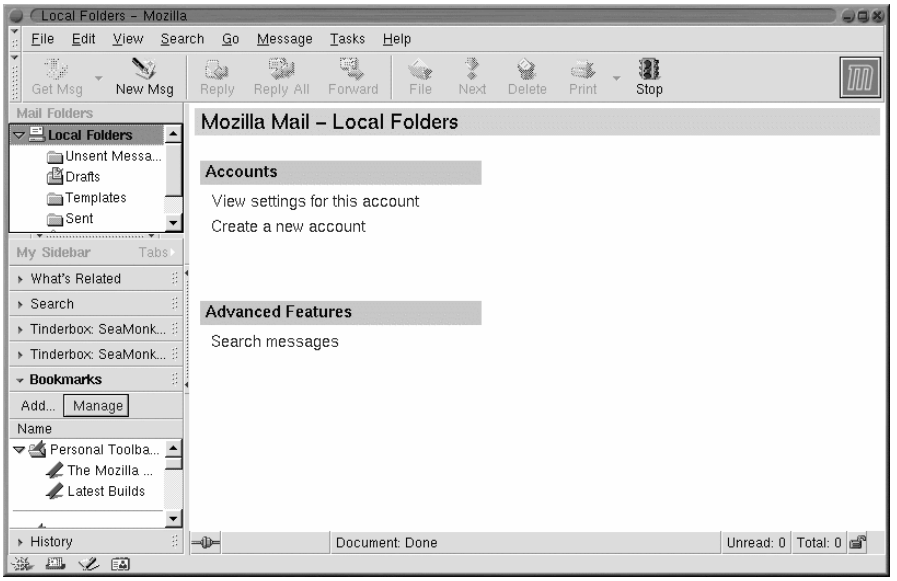
This section covers briefly the basic steps for sending and receiving mail with Mozilla. The Mozilla **Help contents**, located under **Help** on the main menu, provide much more information.

To open the Mozilla mail tool, click on the mail icon near the lower left corner of the Mozilla Navigator screen. 

6.5.1 Create a User Account

To receive mail, you have to set up a mail account. On the left side of the inbox screen, there is a list of mail folders.

Figure 6–7 Mozilla Mail — Local Folders



Click once on **Local Folders**. A list of options appears on the right side of the screen. Click on **Create a new account**.

Figure 6–8 New Account Setup

The first screen you see (Figure 6–8, *New Account Setup*) asks what type of account you want to create. Select **ISP or email provider** and click on **Next**. The following screens ask for your name, email address, server names, and the name you would like to use to refer to the account (work, research, etc). Finish filling in the screens as they appear. The final screen shows the settings you just chose. Click on **Finish** to complete the process. The account you created will now appear in the mail folders list on the sidebar (Figure 6–7, *Mozilla Mail — Local Folders*).

6.5.2 Sending Mail

While there are a number of ways to send mail with Mozilla Mail, the basic steps are:

1. Open Mozilla Mail by clicking on the **Mail** icon in the lower left corner.
2. Click on **New Msg** near the top left corner of the Mail screen.
3. Enter the recipient's email address and the subject of the letter in the corresponding fields.
4. Type your letter in the large text field.
5. Click on **Send**.

You can send the webpage you are viewing, by going to **File** on the main menu and then selecting either **Send Page** or **Send Link** and then filling in the address and subject fields and clicking on **Send**. **Send Page** shows the contents of the page in the body of the email. **Send Link** just puts a link to the page in the body of the email you send.

You can fill in the **To** field manually, or by clicking on the **Address** button near the top of the screen and selecting from the address book that displays. To enter multiple addresses, press the [Enter] key. This moves the cursor to the next empty address field on the composition screen.

Figure 6–9 Mozilla Mail Address and Subject Fields

Clicking on **To** displays a menu of send options. **Cc** sends a copy of an email to someone other than the primary recipient. The Cc address will be visible to all recipients. Selecting **Bcc** also sends the mail to someone other than the primary recipient, but the Bcc address is visible only to the sender and the person designated in the Bcc line.

Reply To and **Followup To** do basically the same thing: respond directly to the person who wrote the email. **Newsgroup** posts your message to a newsgroup you enter in the address field.

Once you fill in the address field(s), fill in the subject line, and the body of the email. To send it, click on the **Send** button or go to **File** => **Send Now** or **Send Later**. If you choose to send later, you can go back to the main mail screen and go to **File** => **Send unsent messages**. For additional information on attaching a file to an email and email etiquette, see Appendix A, *Computer Basics*

6.5.3 Reading Mail

The basic steps for reading mail are:

1. Open Mozilla Mail by clicking on the **Mail** icon in the lower left corner of the Mozilla Navigator screen.
2. Click on the mail folder you created for yourself (see Section 6.5.1, *Create a User Account*) to see a list of messages waiting for you.
3. Click on the message you want to read.

Once you read a message, you can delete it, save it to a separate folder, and more. Go to the main menu and select **Help** => **Help Contents** for lots more information on managing mail with Mozilla.

6.5.4 Creating a Signature

A signature is a brief note at the end of an email or newsgroup posting. Often a quote or joke, signatures say something about the author of the message.

To create a signature, do the following, using the text editor Pico:

- Make sure you are in your home directory. At a shell prompt, type **`pico signature.txt`**.
- In the window which opens, type the text you want for your signature. You can write on more than one line; however, netiquette (conventions of politeness recognized on the Internet) frowns upon signatures longer than a line or two.
- Save the file by using the [Ctrl]-[X] key combination. When you are asked whether you want to save the file, select the [Y] key for "yes."

Now, you will have a new file, called `signature.txt`, in your directory. The full path to the file will be, for example, `/home/newuser/signature.txt`. When you write email or post a message on a newsgroup, the text in `signature.txt` will automatically appear at the bottom of your message.

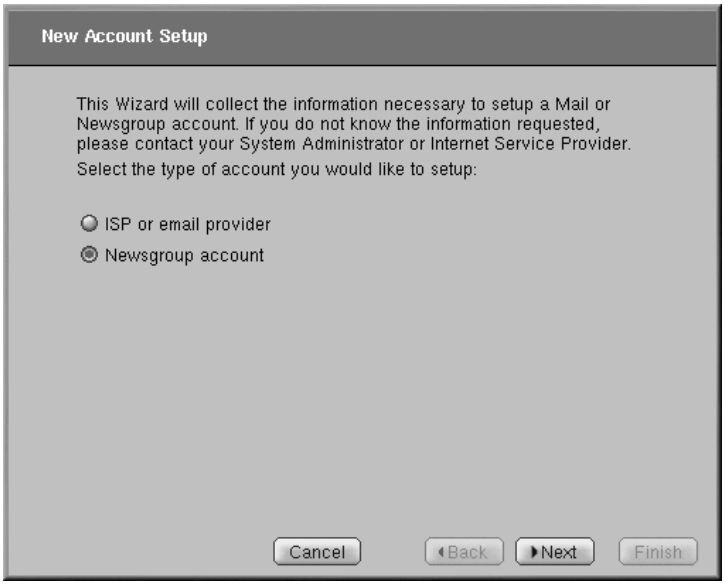
Follow the same steps if you want to change your signature. To delete your signature, open a terminal and type **`rm signature.txt`**.

6.6 Mozilla and Newsgroups

Newsgroups are Internet discussion groups with specific topics. The discussions take place via email and subscribing to a group is very easy. You don’t even have to post messages if you don’t want to; you can just "lurk." There are a great many newsgroups on the Web with topics ranging from politics to computer games to random strange thoughts.

To join a newsgroup, you first need to set up a newsgroup account. Click on your mail account name in the sidebar and select **Create a new account** from the options that appear on the right of the screen. The **New Account Setup** screen appears. Select **Newsgroup account** and click on **Next**.

Figure 6–10 Newsgroup Account Setup



Enter your name and email address on the next screen and click **Next**. On the following screen, enter the name of your news server (if you do not know the name of your news server, contact your Internet service provider for this information). On the last few screens, you can determine the name that this account will be referred to and review your settings.

Now the newsgroup account you just created will appear in the sidebar of the Mozilla mail screen. Right-click on this account name and select **Subscribe**. A dialog box appears, listing all the newsgroups available. Select the ones you want and click on **Subscribe**. When you are done, click on **OK**.

Now, click on the arrow next to the newsgroup account name and the list of groups you are subscribed to will appear beneath. Select the newsgroup you want to access and a dialog box appears with information about downloading and reading existing messages. Posting to a newsgroup is just like writing an email, except that the newsgroup name appears in the **To** field rather than an email address. To unsubscribe from a newsgroup, right-click on the group name and select **Unsubscribe**.

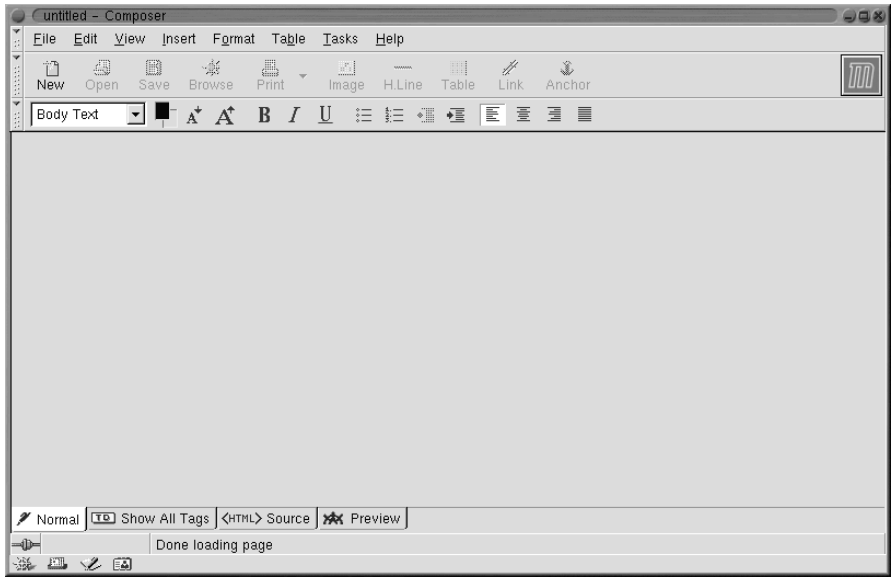
6.7 Mozilla Composer

You can use Mozilla Composer to create webpages. You do not need to know HTML to use this tool. To open Composer, go to **Tasks** => **Composer** on the Mozilla main menu, or click on the **Composer** icon in the lower left part of the screen.

The Mozilla help files provide information on creating webpages with Composer.

Go to **Help** on the main menu and select **Help Contents**. When the help screen opens, click on the **Contents** tab and expand the **Creating Webpages** menu by clicking on the arrow next to it. A list of topics will appear and clicking on any of these will provide you with information for creating and editing webpages using Mozilla Composer.

Figure 6–11 Mozilla Composer



7 Printer Configuration

This chapter provides information on configuring, testing, and modifying a local printer with printconf. For information on configuring other types of printers, creating printer aliases, and more, see Official Red Hat Linux Customization Guide or click on the **Help** button once you open the printconf application.

Red Hat Linux no longer includes printtool. The printconf utility has replaced printtool. The printconf utility maintains the `/etc/printcap` configuration file, print spool directories, and print filters.

To use printconf, you must be running the X Window System and have root privileges. To start printconf, use one of the following methods:

- On the GNOME desktop, go to **Main Menu** => **Programs** => **System** => **Printer Configuration** or, in the Nautilus **Start Here** screen, click on **System** and then on **Printer Configuration**.
- On the KDE desktop, go to **Main Menu System** => **Printer Configuration**.
- Type the command `printconf-gui` at a shell prompt (for example, in an XTerm or a GNOME terminal). [1]

You can also run printconf as a text-based application if you do not have the X Window System installed, or you just prefer the text-based interface. To run it, log in as root (or use the command `su` to temporarily change to the root user), and type the command `/usr/sbin/printconf-tui` from a shell prompt.

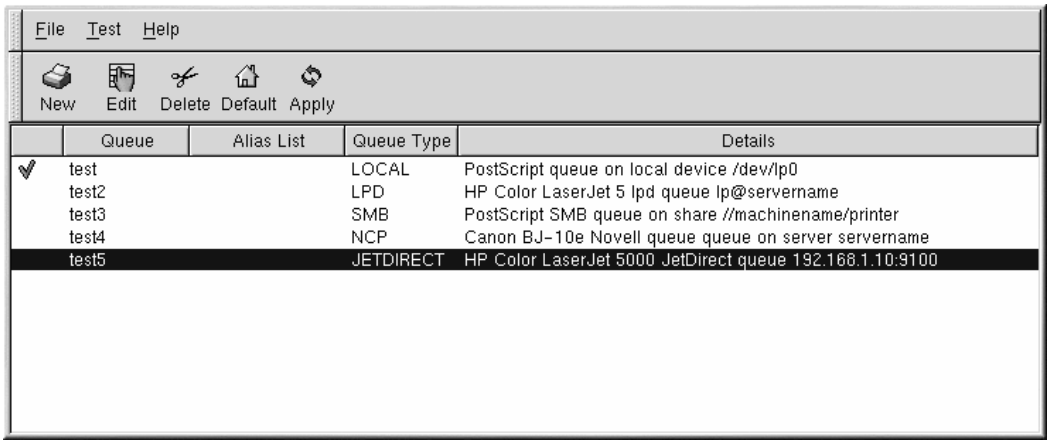
Do Not Edit `/etc/printcap`

Do not edit the `/etc/printcap` file. Each time the printer daemon (`lpd`) is started or restarted, a new `/etc/printcap` file is dynamically created.

If you want to add a printer without using printconf, edit the `/etc/printcap.local` file. The entries in `/etc/printcap.local` are not displayed in printconf but are read by the printer daemon. If you upgrade your system from a previous version of Red Hat Linux, your existing configuration file is converted to the new format used by printconf. Each time a new configuration file is generated by printconf, the old file is saved as `/etc/printcap.old`.

[1] If you type `printtool` at a shell prompt, printconf will start.

Figure 7–1 printconf



This chapter explains local printer configuration only, but five types of print queues can be configured with printconf:

- **Local Printer** — a printer attached directly to your computer through a parallel or USB port. In the main printer list as shown in Figure 7–1, *printconf*, the **Queue Type** for a local printer is set to **LOCAL**.
- **Unix Printer (lpd Spool)** — a printer attached to a different UNIX system that can be accessed over a TCP/IP network (or example, a printer attached to another Red Hat Linux system on your network). In the main printer list as shown in Figure 7–1, *printconf*, the **Queue Type** for a remote UNIX printer is set to **LPD**.
- **Windows Printer (SMB)** — a printer attached to a different system which is sharing a printer over a SMB network (for example, a printer attached to a Microsoft Windows machine). In the main printer list as shown in Figure 7–1, *printconf*, the **Queue Type** for a remote Windows printer is set to **SMB**.
- **Novell Printer (NCP Queue)** — a printer attached to a different system which uses Novell's NetWare network technology. In the main printer list as shown in Figure 7–1, *printconf*, the **Queue Type** for a remote Novell printer is set to **NCP**.
- **JetDirect Printer** — a printer connected directly to the network instead of to a computer. In the main printer list as shown in Figure 7–1, *printconf*, the **Queue Type** for a JetDirect printer is set to **JETDIRECT**.

See the Official Red Hat Linux Customization Guide or click on the printconf **Help** button for information on configuring printers other than local.

Important

If you add a new print queue or modify an existing one, you need to restart the printer daemon (`lpd`) for the changes to take effect.

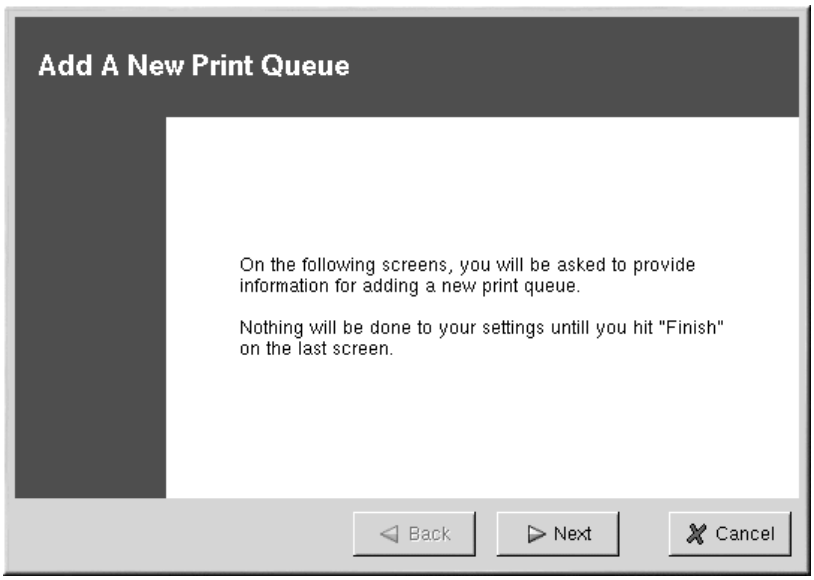
Clicking the **Apply** button saves any changes that you have made and restarts the printer daemon. The changes are not written to the `/etc/printcap` configuration file until the printer daemon (`lpd`) is restarted. Alternatively, you can choose **File** => **Save Changes** and then choose **File** => **Restart lpd** to save your changes and then restart the printer daemon.

If a printer appears in the main printer list with the **Queue Type** set to **INVALID**, the printer configuration is missing options that are required for the printer to function properly. To remove this printer from the list, select it from the list and click the **Delete** button.

7.1 Adding a Local Printer

To add a local printer such as one attached to the parallel port or USB port of your computer, click the **New** button in the main printconf window. The window shown in Figure 7–2, *Adding a Printer* will appear. Click **Next** to proceed.

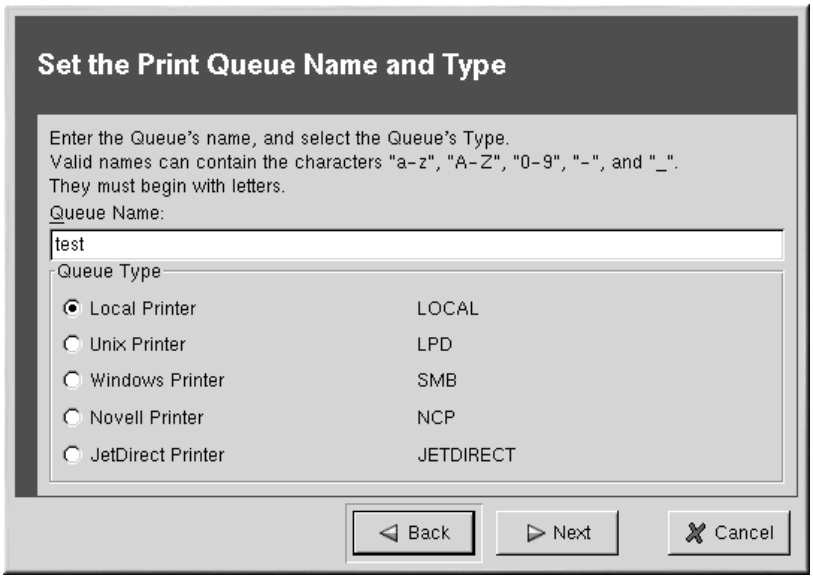
Figure 7–2 Adding a Printer



You will then see the screen shown in Figure 7–3, *Adding a Local Printer*. Enter a unique name for the printer in the **Queue Name** text field. This can be any descriptive name for your printer. The printer name cannot contain spaces and must begin with a letter a through z or A through Z. The valid characters are a through z, A through Z, 0 through 9, -, and _.

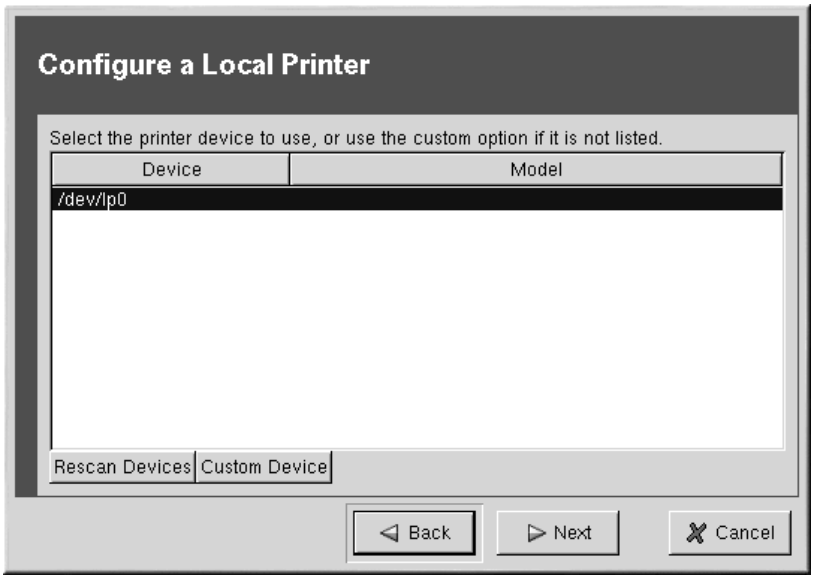
Select **Local Printer** from the **Queue Type** menu, and click **Next**.

Figure 7–3 Adding a Local Printer



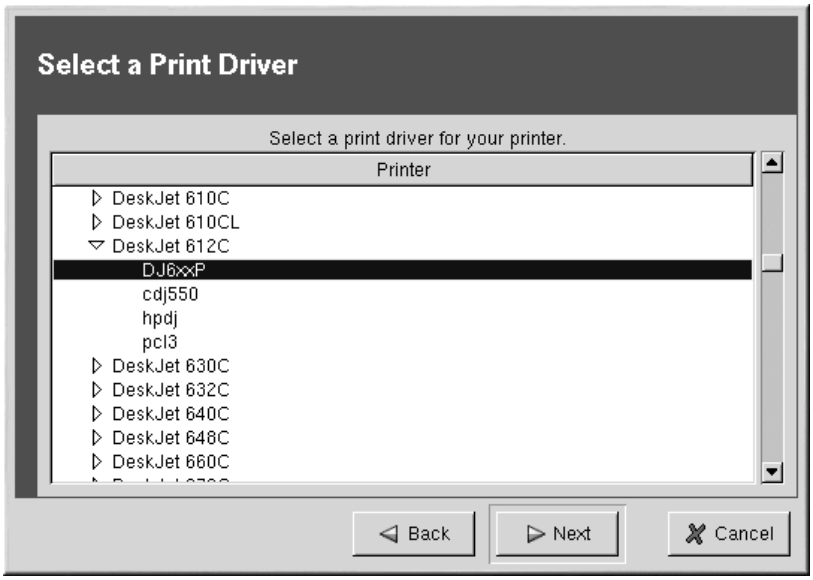
printconf attempts to detect your printer device and display it as shown in Figure 7–4, *Choosing a Printer Device*. If your printer device is not shown, click **Custom Device**. Type the name of your printer device and click **OK** to add it to the printer device list. After selecting your printer device, click **Next**.

Figure 7–4 Choosing a Printer Device



Next, printconf will try to detect which printer is attached to the printer device you selected as shown in Figure 7–5, *Choosing a Printer Driver*. If it detects the wrong printer or does not detect any printer, you can manually select one. The printers are divided by manufacturers. Click the arrow beside the manufacturer for your printer. Find your printer from the expanded list, and click the arrow beside the printer name. A list of drivers for your printer will appear. Select one. If you do not know which one to use, select the first one in the list. If you are having problems using that driver, edit the printer in printconf and select a different driver.

Figure 7–5 Choosing a Printer Driver



The last step is to confirm your printer. Click **Finish** if this is the printer that you want to add. Click **Back** to modify your printer configuration.

The new printer will appear in the printer list in the main window. Click the **Apply** button in the main window to save your changes to the `/etc/printcap` configuration file and restart the printer daemon (`lpd`). After applying the changes, print a test page to ensure the configuration is correct. Refer to Section 7.1.1, *Printing a Test Page* for details.

7.1.1 Printing a Test Page

After you have configured your printer, you should print a test page to make sure the printer is functioning properly. To print a test page, select the printer that you want to test from the printer list, and choose **Test** => **Print US Letter Postscript Test Page**, **Print A4 Postscript Test Page**, or **Print ASCII Test Page** from the pulldown menu. If your printer does not support PostScript printing, choose to print the ASCII test page.

7.2 Modifying Existing Printers

To delete an existing printer, select the printer and click the **Delete** button on the toolbar. The printer will be removed from the printer list. Click **Apply** to save the changes and restart the printer daemon.

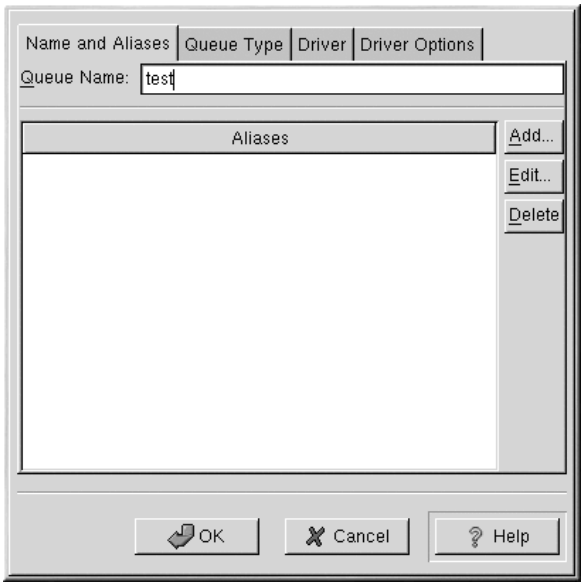
To set the default printer, select the printer from the printer list and click the **Default** button on the toolbar. The default printer icon ✓ appears in the first column of the printer list beside the default printer.

If you want to modify an imported printer's settings, you cannot modify its settings directly. You must override the printer. You can only override an imported printer that has been imported using the alchemist libraries. Imported printers have the ⇒ symbol beside them in the first column of the printer list.

To override the printer, select the printer, and choose **File** => **Override Queue** from the pulldown menu. After overriding a printer, the original imported printer will have the ⇒ symbol beside it in the first column of the printer list.

After adding your printer(s), you can edit settings by selecting the printer from the printer list and clicking the **Edit** button. The tabbed window shown in Figure 7–6, *Editing a Printer* will appear. The window contains the current values for the printer that you selected to edit. Make any changes, and click **OK**. Click **Apply** in the main printconf window to save the changes and restart the printer daemon.

Figure 7–6 Editing a Printer



7.2.1 Names and Aliases

If you want to rename a printer, change the value of **Queue Name** in the **Names and Aliases** tab. Click **OK** to return to the main window. The name of the printer should change in the printer list. Click **Apply** to save the change and restart the printer daemon.

A printer alias is an alternate name for a printer. To add an alias for an existing printer, click the **Add** button in the **Name and Aliases** tab, enter the name of the alias, and click **OK**. Click **OK** again to return to the main window. Click **Apply** to save the aliases and restart the printer daemon. A printer can have more than one alias.

7.2.2 Queue Type

The **Queue Type** tab shows the queue type that you selected when adding the printer and its settings. You can change the queue type of the printer or just change the settings. After making modifications, click **OK** to return to the main window. Click **Apply** to save the change and restart the printer daemon.

7.2.3 Driver

The **Driver** tab shows which printer driver is currently being used. This is the same list that you used when adding the printer. If you change the printer driver, click **OK** to return to the main window. Click **Apply** to save the change and restart the printer daemon.

7.2.4 Driver Options

The **Driver Options** tab displays advanced printer options according to the printer driver you selected. Common options include **Page Size**, **Send EOT**, **Rerender Postscript**, and **Convert Text to Postscript**. If you modify the driver options, click **OK** to return to the main window. Click **Apply** to save the change and restart the printer daemon.

7.3 Additional Resources

To learn more about printing on Red Hat Linux, refer to the following resources.

7.3.1 Installed Documentation

- `man printcap` — The manual page for the `/etc/printcap` printer configuration file.
- Official Red Hat Linux Customization Guide

7.3.2 Useful Websites

- http://www.linuxprinting.org — *GNU/Linux Printing* contains a large amount information about printing in Linux.

8 Audio, Video, and General Amusement

8.1 Configuring a Sound Card

Sound capability is included Red Hat Linux. If, for some reason, you do not hear sound and know that you do have a sound card installed, you can run the sndconfig utility.

To use sndconfig:

1. From a shell prompt, use the **su -** command to become root.
2. Type `sndconfig` at the command line.

To navigate through the **Yes**, **No**, **Cancel**, and **option** buttons, use your [Tab] and [Enter] keys.

Is Your Sound Card Supported?

Many sound cards are supported for Red Hat Linux, but there are sound cards that are not completely compatible, or even compatible at all. If you are having trouble configuring your sound card, check the Hardware Compatibility List at http://hardware.redhat.com/ to see if your card is supported.

The sndconfig utility probes your system for sound cards. If the utility detects a plug and play sound card, it will automatically try to configure the correct settings by playing sound samples. If you can hear the samples, just select **Ok** when instructed and your sound card configuration is complete.

If the probe does not find any cards, you will be presented with a list from which you can select your card. Use the up and down arrow keys to scroll through the list. If your card is listed, highlight it, then press [Enter] (or [Tab] to the **Ok** button and press [Enter]).

Your next task will be to select the correct I/O port, IRQ, and DMA settings. These settings are determined by the jumper settings of the sound card. You can find information about these settings in your sound card documentation. If you share your machine with Windows, you can also find your sound card's settings in the **Device Manager** tab, in the **System** section of your **Control panel**.

Once you have selected the right settings for your card, you will be presented with sound samples. If you hear the samples, select **Ok** and sound configuration is complete.

After your card is configured, type **exit**. You will be returned to your user account.

8.1.1 If sndconfig Does Not Work

If sndconfig does not work (if the sample does not play and you still do not have audio sounds), there are alternatives, although they are not quite as simple as running sndconfig. You can edit your

`modules.conf` file as discussed below (this strategy is not recommended for novices), or refer to the documentation that came with your soundcard for more information.

If your soundcard is not a plug and play card, you can manually edit your `/etc/modules.conf` file to include the sound card module that it should use, for example:

```
 alias sound sb
alias midi opl3
options opl3 io=0x388
options sb io=0x220 irq=7 dma=0,1 mpu_io=0x300
```

8.2 Speakers, Headphones, and Sound Etiquette

Most computers have a plug on the back of the CPU designated for speakers and headphones. If you have configured your sound card, any system or website sounds should play through the speakers or headphones.

Your CD-ROM probably has a plug near it as well, so you can listen to music CDs through the CD-ROM drive. See Section 8.3, *Playing CDs*.

Regardless of how you choose to listen to music or other sounds, you should remember that there may be other people working near you who are not interested in hearing your computer. Be courteous and keep the volume down. Even headphones can "bleed" noise and disturb others.

Add the Mixer Applet (**Main Menu** => **Panel** => **Add to Panel** => **Applet** => **Multimedia** => **Mixer**) to your panel so you can control system volume. Click on the speaker icon in this applet to mute or activate sound and use the slider bar to control volume level. Note that the CD-ROM probably has its own volume control next to the CD drawer on your computer.

8.3 Playing CDs

You should be able to put a music CD in your CD-ROM and see the CD player start automatically. If not, in GNOME, go to **Main Menu** => **Programs** => **Multimedia** => **CD player** to open the CD player. In KDE, go to **Main Menu** => **Multimedia** => **CD Player**.

Figure 8–1 GNOME CD Player Interface

The CD player interface acts like a standard CD player, with play, pause, and stop functions. A volume control slider is located at the bottom of the interface. You can also edit the track listings for your CDs and change the way the utility functions by clicking on the **Open Track Editor** and **Preferences** buttons and making your selections.

Set your preferences to use CDDB and it will look up the name of the CD and its songs from an extensive online database and list them in the GUI. The first time you play a CD, you will need to be online for this feature to work; the information will be stored and displayed in the future whether you are online or not. This is not a requirement — it is just a convenient feature.

8.4 Configuring a Video Card

You probably configured your video card during installation (see the *Official Red Hat Linux Installation Guide*), but you can change your video configuration settings at any time using the Xconfigurator utility. You will want to do this if you, for example, install a new video card.

CAUTION

Xconfigurator will overwrite your system's original video configuration file. As a safety measure, be sure to make a backup of the `/etc/X11/XF86Config` file before running Xconfigurator.

To run Xconfigurator, log in as root and type **`Xconfigurator`** at a shell prompt. Follow the instructions that appear on the screen. Make your selections using the [Tab] and [Enter] keys.

When you have finished reconfiguring your video card, log out of root and log back in to your user account.

Cameras, scanners, and other peripherals can be used with Red Hat Linux, but are not discussed in this manual. The Linux Documentation Project is an excellent source of information for using peripherals

and much more. Visit their site at http://www.linuxdoc.org and search the HOWTOS for the information you want.

8.5 Games and Amusements

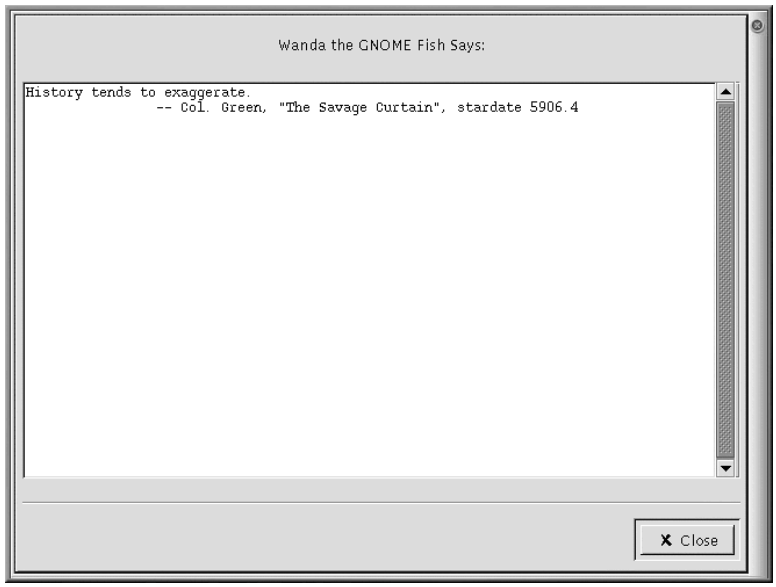
To open games in GNOME, go to **Main Menu** => **Programs** => **Games**. In KDE, go to **Main Menu** => **Games**. Many games include rules and tips within the menu options.

Additional games are available online; http://www.lokigames.com/ and http://www.linuxquake.com/ are two popular sites. Also, try searching the Internet for "linux games" using a search engine.

Computer programmers can be very entertaining people. Little applets are created and added to software for no other reason than to amuse. In GNOME, go to **Main Menu** => **Applets** and look through the applets available in **Amusements**, **Clocks**, and **Utility**. Fish will open a dialog box (Figure 8–2, *Wanda The Fish*)displaying a quote that changes every time you click on the icon. gEyes will add two eyes to your panel that follow your cursor around the screen. **Gnome Weather** (which is under **Utility**)will dock a button on your panel that displays a miniature weather report.

KDE has a menu option called **Toys**. Look through these when you want a little entertainment.

Figure 8–2 Wanda The Fish



The text editor Emacs has several hidden surprises, too. Open the application with **Main Menu** => **Programs** => **Applications** => **Emacs**. Press [Alt]-[x]; then type the word **`doctor`** to open the application's "psychiatrist." Also in Emacs, press [Esc]-[x] and then type "yow" to see a quote at the bottom of the screen. Press [Esc]-[x] and type "psychoanalyze-pinhead" and Emacs displays all the quotes in its database (press [Ctrl]-[C] to stop).

9 Manipulating Images With GIMP

9.1 Introduction to the GIMP

You can use the GNU Image Manipulation Program (GIMP) to create, alter, manipulate, and enhance digital image files -- photographs, scanned images, computer-generated images, and more. Use this tool to design images for documents, presentations, websites, and so on.

The GIMP is a well-documented application. Refer to the version of the Official Red Hat Linux Getting Started Guide that is available on your documentation CD and online at http://www.redhat.com/support/manuals for basic information to get you started with the GIMP. Refer to the lists below for other printed and online GIMP resources.

9.1.1 Related Books

The following books were available at the time of this writing:

- *The Artists' Guide to the GIMP* by Michael J. Hammel; Frank Kasper and Associates, Inc.
- *GIMP Essential Reference* by Alex Harford; New Riders Publishing
- *GIMP for Linux Bible* by Stephanie Cottrell Bryant, et al; Hungry Minds, Inc.
- *GIMP: The Official Handbook* by Karin Kylander and Olof S. Kylander (including "Mike Terry's Black Belt School of Script-Fu," an excellent how-to chapter on writing Script-Fus); The Coriolis Group
- *Grokking the GIMP* by Carey Bunks; New Riders Publishing
- *Sams Teach Yourself GIMP in 24 Hours* by Joshua and Ramona Pruitt; Sams

9.1.2 Useful Websites

Information about the GIMP is available on the Web:

http://www.gimp.org/

The official GIMP website

http://www.rru.com/~meo/gimp/faq-user.html

A Frequently Asked Questions (FAQ) list for questions commonly asked about the GIMP by GIMP users (as opposed to developers)

http://manual.gimp.org/manual/

The *GIMP User Manual* (by Karin Kylander and Olof S. Kylander) website, which includes the chapter "Mike Terry's Black Belt School of Script-Fu," an excellent resource for anyone who wants to learn how to write a Script-Fu

http://empyrean.lib.ndsu.nodak.edu/~nem/gimp/tuts/

The GIMP Tutorials Pointer Page

http://gimp-savvy.com/

The companion website to the book *Grokking the GIMP*, by Carey Bunks

http://tigert.gimp.org/gimp/

The GIMP website of tigert (Tuomas Kuosmanen), the artist who created Wilber (the GIMP mascot), as well as many other GIMP graphics

http://brahms.fmi.uni-passau.de/~anderss/GIMP/

The GIMP 1.0 Quick Reference Sheet — a tri-fold list of GIMP commands.

Part II Intermediate Tasks

10 Shell Prompt Basics

10.1 Why Use a Shell Prompt?

Graphical environments for Linux have come a long way in the past few years. You can be perfectly productive in the X Window System, without ever having to open a shell prompt.

However, many Red Hat Linux functions can be completed faster from the shell prompt than from a GUI. In less time than it might take you to open a file manager, locate a directory, and then create, delete, or modify files from a GUI, you could have finished your work with just a few commands at a shell prompt.

New users are often more comfortable using a GUI for most functions and then gradually feel at ease learning and typing commands manually. The shell prompt functions you need to know for basic Red Hat Linux use are explained in the other chapters of this manual as needed. If you would like to learn more about using the shell prompt, refer to Chapter 10, *Shell Prompt Basics* on the Documentation CD, included in your box set and online at http://www.redhat.com/support/manual .

Figure 10–1 A Shell Prompt

11 Managing Files and Directories

The GNOME and KDE file managers are powerful and important tools. You can use these applications to help you create, edit, and delete files and directories, as well as accomplish other tasks throughout your system. This chapter also explains how to manage files and directories from the command line.

Permissions

Unless you are root, you will not be able to gain access to all the files and directories on your system. If you do not have the permission to open, delete, or execute a file, you will receive an error message saying your access is denied.

See *Introductory Terms* for information on logging in with **su** (as opposed to **su -**) for more on permissions.

This chapter provides an overview of Nautilus and Konquerer, the file managers for GNOME and KDE. To learn more, read the *GNOME User's Guide* or the KDE user's documentation in their respective help browsers. You can also find the latest documentation at their websites: http://www.gnome.org and http://www.kde.org.

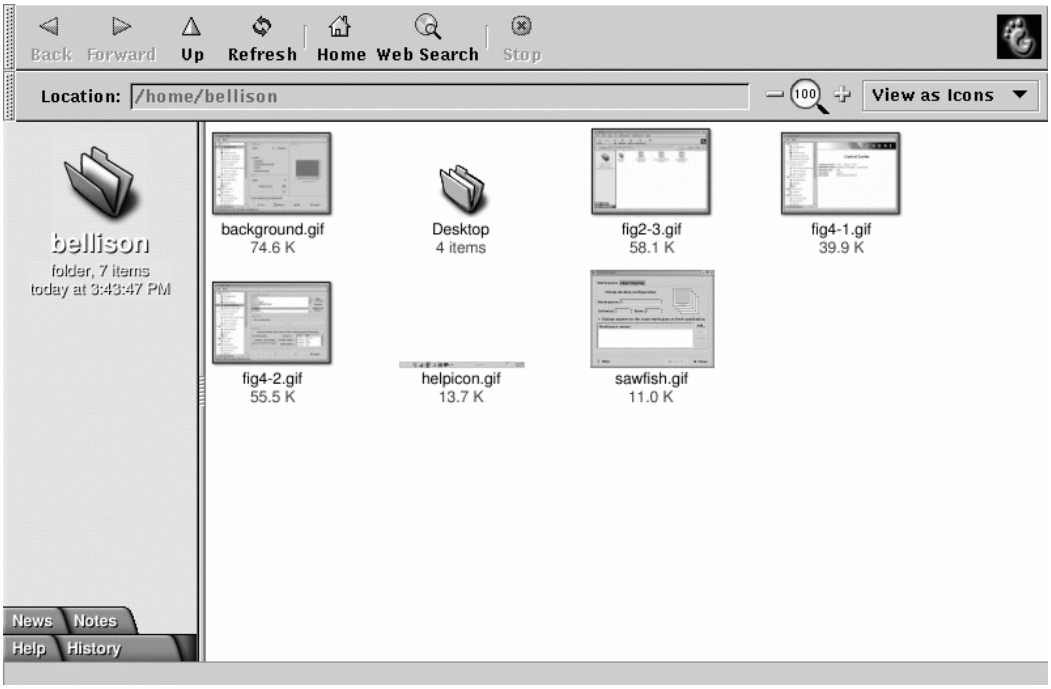
11.1 The GNOME File Manager

The GNOME file manager, Nautilus, lets you easily browse and work with files and directories. If Nautilus does not open on your desktop by default:

- From the **Main Menu Button**, click on **Programs** => **Applications** => **Nautilus**.
- From the desktop, click on the home directory icon. By default, this icon looks like a house.

When you first open Nautilus, you see something similar to Figure 11–1, *A Sample Nautilus Window*.

Figure 11–1 A Sample Nautilus Window



On the left, you see a folder representing the directory in which you are currently working. On the right, you see the contents of that folder (as a new user, it is unlikely that there will be many new files or directories when you first open the file manager). Click on the drop-down menu labelled **View as Icons** and select **View as List** to have your files displayed as lists rather than icons.

Changing the Order

If you view directory contents as lists, you can determine the order in which items are displayed by clicking on one of the list headings. For example, if you want to see the list alphabetically, click on the **Name** heading.

Resize Individual Icons

Each icon can be resized individually. Left-click once on an icon to select it and then right-click once on it. From the pop-up menu that appears, select **Stretch Icon**. A box appears around the icon and you can click and drag any of the corners of this box to resize the icon.

Stretching an icon can make it look fuzzy. Open the pop-up menu as described above and select **Restore Icon's Original Size** to return it to default size.

11.1.1 Navigation

Use the navigation buttons above the **Location** bar to move through your files and directories:

- **Back** and **Forward** — Move you up or down through the directory listing history.
- **Up** — Moves you "up" the directory tree.
- **Refresh** — Refreshes the view of the current directory.
- **Home** — Lets you jump back to your default directory.
- **Web search** — Opens a search engine.
- **Stop** — Stops a page from loading.

You can type a directory location straight into the **Location** bar. If you know the path where you want to go, for example `/etc/X11`, you can type it into the **Location** bar and press [Enter] to move to that location. You can acces the Internet by typing website addresses in the location bar as well (for information on configuring an Internet connection, see Chapter 5, *Getting Online*).

Copying and Moving Files and Directories

You can copy and move files and directories from a window to your desktop or to another folder (that is, directory). If you want to move a file or directory to your desktop, just drag and drop it there.

You can also right-click on an item, select **Copy File**, place the cursor where you want the item to go, right-click again, and select **Paste**. If you want to delete the item from its original location, go back to the original, right-click, and select **Cut file**.

Another way to copy an item is by clicking on the icon or item name, then dragging it while holding down the [Shift] key. This will copy it without removing the original from its current location.

Deciding Whether to Copy or Move an Item

Not sure whether you want to move or copy something? Use the [Alt] key when you drag an item. A pop-up menu will appear once you release it, letting you choose whether to copy or move. You can also choose to link the item, which, essentially, is a shortcut to the item in its original location.

File Properties

To change a file's properties, right-click on a file or directory in the directory window and choose **Show Properties**. A dialog, similar to Figure 11–2, *File Properties Dialog*, opens.

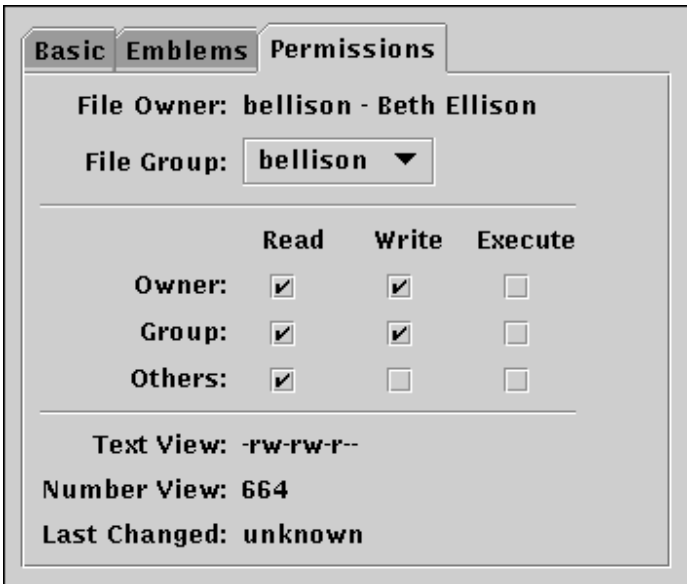
Figure 11–2 File Properties Dialog

On the **Basics** tab, you see information about the file, such as the size of the file and the last time it was modified.

You can change the icon for the file by clicking on **Select Custom Icon** and choosing from the icon selections that appear. **Remove Custom Icon** reinstates the file's default icon.

Emblems can be added to a file icon, indicating that the file is personal, new, a draft, very important, a personal favorite, and so on. Click on the **Emblems** tab to select informational emblems for a file. Use the check boxes next to the emblems to add or remove them.

Figure 11–3 The File Properties' Permissions Tab



On the **Permissions** tab (see Figure 11–3, *The File Properties' Permissions Tab*), you can change the permissions and ownership of a file (that is, if you have the right permissions yourself). You can change the read, write, and execute settings for a file. For more information on permissions, see Chapter 10, *Shell Prompt Basics*

11.1.2 Setting Nautilus Preferences

Nautilus has three user levels for you to choose from and many preference options within each level that can be configured to your liking. Click on **Preferences** at the top of the Nautilus screen. Here, you can select beginner, intermediate, or advanced user level. Obviously, as the levels go progressively higher, the available preference options grow in number and complexity.

Select a user level that best suits your level of Linux knowledge. You can change this user level at anytime and without having to log out of your system for them to take effect.

Select **Edit Preferences** to open a window where you can configure all of the options available to the user level you have chosen (see Figure 11–4, *Nautilus File View Preferences*).

The following is a list of all the preferences you can configure. If you do not see a particular choice when you open the **Edit Preferences** window, it is because that choice is not available to the user level you have chosen.

Figure 11–4 Nautilus File View Preferences

View Preferences

Default View — Change the default file arrangement from icons to list by clicking on the drop-down menu and selecting your choice.

Icon/List View Defaults —

- Lay out items — Select the order in which items in a folder appear: Manually (arrange them in any order you like), By Name (alphabetically), By Size (from largest to smallest), By Type (files are grouped according to type), By Modification Date (most recently modified first), or By Emblems (files with like emblems are grouped together and those without emblems are at the end).
- Sort in Reversed Order — Reverses the order of any of the above layout selections.

- Select a Font — Select a font from the dropdown menu if you want one other than the default.
- Default Zoom Level — Change the default size in which items appear.
- Use Tighter Layout — Set the icons closer together.
- Font Size at Default — Change the default font size (12-point, 14-point, 20-point, etc).

Appearance

Select the smoother (higher quality) graphics option if you like, as well as various font options and Nautilus themes (the screens are self-explanatory). You can add themes here by clicking on **Add New Theme** and entering a file name for a theme you have created or downloaded.

Windows and Desktop

Under **Desktop**, choose whether Nautilus or your home folder will draw your desktop. The difference, basically, is that Nautilus offers more configuration options than your home folder.

The other sections deal with new window and trach can behavior and keyboard shortcuts. The options are self-explanatory.

Icon and List Views

Choose to activate items with a single or double mouse click and other self-explanatory file display options.

Icon Captions

Select the order in which you want file information to appear (size, type, last date modified, etc.).

Sidebar Panels

Determine which tabs appear in the Nautilus sidebar (Help, History, News, Notes). Also indicate if you want folders (directories) only to appear in the sidebar or folders plus a list of the files they contain.

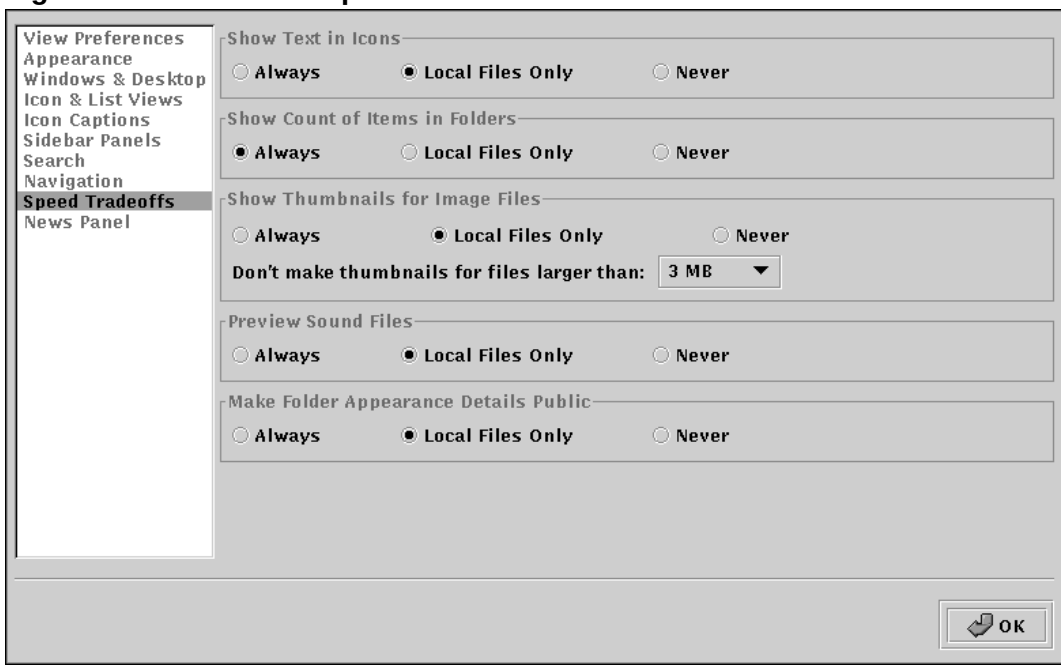
Search

Change your default search engine

Navigation

Change your default **Home** location (can be a file or a website), change HTTP proxy settings, and remove the built-in bookmarks that Red Hat Linux includes in the browser bookmark list by default.

Figure 11–5 Nautilus Speed Tradeoffs



Speed Tradeoffs

There are many interesting and convenient functions in Nautilus, but some of them can slow down your system. All of the preferences on the **Speed Tradeoffs** tab (see Figure 11–5, *Nautilus Speed Tradeoffs*) have **Always**, **Local Files Only**, and **Never** options. Obviously, selecting **Always** puts the most demand on your system and this demand decreases with the next two options.

The **Show Text in Icons** option shows a portion of a text file's contents on the actual icon. Directory folders show, by default, the number of items they contain; change this option under **Show Count of Items in Folders**. Icons for image files can look like the images themselves; choose your preference for this option, under **Show Thumbnails for Image Files**. Excerpts of sound files can be previewed automatically by placing the cursor over the icon or file name; choose your preferences for this option under **Preview Sound Files**.

The last option, **Make Folder Appearance Details Public**, controls how directories you create appear to others who have access to them. If you customize a file so it has a background image, for example, anyone else who has permission to access that file also sees the background image.

News Panel

The **News Panel** preferences control the information shown when you click on the **News** tab on the left of the Nautilus screen. Change the preferences to determine how many news items are shown on the tab and how often they are automatically updated.

11.2 The KDE File Manager

Like GNOME's file manager, Konquerer is a graphical tool you can use to view and work with directories and files.

Useful Online and Offline

Because Konquerer uses HTML to display information, it can be used as a Web browser, as well as a browser for the files on your system. Just type a Web address (a URL) into the **Location** bar when you are online, and you will jump to your chosen website.

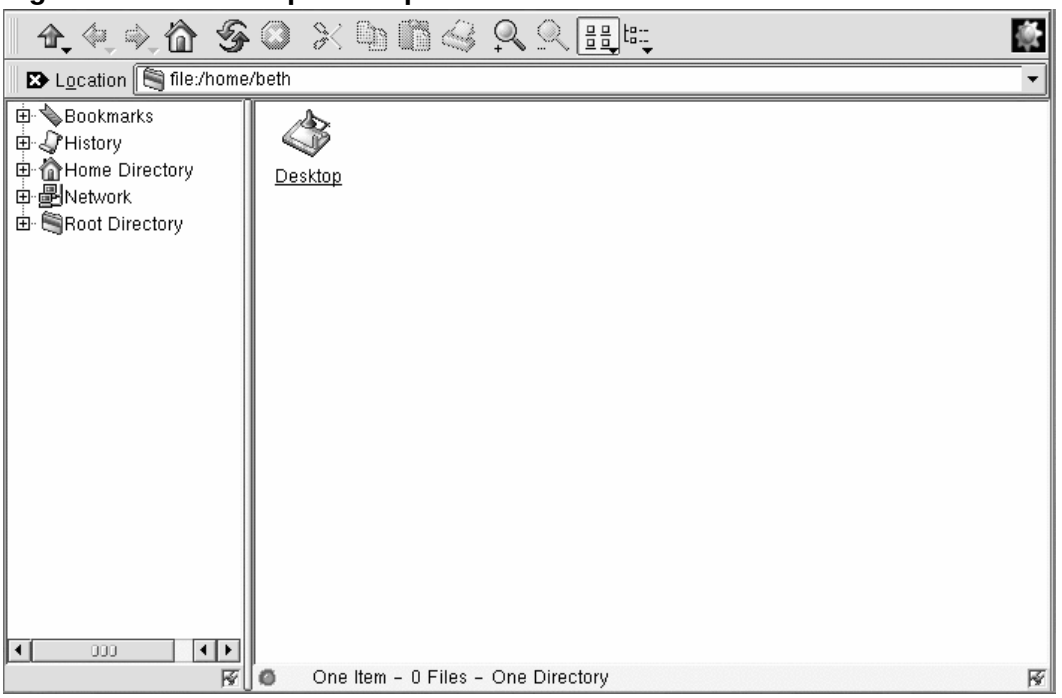
11.2.1 Using Konquerer

The easiest ways to start Konquerer are:

- From the **Main Menu K** icon — Click on the **Home Directory** entry.
- From the panel — Click on the **Home Directory** icon, which looks something like: 

When your home directory window opens, you will see something similar to Figure 11–6, *A Sample Konquerer Window*. By default, the view contains icons and links to associated files on your system. You can change the view, using the **View** menu.

Figure 11–6 A Sample Konquerer Window



In fact, you have quite a few choices for viewing files and directories in the content area; when you select (or deselect) a choice, the content area will refresh with your new view. Some of the options under **View** are:

- **View Mode** — Select the way you want the icons to appear in the Konquerer window.
- **Icon Size** — Determine the size of the icons.
- **Show Hidden Files** — View hidden files (also called "dot files") in the Konquerer window. Hidden files are usually configuration files and are not often accessed by users.
- **Use index.html** — Select this view if you want to see a directory as a Web page. This can be fun if you know HTML, or want to learn how to write a Web page. All you have to do is name your file `index.html`, and place your content as links in the file. When Konquerer opens the directory, it will open the `index.html` file.

Click once on a file to open the file in its associated application. For example, the file `signature.txt` is a text file. Click on it to open kedit, KDE's text editor.

To open a directory, click once on the corresponding file folder.

Express Yourself With Backgrounds

Want to give the content area a colorful image background? Just right-click inside the content area of a Konquerer window, go to the **Dir** tab, and you can change your background. If you want to use one of the included backgrounds, select an image from the pulldown list.

Note, however, that some of the included backgrounds will probably put a strain on your eyesight. With names such as **spoiled_sprouts** and **ringworm_circus**, you should not expect a soothing visual experience. You can also select a background of your own by clicking on the **Browse** button and picking an image elsewhere on your system (for example, an image file in your `/home` directory).

If you prefer to change only the color, you can modify the color settings by going to the menu and clicking **Options** => **Configure File Manager**. Change the background by selecting the **Color** tab; you can change the fonts by selecting the **Font** tab.

Navigation

If you have used a Web browser or file manager before, you will find that moving around with Konquerer seems familiar. You can type the path location of a file (and the address of a website or FTP site) in the **Location** bar. Above the **Location** bar, icons on the **Navigation bar** help you quickly move to other directories. Briefly, here is a description of some of the icons:

- The arrow pointing up will take you up the directory tree. For example, if you are in `/home/newuser` and you click on the up arrow, you will move to `/home`; click once more, and you will be at `/`, or root (the root of your filesystem, that is, not the *root account's* login directory).
- Click on the arrow pointing left to take you to a previously viewed directory. Click on the arrow pointing right to move forward through your navigation history.
- To jump to your home location, such as `/home/newuser`, just click on the home icon.
- Click on the circular arrows to refresh your view of the current content area.
- To get help, click on the question mark.
- To stop loading a page or directory in the content area, click on the traffic light.

To open a new Konquerer window, just click on the KDE icon (which looks like a gear) on the far right of the navigation bar.

Drag and Drop to Open, Move, and Copy

Keeping important documents and applications within easy reach is simple with Konquerer. To open a text file, for example, you can drag it from the content area of Konquerer by left-clicking on it and holding your mouse button down while you drag it. If you drop the file in an open text editor, it will open, ready for you to modify its contents.

In the same way, you can drag and drop files from the content area to your desktop or to other folders. When you reach your destination, a pop-up menu will offer you the choice of copying, moving or linking the file. If you select **Link** from the menu, any changes you make to a file in its new location will be reflected in the original location. A link is like a shortcut to the original file.

11.3 Creating Files and Directories

To create an empty file, move to your login directory and use the `touch` command at the shell prompt. To try it, type:

```
touch foo.bar
```

Now, in your login directory, you have got an empty file called `foo.bar`.

Let's also create a new directory, using the `mkdir` command.

Move to your login directory and type:

```
mkdir tigger
```

Now, you have created a directory called `tigger` in your login directory. Your new directory's absolute pathname is `/home/`*`yourlogin`*`/tigger`, and your home directory is the parent of `tigger`.

11.4 A Larger Picture of the Filesystem

Every operating system has a method of storing its files and directories so that it can keep track of additions, modifications, and other changes.

In Linux, every file is stored on the system with a unique name, in directories which can also hold other files and directories (or subdirectories).

You might think of the system as a tree-like structure, in which directories "branch off." Those directories may contain, or be the "parent" of, other directories which may hold files or directories of their own.

There would not be a tree without a root, and the same is true for the Linux filesystem. No matter how far away the branches, everything is connected to the root, which is represented as a single forward slash (`/`).

Red Hat Linux uses the term "root" in several different ways, which might be confusing to new users. There is the root account (the superuser, who has permission to do anything), the root account's login directory (`/root`) and the root directory for the entire filesystem (`/`). When you are speaking to someone and using the term "root," be sure you know which root you are talking about."

What is the FHS?

Other Linux distributions exist, and your Red Hat Linux system is probably compatible with them because of the Filesystem Hierarchy Standard (FHS). The FHS guidelines help to standardize the way system programs and files are stored on all Linux systems.

To read more about the FHS, turn to the chapter on system administration in the *Red Hat Linux Reference Guide*. You can also visit the FHS website: http://www.pathname.com/fhs.

As long as you are logged into your user account (which will help prevent disastrous mistakes), it might be helpful to take a look around.

First, take a look at the root directory. This will help give a larger picture of where things are.

At the shell prompt, type:

```
cd /
```

You will see a prompt that looks like:

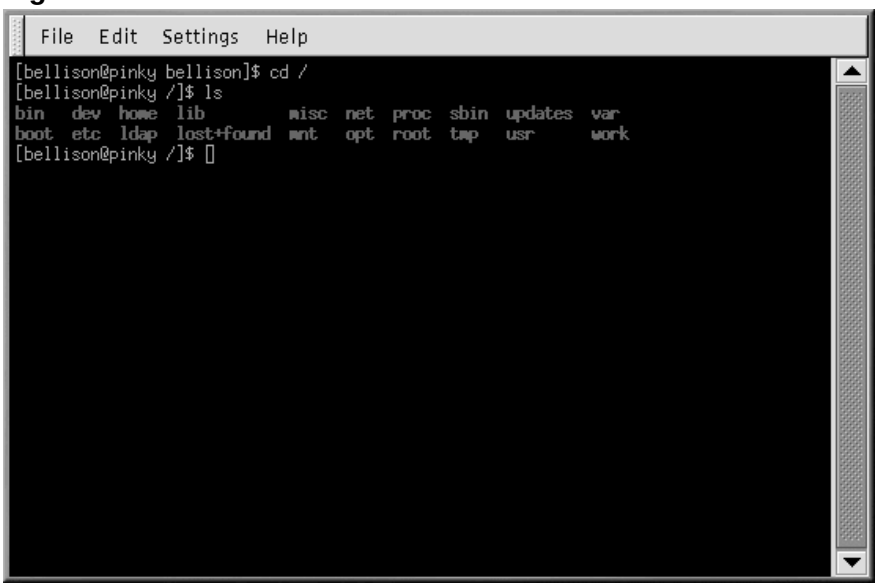
```
[newuser@localhost /]$
```

Now, take a look at which directories "branch off" the root directory by typing:

```
ls
```

This is a little like viewing the tip of an iceberg. The directories you see are the parent directories of other directories, in which there may be other directories, and so on.

Figure 11–7 A View of the Directories from Root



Here are just a few of the directories you are likely to find:

```
etc     lib     sbin
usr     var
```

There are more, but for now, take a look at the `/etc` directory.

```
[newuser@localhost /]$ cd etc
[newuser@localhost /etc]$ ls
```

Here, among other things, you will find configuration files, which are files that help make programs work for your system, store program and system settings, and more.

Among the directories in here, you will see `/etc/X11`, which also contains directories and configuration files for the X Window System.

In the directory `/etc/skel`, you will find skeleton user files, which are used to populate newly created user accounts with standard, commonly used files.

What is a skeleton file? Well, when you were logged in as root, one of the first things you did was create a user account. When that user account was created, files were taken from `/etc/skel` and placed into the new account. The `/etc/skel` files are the standard files needed by every new account.

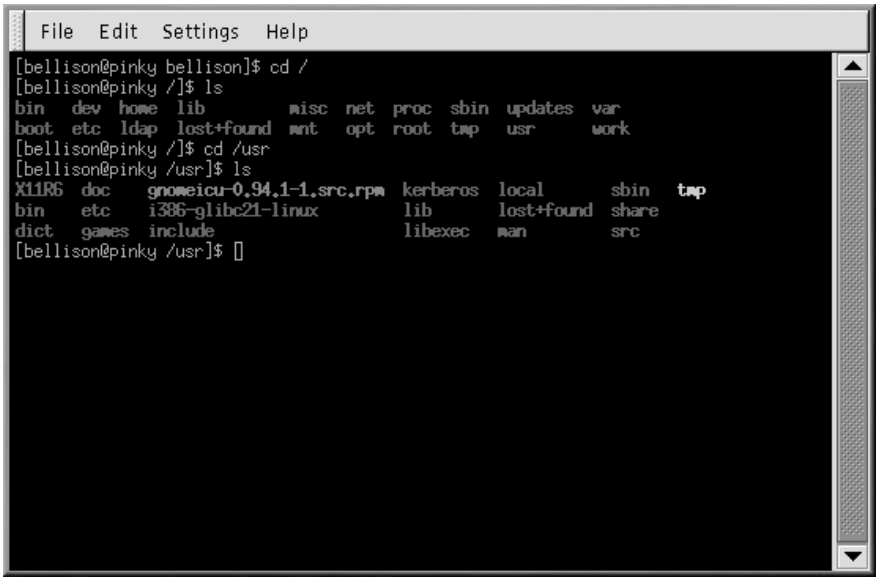
Look around a little in the `/usr` directory. From your current location in `/etc/skel`, type:

```
[newuser@localhost /skel]$ cd /usr
[newuser@localhost /usr]$ ls
```

If you forgot, **`cd /usr`** moves you to the **`/usr`** directory and **`ls`** lists the files in that directory.

In `/usr`, you will see a number of directories that hold some of your system's most important programs and files (see Figure 11–8, *Typing ls in /usr*).

Figure 11–8 Typing ls in /usr



In `/usr/share/man`, you will find the system manual pages; other documentation that is not covered by man pages will be found in `/usr/share/doc` and in `/usr/share/info`.

In `/usr/X11R6`, you will find files related to the X Window System, including configuration and documentation files.

In `/usr/lib` you will find files which are considered libraries for your system. Libraries contain commonly used code that can be shared by many programs.

Red Hat Linux uses the RPM technology of software installation and upgrades. Using RPM, either from the shell prompt or through Gnome-RPM, is a safe and convenient way to upgrade or install software. For more information about using Gnome-RPM, see the Official Red Hat Linux Customization Guide.

Once you become more comfortable with your system, you may want to install software not available in RPM format. To minimize collisions with RPM-managed files, the best place to put such software is in `/usr/local`.

11.5 Identifying and Working with File Types

If you are new to Linux, you may see files with extensions you do not recognize. A file's extension is the last part of a file's name, after the final dot (in the file `sneakers.txt`, "`txt`" is that file's extension).

Here is a brief listing of extensions and their meanings:

11.5.1 Compressed/Archived Files

- `.Z` — a compressed file
- `.tar` — an archive file (short for *tape archive*)
- `.gz` — a compressed file (gzipped)
- `.tgz` — a tarred and gzipped file

For information on creating zip and tar files, see Section 11.6, *File Compression and Archiving with Gzip, Zip, and Tar*

11.5.2 File Formats

- `.txt` — a plain ASCII text file
- `.html/.htm` — an HTML file
- `.ps` — a PostScript file; formatted for printing
- `.au` — an audio file
- `.wav` — an audio file
- `.xpm` — an image file
- `.jpg` — a graphical or image file, such as a photo or artwork
- `.gif` — a graphical or image file
- `.png` — a graphical or image file
- `.pdf` — an electronic image of a document

For information on viewing and creating PDF files, see Section 11.7, *Viewing PDFs*

11.5.3 System Files

- `.rpm` — a Red Hat Package Manager file
- `.conf` — a configuration file
- `.a` — an archive file
- `.lock` — a "lock" file; determines whether a program is in use

11.5.4 Programming and Scripting Files

- `.h` — a C or C++ program language header file
- `.c` — a C program language source code file
- `.cpp` — a C++ program language source code file
- `.o` — a program object file
- `.pl` — a Perl script
- `.tcl` — a TCL script
- `.so` — a library file

But file extensions are not always used, or used consistently. So what happens when a file does not have an extension, or the file does not seem to be what the extension says it is supposed to be?

That's when the **`file`** command can be helpful.

In , you created a file called `saturday`, without an extension. Using the `file` command, you can tell what the file is by typing:

```
file saturday
```

and you will see **`ASCII text`**, or something similar, telling you it is a text file. Any file that is designated a text file should be readable using **`cat`**, **`more`**, or **`less`**.

Read the Man Page

To learn more about **`file`**, read the man page by typing **`man file`**.

For more information on helpful commands for reading files, see Chapter 10, *Shell Prompt Basics*.

11.6 File Compression and Archiving with Gzip, Zip, and Tar

11.6.1 Compressing with Gzip and Zip

Compressed files use less disk space and download faster than large, uncompressed files. You can compress Linux files with the open-source compression tool Gzip or with Zip, which is recognized by most operating systems.

By convention, compressed files are given the extension `.gz`. The command **`Gzip`** creates a compressed file ending with `.gz`; **`Gunzip`** extracts the compressed files and removes the `.gz` file.

To compress a file, at a shell prompt, type the following command:

```
gzip filename.ext
```

The file will be compressed and saved as `filename.ext.gz`.

To expand a compressed file, type:

```
gunzip filename.ext.gz
```

The `filename.ext.gz` is deleted and replaced with `filename.ext`.

If you exchange files with non-Linux users, you may want to use **`zip`** to avoid compatibility problems. Red Hat Linux can easily open zip or gzip files, but non-Linux operating systems may have problems with gzip files.

To compress a file with **`zip`**, type the following:

```
zip -r filename.zip files
```

In this example, *filename* represents the file you are creating and *files* represents the files you want to put in the new file:

To extract the contents of a zip file, type:

```
unzip filename.zip
```

You can zip or gzip multiple files at the same time. List the files with a space between each one.

```
gzip filename.gz file1 file2 file3 /user/work/school
```

The above command will compress `file1`, `file2`, `file3`, and the contents of the `/user/work/school` directory and put them in `filename.gz`.

11.6.2 Archiving with Tar

Tar files place several files or the contents of a directory or directories in one file. This is a good way to create backups and archives. Usually, tar files end with the `.tar` extension.

To create a tar file, type:

```
tar -cvf filename.tar files/directories
```

In this example, `filename.tar` represents the file you are creating and `files/directories` represents the files or directories you want to put in the new file.

You can use absolute or relative pathnames for these files and directories . Separate the names of files and directories with a space.

The following input would create a tar file using absolute pathnames:

```
tar -cvf foo.tar /home/mine/work /home/mine/school
```

The above command would place all the files in the `/work` subdirectory and the /school subdirectory in a new file called `foo.tar` in the current working directory.

The command **`tar -cvf foo.tar file1.txt file2.txt file3.txt`** would place `file1.txt`, `file2.txt` and `file3.txt` in a new file called `foo.tar`.

To list the contents of a tar file, type:

```
tar -tvf foo.tar
```

To extract the contents of a tar file, type:

```
tar -xvf foo.tar
```

This command does not remove the `.tar` file, but it places copies of the `.tar` contents in the current working directory.

The **`tar`** command does not compress files automatically. You can compress tar files with:

```
tar -czvf foo.tar
```

Compressed tar files are conventionally given the extension `.tgz` and are compressed with gzip.

To expand a compressed tar file type:

```
tar -xzvf foo.tgz
```

11.7 Viewing PDFs

A PDF (Portable Document Format) file is an electronic image of a document. Red Hat Linux gives you several options for viewing PDFs.

An open source application called xpdf is included with Red Hat Linux. The xpdf tool is well-developed and easy to use. Right-click inside the screen to see a list of menu options. The toolbar at the bottom has navigational tools that let you move backwards and forwards through the document, as well as standard zoom, print, and find tools. The xpdf man page provides lots of useful information on xpdf options (open a shell prompt and type **`man xpdf`** at the command line).

To view a PDF with xpdf:

1. In GNOME, go to **Main Menu** => **Programs** => **Graphics** => **xpdf** In KDE, go to **Main Menu** => **Graphics** => **PS/PDF Viewer**.
2. Right click in the xpdf screen to display a list of options.
3. Select **Open** to display a list of files.
4. Select the PDF file you want to view and click on **Open**.

PDF Conversion

A quick way to convert a PDF to PostScript is to open a shell prompt and type:

```
pdf2ps input.pdf output.ps
```

`input.pdf` is the file you want to convert and `output.ps` is the new PostScript file you want to create.

Type **`man a2ps`** at a shell prompt to view the man page on the a2ps suite of tools. This gives you information on a variety of conversion options.

Adobe Acrobat Reader is not included in Red Hat Linux, but you can download it free of charge at http://www.adobe.com/.

11.8 Manipulating Files at a Shell Prompt

Files can be manipulated quite easily using one of the graphical managers. They can also be manipulated using a shell prompt, and often faster. This section explains how.

11.8.1 Copying Files

Like so many Linux features, you have a variety of options from which to choose when you want to manipulate files and directories. You can also use wildcards when you are copying, moving, or deleting files and directories.

To copy a file, type the following command:

```
cp <source> <destination>
```

So, to copy the file `sneakers.txt` to the directory `tigger` in your login directory, move to your login directory and type:

```
cp sneakers.txt tigger
```

Notice that you also used relative pathnames to copy the file. You can use both relative and absolute pathnames with `cp`. Our login directory is the parent of the directory `tigger`; `tigger` is one directory down from our login directory.

Read the **`cp`** man page (**`man cp`**) for a full list of the options available with **`cp`**. Among the options you can use with **`cp`** are the following:

- `-i` — interactive. Prompts you to confirm if the file is going to overwrite a file in your destination. This is a handy option because it can help prevent you from making mistakes.
- `-r` — recursive. Rather than just copying all the files and directories, this will copy the whole directory tree, subdirectories and all.
- `-v` — verbose. shows the progress of the files being copied.

If you use **`cp`** with no options, you will not see much when the command is executed. Using an option, such as `-i`, can make the process a little more useful. If you want to copy a file to a location that already has a file with the same name, you will be asked first if you really want to overwrite (or replace) the file that is already there.

Now that you have the file `sneakers.txt` in the `tigger` directory, use **`cp -i`** to copy the file again to the same location.

```
[newuser@localhost newuser]$
cp -i sneakers.txt tigger
cp: overwrite 'tigger/sneakers.txt'?
```

To overwrite the file that is already there, press [Y] and then [Enter]. If you do not want to overwrite the file, press [N] and [Enter].

11.8.2 Moving Files

To move files, use the **mv** command. It is similar to the **cp** command, except that with **mv** the file is physically moved from one place to another, instead of being duplicated, as with **cp**. For more about **mv**, see the **mv** man page (type **man mv**).

Common options for **mv** include the following:

- `-i` — interactive. This will prompt you if the file you have selected will overwrite an existing file in the destination directory. This is a good option, because like the **-i** option for **cp**, you will be given the chance to make sure you want to replace an existing file.
- `-f` — force. Overrides the interactive mode and moves without prompting. Unless you know what you are doing, this option is dangerous; be very careful about using it until you become more comfortable with your system.
- `-v` — verbose. Shows a list of the files being moved.

If you want to move a file out of your home directory and into another directory, type the following (you will need to be in your home directory):

```
mv sneakers.txt tigger
```

Alternatively, the same command using absolute pathnames looks like **mv sneakers.txt /home/newuser /home/newuser/tigger**.

11.8.3 Renaming Files

Actually, we have already covered half of renaming, because when you copy or move files, you can also rename.

To copy the file `sneakers.txt` from your login directory to the `tigger` subdirectory, just type:

```
cp sneakers.txt tigger
```

To copy and rename that file from `sneakers.txt` to `piglet.txt`, type:

```
cp sneakers.txt tigger/piglet.txt
```

To *move* and rename the file, just substitute **mv** for **cp** in the above example.

If you **cd** to `tigger` and then type **ls**, you will see the file `piglet.txt`.

If you just want to rename the file and keep its location, just **mv** in your current directory:

```
mv sneakers.txt piglet.txt
```

11.8.4 Deleting Files and Directories

You learned about creating files with the **touch** command and by using redirection in Chapter 10, *Shell Prompt Basics* . And you created the directory `tigger` using **mkdir**.

Now you need to learn how to delete files and directories. Deleting files and directories with the **rm** command is a straightforward process. See the `rm` man page for more information. Options for removing files and directories include:

- `-i` — interactive. Prompts you to confirm the deletion. This option can stop you from deleting a file by mistake.
- `-f` — force. Overrides interactive mode and removes the file(s) without prompting. This might not be a good idea, unless you know exactly what you are doing.
- `-v` — verbose. Shows a list of files as they are being removed.
- `-r` — recursive. Will delete a directory and all (if any) files and the subdirectories it contains.

To delete the file `piglet.txt` from the `tigger` directory with the **rm** command:

```
rm piglet.txt
```

What happens if you did not really want to get rid of it? Too late! That is where the **-i** (interactive) option is helpful, because it gives you a second chance to think about whether or not you really want to delete the file.

```
[newuser@localhost newuser]$
rm -i piglet.txt
rm: remove 'piglet.txt'?
```

You can also delete files using the wildcard `*`, but be careful, because you can easily delete files you did not intend to throw away.

To remove a file using a wildcard, you would type:

```
rm pig*
```

The above command will remove all files in the directory which start with the letters "pig."

You can also remove more than one file using one command:

```
rm piglet.txt sneakers.txt
```

Options for removing files and directories include the following:

- `-i` — interactive. Prompts you to confirm the deletion. This option can stop you from deleting a file by mistake. .

- `-f` — force. Overrides interactive mode and removes the file(s) without prompting. This might not be a good idea, unless you know exactly what you are doing.
- `-v` — verbose. Shows a list of files as they are being removed.
- `-r` — recursive. Will delete a directory and all (if any) files and the subdirectories it contains.

You can use **`rmdir`** to remove a directory (**`rmdir foo`**, for example), but only if the directory is empty. To remove directories with **`rm`**, you must specify the **`-r`** option.

For example, if you want to recursively remove the directory `tigger` you would type:

```
rm -r tigger
```

If you want to combine options, such as forcing a recursive deletion, you can type:

```
rm -rf tigger
```

The **`rm`** command can delete your entire filesystem! If you are logged in as root and you type the simple command **`rm -rf /`**, you are in trouble; this command will recursively remove everything on your system.

A safer alternative to using **`rm`** for removing directories is the **`rmdir`** command. With this command, you will not be allowed to use recursive deletions, so a directory which has files in it will not be deleted.

Read the **`rmdir`** man page (**`man rmdir`**) to find out more about this command.

12 Updating and Adding Packages to Red Hat Linux

12.1 Introduction to RHN

You can update your Red Hat Linux system at anytime, adding new applications or enhancements to packages you already have installed. Installing new software files, or RPMs, is simple. This chapter explains three ways you can update your system: by using Red Hat Network, by going to http://www.redhat.com/apps/support/updates.html and checking the errata list, and by getting packages from the installation CD that you did not initially install.

Red Hat Network gives you two ways to update your system: the Web interface, known as Software Manager and Red Hat Update Agent. Software Manager is an online tool that lets you manage up to five systems at once. Red Hat Update Agent is a standalone tool that manages one system only.

Updating from the errata list involves going to the Red Hat website, looking through the latest errata list, and downloading and installing the errata you want. Installing additional packages from the installation CD involves selection and installation from the GUI that appears on your desktop after you insert the CD in your CD-ROM drive.

12.2 Red Hat Network

This section acts as a brief introduction to Red Hat Network (version 2.7.0 of the Red Hat Update Agent and version 1.5.0 of the RHNRC;). Depending on which version of Red Hat Linux you have installed, the Red Hat Network Registration Client and the Red Hat Update Agent might be different than the ones described here. All versions of the *Red Hat Network User Reference Guide* are available at http://www.redhat.com/support/manuals. Once you use Red Hat Network to update these applications, you can use the latest version of the manual.

Red Hat Network is an Internet solution for managing a Red Hat Linux system or a network of Red Hat Linux systems. All security patches, bug fixes, and software package enhancements can be downloaded directly from Red Hat Linux using the Red Hat Update Agent, a standalone application, or through a Web browser, at http://rhn.redhat.com. The features available to you are determined by your subscription status.

Both the Red Hat Network Web interface, referred to as Software Manager, and the Red Hat Update Agent allow you to view all security alerts, bug fixes, and package enhancements included in the Red Hat errata list. Only packages relevant to your system are shown, and you can configure Red Hat Network to send you email notifications of new and updated packages.

The Red Hat Network Software Manager runs inside an SSL-enabled Web browser, such as Mozilla, and does not have software dependencies. It has more features than Red Hat Update Agent, including the ability to view all of your systems simultaneously, install packages, and monitor the status of pending updates.

Red Hat Network provides significant benefits to your network security and quality assurance. All transactions between you and Red Hat Network are encrypted, and all RPM packages are signed with Red Hat Linux's GNU Privacy Guard (GPG) signature to ensure authenticity. See the *Official Red Hat Linux Customization Guide* for more on the GPG.

Before you begin using Red Hat Network, you need to create a user name, password, and system profile. The Red Hat Network Registration Client will take you through this process.

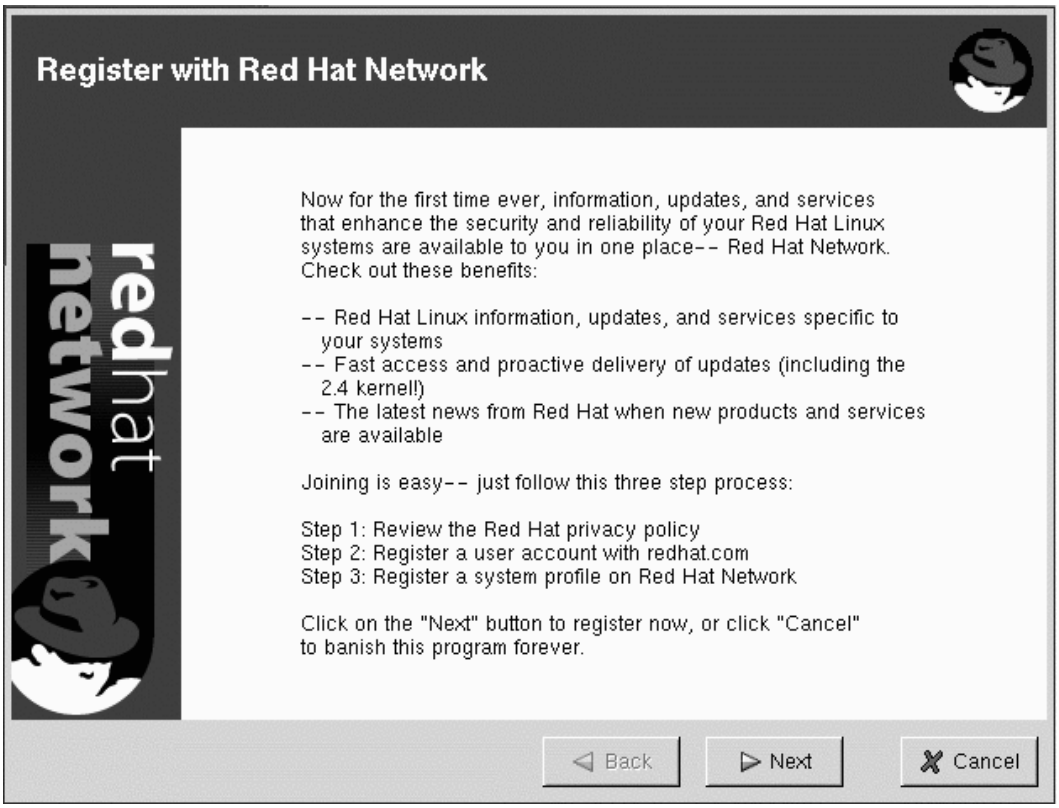
12.2.1 Red Hat Network Registration Client

You must be logged in as root (or at least know the root password) to register a system with Red Hat Network. If you start the Red Hat Network Registration Client as a standard user, you will be prompted to enter the root password before you can proceed.

To start the Red Hat Network Registration Client, use one of the following methods:

1. From the GNOME desktop, go to **Main Menu** => **Programs** => **System** => **Red Hat Network**.
2. From the KDE desktop, go to **Main Menu** => **System** => **Red Hat Network**.
3. At a shell prompt, type **`rhn_register`**.

Figure 12–1 Red Hat Network Registration Client



The registration client is very self-explanatory. Follow the instructions on the screens to register your system with the Red Hat Network.

CAUTION

You must use Python 1.5.2-24 or later with Secure Sockets Layer (SSL) support. If not, the information you transfer will not be encrypted. To determine the version of Python on your system, use the command `rpm -q python`. It is strongly recommended you use Python 1.5.2-24 or later.

12.3 Red Hat Update Agent

If you choose to use the Red Hat Update Agent (a standalone tool for managing one system), you should configure the settings first. This can be done using the Red Hat Update Agent Configuration Tool.

You must be root to run the Red Hat Update Agent Configuration Tool. If you try as a standard user, you will be prompted to enter the root password before you can continue.

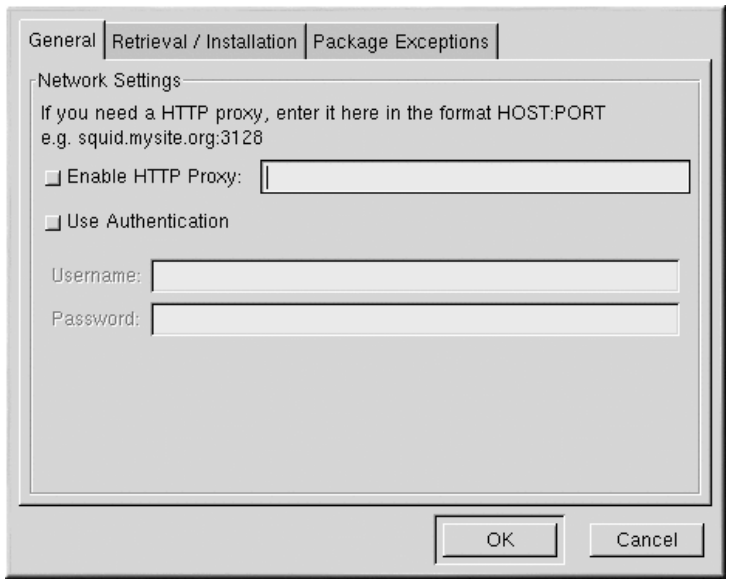
Follow the steps for configuring Red Hat Update Agent in Section 12.3.1, *Configuring Red Hat Update Agent* before continuing to Section 12.3.2, *Starting Red Hat Update Agent*.

12.3.1 Configuring Red Hat Update Agent

The Red Hat Update Agent Configuration Tool can be started using one of the following methods:

1. From the GNOME desktop, go to **Main Menu** => **Programs** => **System** => **Update Agent Configuration**.
2. From the KDE desktop, go to **Main Menu** => **Update Agent Configuration**.
3. At a shell prompt, type **`up2date-config`**.

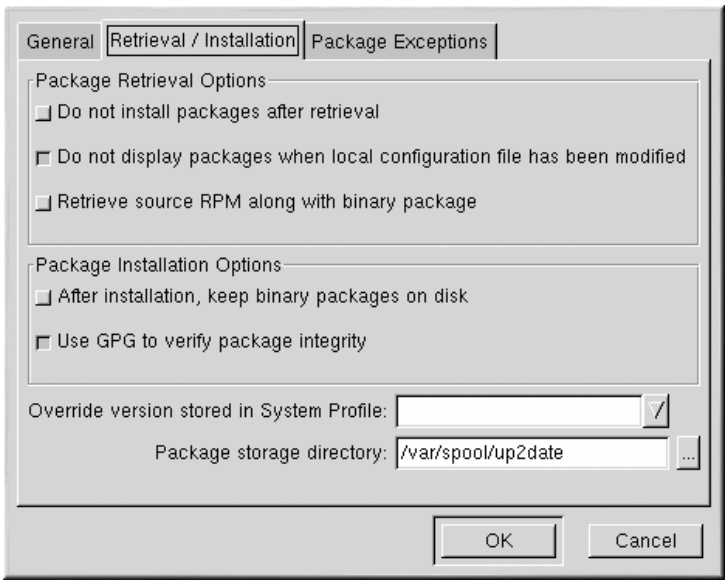
Figure 12–2 Red Hat Network Configuration Tool



Configure your network settings on the **General** tab (see Figure 12–2, *Red Hat Network Configuration Tool*). Contact your IT department to find out the proxy information you need, if any, to enter in the field on this tab.

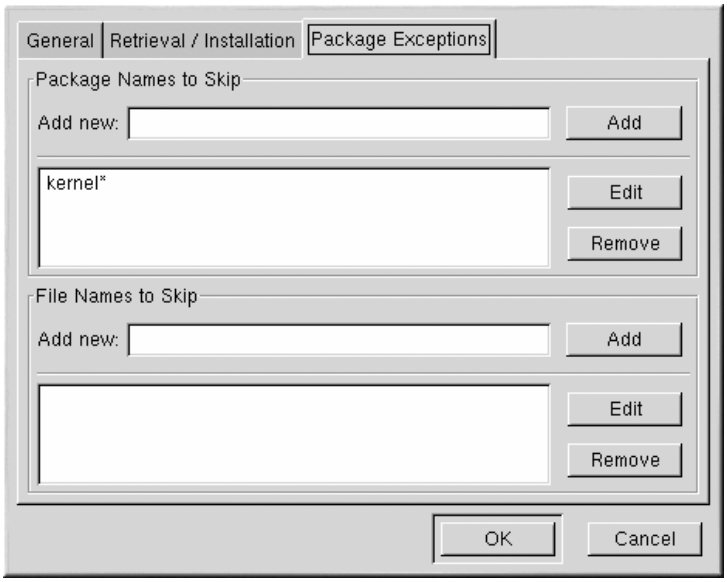
On the **Retrieval/Installation** tab (see Figure 12–3, *Red Hat Network Configuration Tool Retrieval/Installation Tab*), you set whether or not Red Hat Update Agent automatically installs updates once they are retrieved, whether you are informed of all available updates or just those pertinent to your system, and more.

Figure 12–3 Red Hat Network Configuration Tool Retrieval/Installation Tab



On the **Package Exceptions** tab (see Figure 12–4, *Red Hat Network Configuration Tool Package Exceptions Tab*), you can tell Red Hat Update Agent not to inform you of certain types of files or packages. Use the **Add**, **Edit**, and **Remove** buttons to manage the lists of files and packages to skip.

Figure 12–4 Red Hat Network Configuration Tool Package Exceptions Tab



For more detailed information, see the *Red Hat Network User Reference Guide* at http:///www.redhat.com/support/manuals/RHNetwork/ref-guide/.

After configuring the settings, you can use the Red Hat Update Agent to retrieve the latest software packages from Red Hat Linux.

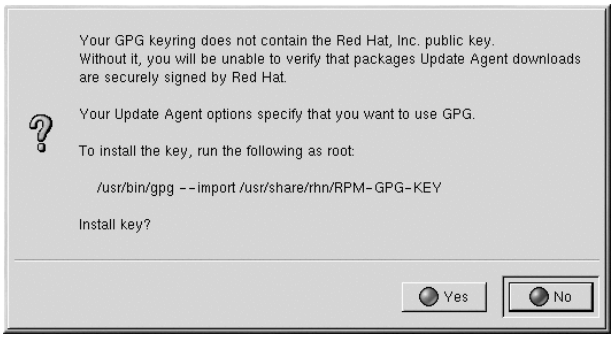
12.3.2 Starting Red Hat Update Agent

You must be root to run the Red Hat Update Agent. If you start the Red Hat Update Agent as a regular user, you will be prompted to enter the root password before you can proceed. The Red Hat Update Agent can be started using one of the following methods:

1. From the GNOME desktop, go to **Main Menu** => **Programs** => **System** => **Update Agent**.
2. From the KDE desktop, go to **Main Menu** => **Red Hat** => **Update Agent**.
3. At a shell prompt, type **`up2date`**.

The first time you run the Red Hat Update Agent, the dialog window in Figure 12–5, *Install GPG Key* will prompt you to install the Red Hat GPG key. This is used to verify the RPM packages you download for security purposes. Click **Yes** to install the key, and you will not see this message again.

Figure 12–5 Install GPG Key



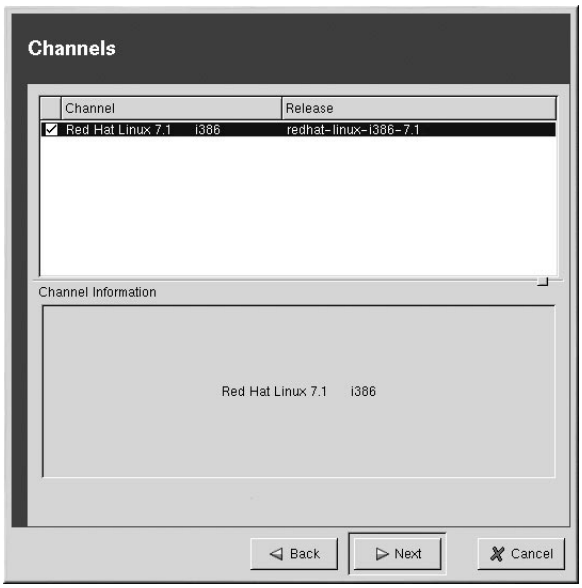
After installing the Red Hat GPG key, the screen in Figure 12–6, *Welcome Screen* will appear. It appears every time you start the Red Hat Update Agent. Click **Next** to continue.

Figure 12–6 Welcome Screen

12.3.3 Choosing a Channel

The first step is to select the channel(s) from which you want the updated packages to be retrieved. Select one or more channels and click **Next**. Refer to the *Red Hat Network User Reference Guide* for more information on channels and how channels are used to determine which packages to install.

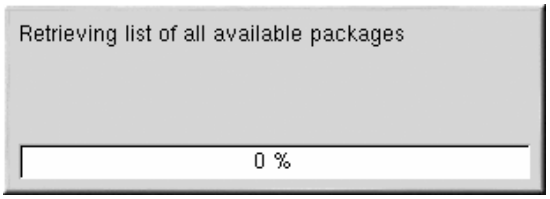
Figure 12–7 Channels



12.3.4 Choosing Packages to Update

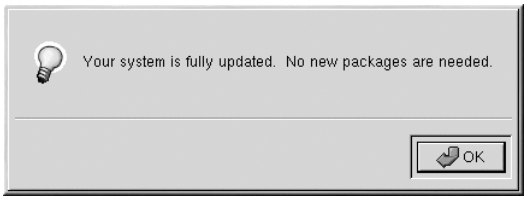
After clicking **Next** on the Welcome Screen, the dialog box in Figure 12–8, *Retrieve Update Information* will appear. This means that a connection to Red Hat Network is being established and that your customized list of updates is being retrieved. This might take some time, depending on the speed of your connection and the number of packages you have installed.

Figure 12–8 Retrieve Update Information



While you see this dialog box, Red Hat Update Agent uses your unique Digital Certificate (`/etc/sysconfig/rhn/systemid`) to determine if there are any updated packages available for your system. If there are no updated packages available for your system, the dialog box in Figure 12–9, *No new packages needed* appears. Click **Ok** to exit Red Hat Update Agent.

Figure 12–9 No new packages needed



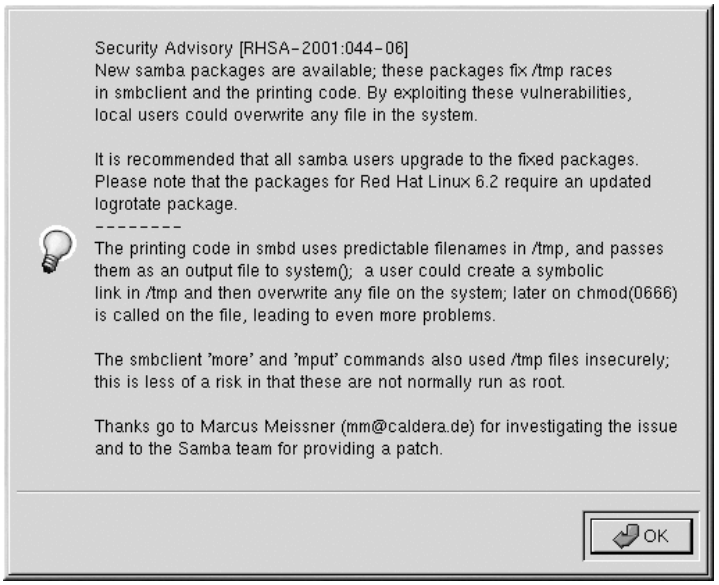
If your system is not up-to-date, your customized list of available updated packages is displayed as shown in Figure 12–10, *List of Available Updates*.

Figure 12–10 List of Available Updates

By default, no packages are selected for download. If you highlight each package, a brief package description is displayed in the **Package Information** section at the bottom of the screen. To select the package for download (and installation if you chose that option), click the checkbox. You can select all the packages listed by clicking the button next to **Select all packages**.

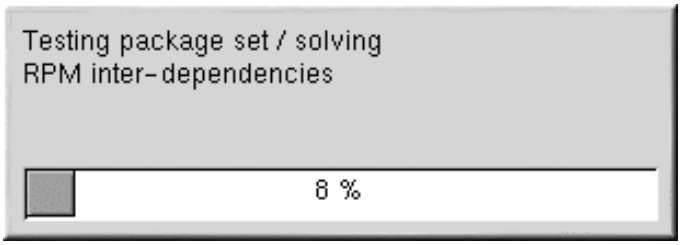
If you want to view the advisory for the RPM Update, click the **View Advisory** button. This will display what type of Errata Alert it is and what problems it addresses as shown in Figure 12–11, *View Advisory*. Click **Next** when you are finished selecting packages.

Figure 12–11 View Advisory



After choosing which packages to update, the Red Hat Update Agent tests for RPM dependencies and prompt you if you have chosen to omit packages that are required for software updates that you did choose. The dialog box in Figure 12–12, *Testing Packages* is shown while it is testing. This process might take some time depending upon how many packages are are updating.

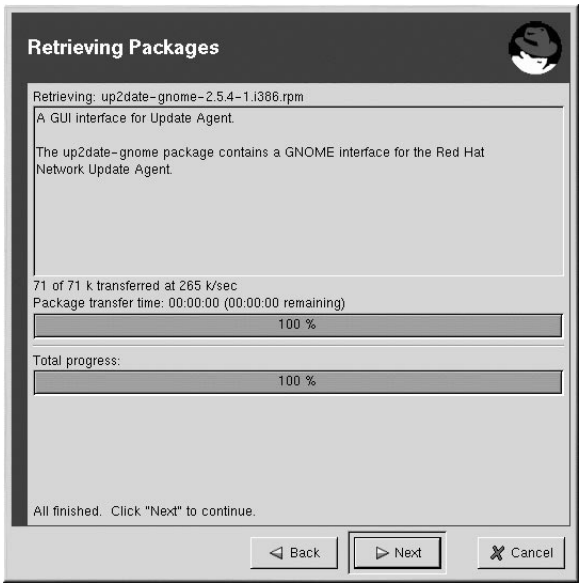
Figure 12–12 Testing Packages



Red Hat Update Agent shows the progress of each package retrieval as shown in Figure 12–13, *Retrieval Finished*. When they have all been retrieved, the message **All finished** is displayed at the bottom of the screen. Click **Next** to continue. If you did not choose to install the packages automatically, skip the next section and go to Section 12.4.6, *Installing Downloaded Packages*. If you chose

to have packages install automatically, a screen appears showing you the progress of the package installation.

Figure 12–13 Retrieval Finished



12.4 Red Hat Network Software Manager

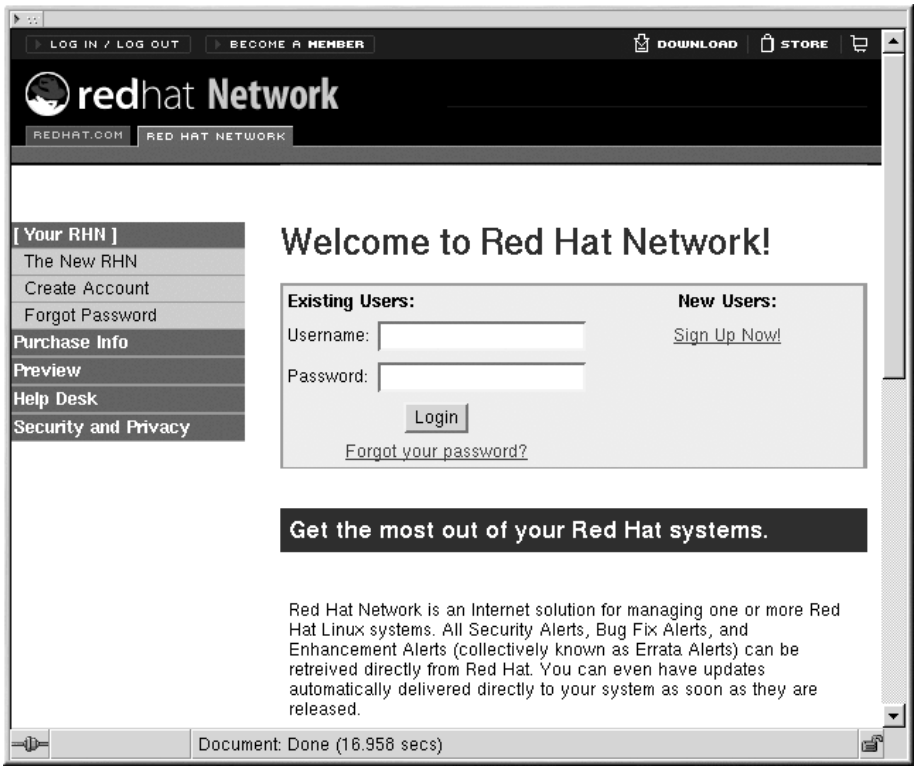
You can use the Red Hat Network Web application, referred to as Software manager, to manage one or more Red Hat Linux systems simultaneously. The Red Hat Network Software Manager runs in a Web browser, unlike the standalone Red Hat Update Agent.

With the Red Hat Network Software Manager, you can download additional packages, system enhancements and bug fixes, and the latest security tools. You can upgrade some or all outdated packages, manage your hardware profile, and more.

12.4.1 Logging into the Red Hat Network Software Manager

In a Web browser, go to http://rhn.redhat.com.

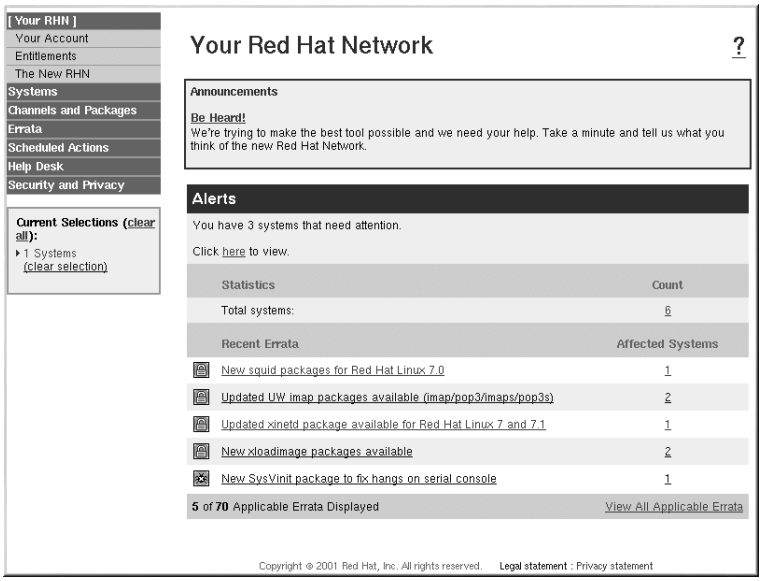
Figure 12–14 Red Hat Network Login



12.4.2 Your RHN

After logging into the Web interface of Red Hat Network, the first page you see is the main page, or the **Your Red Hat Network** page. This page displays important information about your systems including Recent Errata Alerts for your systems under the title **Recent Errata**. To view a complete list of applicable Errata Alerts for a system, click **View All Applicable Errata** in the bottom right-hand corner.

Figure 12–15 Your Red Hat Network



The first line of the **Your Red Hat Network** page shows how many systems need attention and provides a link to quickly view those systems. Clicking the **here** link displays the **System List** page that lists the systems that need attention. Refer to the *Red Hat Network User Reference Guide* for information on using this page.

In the **Statistics** section, the number of total systems refers to the number of total systems that you have registered.

You can return to this page by click **Your RHN** on the left navigation bar.

12.4.3 Your Account

The **Your Account** page under the **Your RHN** category allows you to modify your personal information as well as set some RHN preferences. To modify any information on the **Details** tab or the **Addresses** tab, change the information and click the **Update** button on the page.

If you want to change your Red Hat Network password (the one used to log into Software Manager and redhat.com) click the **Details** tab on the **Your Account** page and replace the asterisks in the **Password** and **Password Confirmation** text fields with your new password. You will not see your password as you type it for security reasons. Click **Update** to change your password.

The email address on the **Details** tab is the one Red Hat Network sends email notification to if you have selected to receive Errata Alert email for your systems under the **Preferences** tab. To change your preferred email address, replace in on the **Details** page and click **Update**.

The **Preferences** tab allows you to configure two Red Hat Network options:

- Email notifications — Determine whether you want to receive email every time an Errata Alert is applicable to one or more systems in your RHN account.
- Don't clear selections — Determine whether you want to remove selections the **Current Selections** list after an action has been completed on the selection. For example, if you select five packages and apply Errata Updates to them, the five packages will be removed from the selection list after the action is confirmed and is added to the scheduled actions list. If you select **Don't clear selection set when completing an action in a wizard**, the packages would not be removed from the selection list until you remove them.

12.4.4 Entitlements

To use all of the features in Software Manager, your systems must be **entitled** — they must be subscribed to the Software Manager subscription service. Every user receives one free entitlement slot.

The **Entitlement Manager** page displays the number of total, used, and available entitlement slots for your account. To buy more entitlement slots, enter the number to purchase and click the **Buy Now!** button.

This page also allows you to change the entitlement of a system. The systems that are currently entitled have a check under the **Entitled** column. To entitle a system, check its entitlement box. To unentitle a system, uncheck its entitlement box. Click the **Update Entitlements** to apply the changes.

12.4.5 The New RHN

The New RHN page explains the differences between the previous Software Manager interface and the current interface.

12.4.6 Installing Downloaded Packages

Once you download packages, whether through the Red Hat Network Web interface or the Red Hat Update Agent, you have to install the packages (unless you configured Red Hat Network to automatically install updates). You can update at a shell prompt or with a GUI from your GNOME or KDE desktop. Updating at a shell prompt is the easier method.

To update downloaded packages at a shell prompt:

1. At a shell prompt, type **`cd /var/spool/up2date`**.
2. Type **`rpm -Fvh *.rpm`**.

3. Update your system profile (see Section 12.5, *Synchronizing Your System Profile*).

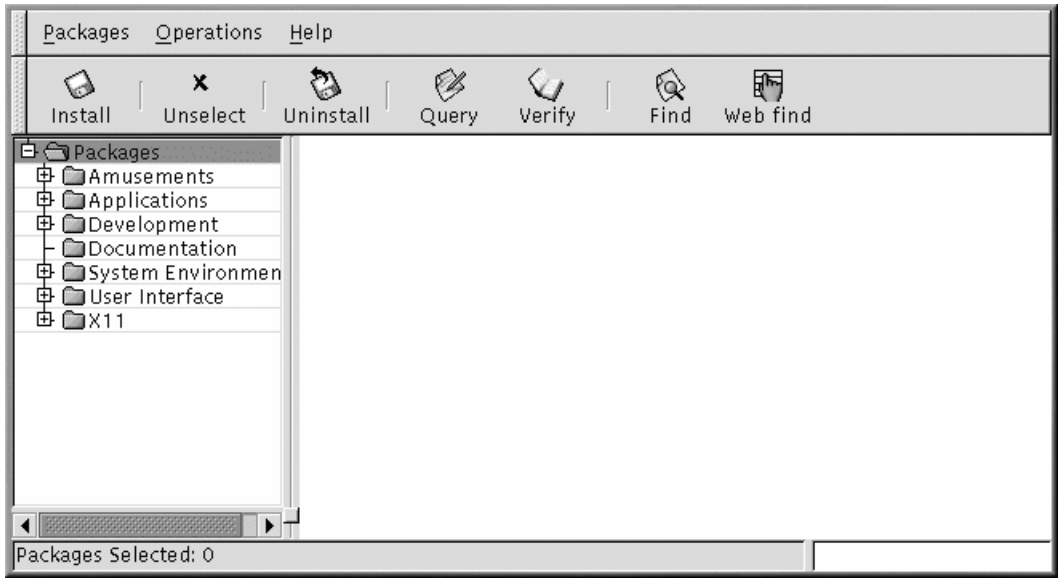
That's it. Downloaded packages are sent to the `/var/spool/up2date` directory. The **`cd /var/spool/up2date`** command puts you in that directory. The **`rpm -Fvh *.rpm`** command tells your system everything it needs to know to update all downloaded packages residing in that directory.

If you download RPMs for packages you do not have installed on your system, use **`-U`** instead of **`-F`**. This will install the package on your system, rather than update an existing package.

To update using a GUI:

1. Open Gnome-RPM (From a GNOME desktop, go to **Main Menu** => **Programs** => **System** => **GnoRPM**; In KDE, go to **Main Menu** => **GNOME Programs** => **System** => **GnoRPM**. In either desktop, you can use the run tool (In GNOME, **Main Menu** => **Run...**. In KDE, **Main Menu** => **Run command**) and type **`gnorpm`**.

Figure 12–16 Gnome-RPM



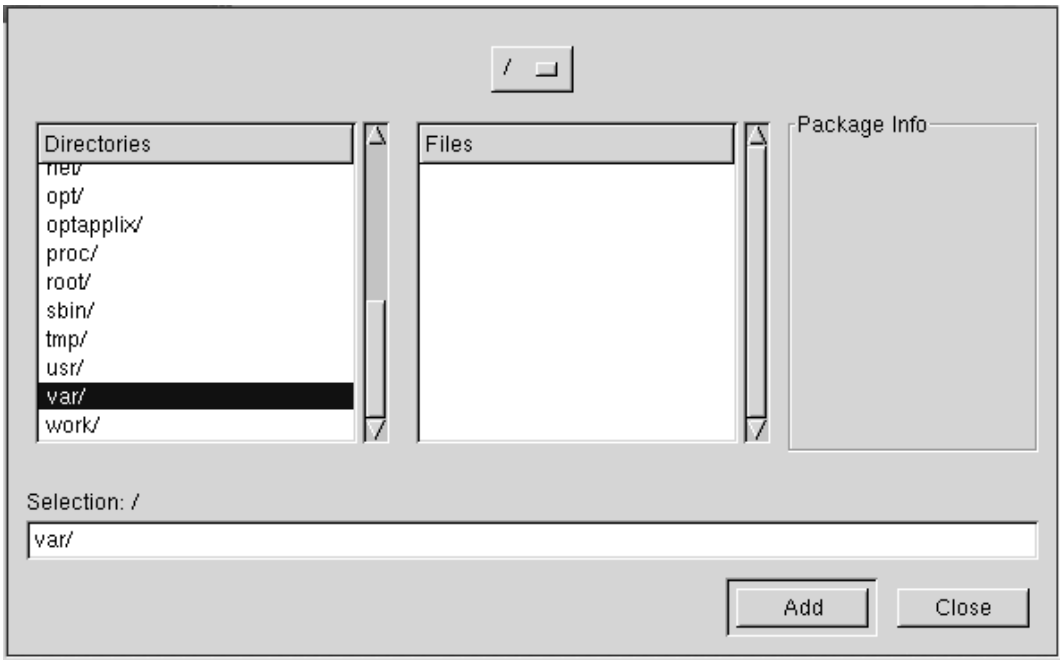
1. Click on **Install**.

2. In the **Install** dialog box, click on **Add**.

3. In the **Add Packages** dialog box, click on the pulldown menu at the top of the page and select **/** (this indicates your home directory).

4. Under **Directories**, scroll down and double-click on **/var**. This will display a new list of directories in the **Directories** box.

Figure 12–17 Add Package Dialog



1. Under **Directories** again, scroll down and double-click on **/spool**. This, too, will display a new list of directories in the **Directories** box.

2. Once more, under **Directories**, scroll down and double-click on **/up2date**.

3. Go back to the **Install** dialog box, highlight the packages you want, and click on **Upgrade** to upgrade the packages on your system.

12.5 Synchronizing Your System Profile

If you configured the Red Hat Update Agent to install the latest packages automatically, then your System Profile stored by Red Hat Network will be updated automatically also. However, if you only download the latest RPM packages using the Red Hat Update Agent or through the Web interface and upgrade or install the packages yourself, your System Profile will not be updated automatically. If you remove packages, you need to update your RPM package list in your System Profile.

To synchronize the RPM package list on your local system and on Red Hat Network run the command

```
up2date -p
```

After running this command, your System Profile on Red Hat Network will reflect the latest software versions installed on your system.

12.6 Updating With Errata

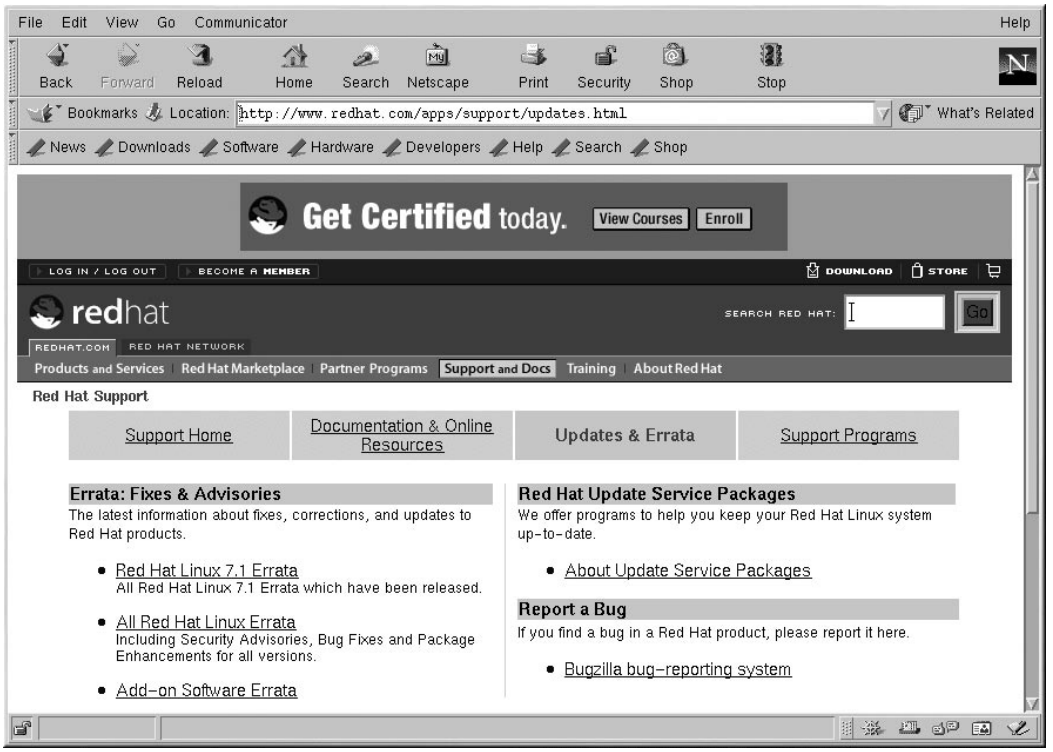
Red Hat Linux errata are package updates, bug fixes, and security patches for Red Hat Linux. They have been tested and approved by Red Hat, Inc. and can be found at http://www.redhat.com/errata/. Red Hat Network updates come from this list, but you can go straight to the errata list and get them yourself.

This updating process is recommended for more experienced Red Hat Linux users.

12.6.1 Locating Errata

The website http://www.redhat.com/errata/ lists all available errata for Red Hat Linux. You can navigate through this site and click on the links to see what types of RPMs are available. Red Hat tests and approves the RPMs posted on this site. RPMs downloaded from other sites are not guaranteed.

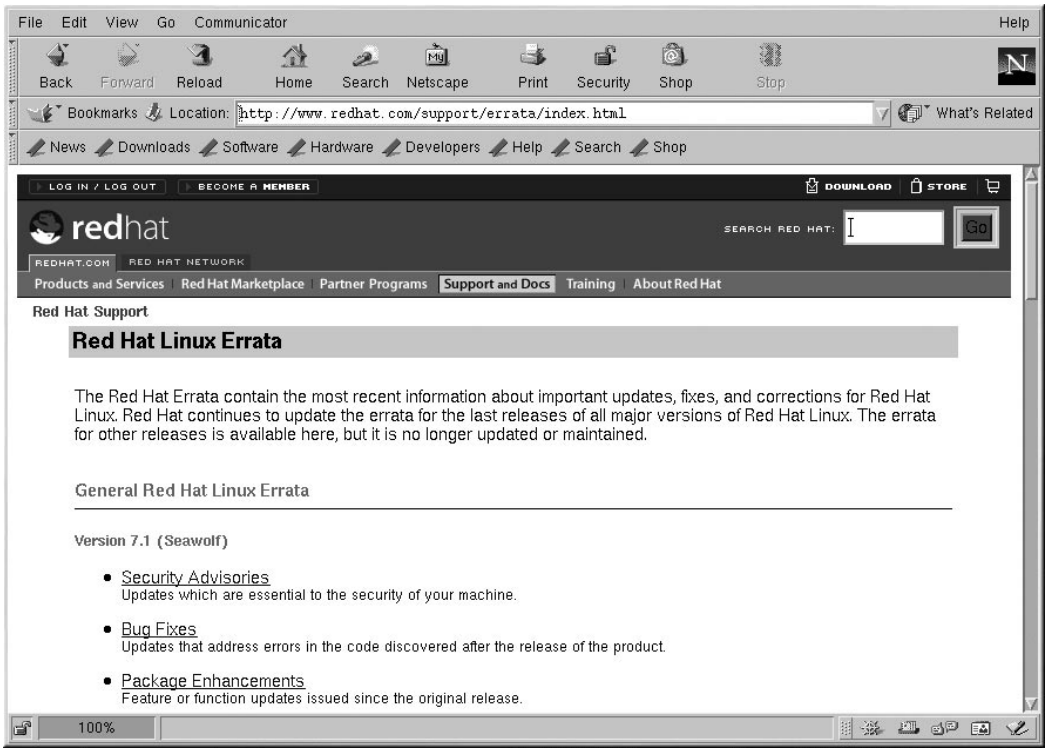
Figure 12–18 Red Hat Errata List



12.6.2 Downloading and Installing Errata

On the errata website, look in the **Errata: Fixes & Advisories** column and select the product for which you want to view available errata. A corresponding list of available errata appears (Figure 12–19, *Available RPMs*).

Figure 12–19 Available RPMs



To download errata:

1. Click on the package you want to download. It is recommended that you read all of the information on the following screen before continuing. It provides a synopsis of the errata, steps to follow to download and install the errata, and more.
2. Scroll down to **RPMs Required** and click on the FTP address containing the file you want.

Clicking on an FTP address will open a dialog box where you determine where the download will be saved. By default, this dialog will display the last directory you were using, or if none, it will default to your home directory. We recommend creating a subdirectory for downloads.

You might have to download the packages from a Red Hat Linux FTP mirror site, if the Red Hat FTP site you select from the errata page is busy. Visit http://www.redhat.com/mirrors.html to select a Red Hat Linux mirror site.

1. Determine where you want your RPM to be stored and click on **OK**. The RPM you selected will be downloaded automatically.

2. You can then follow the instructions under **Solution** on the errata page to upgrade RPMs, or upgrade using the RPM application. See the *Official Red Hat Linux Customization Guide* for more information on RPM.

12.7 Installing RPMs From the Installation CDs

Place one of the installation CDs in your CD-ROM drive. Inserting a CD in the CD-ROM drive should automatically open the file manager. If the file manager does not open automatically after a minute or so, right-click on the CD-ROM icon on your desktop and select Mount Device.

In the file manager screen, click on /cdrom/RedHat/RPMS. Scroll through the files on the right and look for the packages you want. Package descriptions are available online at http://docs.redhat.com

Now, open a terminal and login as root by typing:

```
cd su
```

Next, you will use the **rpm** command, as shown below. The "ivh" option that follows the command, basically, installs everything and replaces any duplicate files that might, for some reason, be on your system already. In this example, the documentation files, which all begin with "rhl", would be installed. The string "rhl-*.rpm" tells your system to install all files that begin with "rhl" and end in ".rpm" (* is a wildcard and keeps you from having to type out each of the long file names manually). In place of "rhl" you should put whatever comes before the first hyphen in the name of the package you want to install.

```
rpm -ivh rhl-*.rpm
```

Press [Enter]. Type **exit** at the command line and press [Enter] again. This takes you out of the root login and back to your user account.

And that is it. The package is installed. It should now appear in the appropriate place in the panel's main menu. You can also open the Run tool (available on the main menu) and type the name of the program in the dialog box that appears to launch an application.

Part III Q & A

13 Frequently Asked Questions

13.1 Using a Diskette

13.1.1 Q: Working with Diskettes

How do I use a diskette with Red Hat Linux?

13.1.2 A. Using Mtools

If you have an MS-DOS formatted diskette, you can access the files on it using the mtools utility.

Mtools offers a wide range of options for working with diskettes, including copying, moving, deleting, and formatting. To read more about mtools, type `man mtools` at a shell prompt.

For example, to copy a file from an MS-DOS formatted diskette (such as one from a Windows95 system), use the following syntax at a shell prompt:

```
mcopy a:thisfile.txt
thisfile.txt
```

The file will then be copied from the diskette drive (drive A:) to the directory you were in when you issued the **`mcopy`** command. If you're in your /home directory, you'll find `thisfile.txt` there.

If you want to view the contents of an MS-DOS formatted diskette, type **`mdir`** at the prompt. By default, you'll be shown the contents of the diskette in the A: drive.

To change to a subdirectory on the diskette, type

```
mcd a:subdir
```

In the above command, `subdir` is the name of the subdirectory you want to access.

If you have a diskette that you want to format and use with your Red Hat Linux system, use the **ext2 filesystem**. For more on ext2, read on…

13.1.3 A: The ext2 Filesystem

To use a diskette specifically with Red Hat Linux, you'll need to create a Second Extended (ext2) filesystem on the disk. The ext2 filesystem is the filesystem used by Red Hat Linux, and is the most commonly used Linux filesystem type.

Once you've created an ext2 filesystem on the diskette, you can manipulate its contents in the same ways that you manipulate directories and files on your hard drive.

13.1.4 Creating an ext2 Filesystem on a Diskette

The **mke2fs** command is used to create a Linux ext2 filesystem on a device, which may be a disk partition or a diskette. Put your diskette into the drive and issue the following command at a shell prompt:

```
$ /sbin/mke2fs /dev/fd0
```

On Linux systems, /dev/fd0 refers to the first diskette drive, usually your A: drive.

The mke2fs utility has a number of options. The **-c** option makes the **mke2fs** command check the device for bad blocks before creating the filesystem. The other options are covered in the mke2fs man page.

Once you've created an ext2 filesystem on the diskette, it is ready to be used with your Red Hat Linux system.

If You're Using a GUI

Want another quick way to format a floppy for either ext2 or MS-DOS? If you are using KDE, try KDE Floppy Formatter, an easy way to format diskettes. To start the utility, go to **Main Menu K** => **Utilities** => **KFloppy**. In GNOME, go to **Main Menu** => **Programs** => **Utilities** => **gfloppy** to start the gfloppy.

13.2 Putting Linux Files on a Windows Disk

13.2.1 Q: Putting Linux Files on a Windows Disk

How do I copy files from my Linux machine to a DOS formatted floppy disk so that my Windows machine can read it?

13.2.2 A: Formatting and Mounting Disks for Windows Use

You should format your disk in Windows, then mount it in Linux like this:

Put the floppy in the drive, right-click on the floppy icon, and select **Mount Device**, or open a terminal and type:

```
mount /mnt/floppy
```

To copy files, right-click on the floppy icon and select **Copy**, or use the command:

```
cp [filename] /mnt/floppy
```

To unmount the floppy so you can eject it, right-click on the floppy icon and select **Eject Device**, or open a terminal and type:

```
umount /mnt/floppy
```

13.3 Localhost Login and Password

13.3.1 Q: Localhost Login and Password

I have installed Red Hat Linux. After rebooting, I get a message telling me it needs a localhost login and password. What are these?

13.3.2 A: User or root login information

Unless you specified a host name for your computer, or get that information from a network, your Linux install will call your machine localhost.localdomain by default.

When you get to that initial prompt, it is asking you to log in to your system. If you created a user account during install, you can log in using that name and password. If you didn't create a user account when installing then you can log in as the super user, also known as root. The root password is the system password you assigned during install.

It is highly recommended that you create at least one user account during install, or by using the user configuration tool or the **useradd** command afterwards. This is for security reasons. A normal user doesn't have the permissions that root has, so working in a user account can help prevent system corruption. You should only log in as root when you are doing system maintainence, or other tasks, that only root can do.

When you are logged in as a normal user, and find that you need root permissions to do something (like mounting filesystems, activating ethernet or ppp connections, etc.) you should open a terminal window in X and issue the following command:

su -

If you are not in X, and are in a console (text screen with a command prompt) then just type **su -**.

That command will give you access to root, and the full root path, so you can run any commands you want to.

Once you are root, you can type **startx** to start the GUI interface (if you have it installed) and work from there.

13.4 Displaying ls in color

13.4.1 Q: How do I get `ls` to display in color?

How do I get ls to display in color?

13.4.2 A: Login as root and add the `--color` option to the command.

If you want to add color to the **`ls`** command, just include the --color option as **`root`**:

```
ls -al --color /etc
```

Some users feel that adding --color does more than add a splash of color; it gives a clue about the types of files in a directory. For example, directories might all be a royal blue, program files would be green, and so on.

Displaying the listing in color all the time involves a little more work. You will need to add one line to the .bashrc file in your /home/login directory. The .bashrc file is used by your shell when you login. Make sure you're in your /home/login directory and copy the .bashrc file, keeping it in the same directory, but with a name like .bashrc2.

```
cp .bashrc .bashrc2
```

If you make a mistake or have trouble, you can replace your .bashrc file by typing:

```
cp .bashrc2 .bashrc
```

at the shell prompt.

Open the .bashrc file with your favorite text editor. For example, you could type **`pico .bashrc`** at the command line to open the file. You should see something like this:

```
# .bashrc
# User specific aliases and functions
# Source global definitions
if [ -f /etc/bashrc ]; then
. /etc/bashrc
```

Under the line "# User specific aliases and functions" type:

`alias ls="ls -al --color"`

Make sure to write your changes to the file and save them. The changes will not take effect until you close your xterm window and open a new xterm.

13.5 Switching Environments

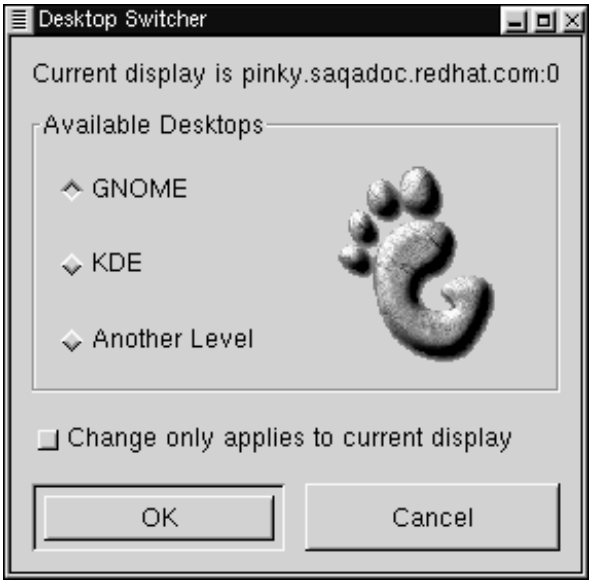
13.5.1 Q: Options for Switching Environments

I know I have both KDE and GNOME on my Red Hat Linux system, but how do I change from one environment to the other?

13.5.2 A: Using Switchdesk

You can use a utility called Switchdesk, which allows you to change to and from GNOME, KDE, and other environments.

Figure 13–1 The Switchdesk Utility from the Shell Prompt



You can use Switchdesk from either the shell prompt or from the login screen.

From a shell prompt, type

```
switchdesk
```

A window will appear (see Figure 13–1, *The Switchdesk Utility from the Shell Prompt*) showing you the choices of environments you can select, under **Available Desktops**. Once you select your new environment, click on **OK**.

To see your changes take effect, you'll have to log out, then log back in.

At the login screen, you can select environments by clicking on **Session** and selecting an environment from the pulldown menu that appears.

Now, just type in your username and password, and log in as usual.

13.6 Shutting Down

13.6.1 Q: Shutting Down

What's the right way to shut down or reboot my system? Are there any shortcuts?

13.6.2 A: Putting Away Files

Any method you choose which allows your Red Hat Linux system to put away all its data files and stop running processes is the right way to shut down. *Never* simply turn off your machine.

Here are two ways you can cleanly shut down your system:

- From your X session: go to **Main Menu** => **Log out** then choose **Logout**, **Halt**, or **Reboot**. You can also choose to save your current setup, which means that the programs which are running when you log out will return when you log back in.

  If you select either **Halt** or **Reboot**, you'll be required to enter your login password after you press the **OK** button to verify your selection.

- From the shell prompt: type **`shutdown -r now`** or **`shutdown -h now`**. The **`-r`** means "reboot" and the **`-h`** means "halt." You will be required to enter your password before these commands are executed.

- From the login screen: go to **System** and choose whether to halt or reboot your system, without a required password.

A Shortcut to Rebooting

One of the fastest ways to reboot your system is to press the [Ctrl],[Alt], and[Del] keys all at the same time, from a virtual console.

A virtual console is a character cell interface, unlike the graphical interface of the X Window System. There are several virtual consoles available to you, but the easiest to remember is probably the first one. You can reach it by pressing [Ctrl]-[Alt]-[F1].

Getting Back

To return to your X session from a virtual console, just press the [Ctrl]-[Alt]-[F7] keys.

To reboot from a virtual console, first move to a virtual console by pressing [Ctrl]-[Alt]-[F1], then press [Ctrl]-[Alt]-[Del] to reboot.

13.7 Error Messages During Installation of RPMs

13.7.1 Q: Errors During Software Installation

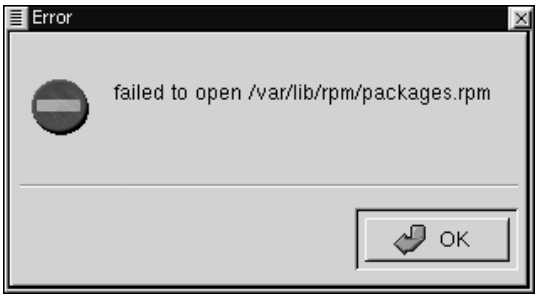
How do I install an RPM from a CD or the Internet? I keep getting an error message when I use Gnome-RPM.

13.7.2 A: File Permissions

If you're getting an error message similar to `failed to open /var/lib/rpm/packages.rpm` (see Figure 13–2, *An RPM Install Error*) it's probably because you do not have the correct permissions set.

When you install software, you're often required to make system-wide changes — changes which only root can make. If you are using your user account, you will not have permission to make such changes by default.

Figure 13–2 An RPM Install Error



For more information about RPM and Gnome-RPM, refer to the chapters in this guide or, for greater depth, refer to the *Official Red Hat Linux Customization Guide* on the Documentation CD (or online, at http://www.redhat.com/support/manuals).

13.8 Starting Applications

13.8.1 Q: How Can I Start an Application I Downloaded?

I installed an application I downloaded, and everything seemed to go fine, but I still get "command not found" when I type its name. I think I have the right name, so why won't it start?

13.8.2 A: Starting Applications

If you're trying to start an application from the shell prompt and it isn't working, try adding **./** before the name of the application's executable.

For example, you've downloaded a **setiathome** client and want to try it out. You follow the directions for installing the software. Now you change to the directory in which you know the executable can be found (as shown below).

```
cd setiathome
```

To start the application now, precede the executable with a **./** as shown below:

```
./setiathome
```

Briefly, the reason you need to use the **./** in order to start the application is because the executable wasn't placed in a directory where your shell knew it could be found (such as /usr/bin).

In such instances, you often have to go into the directory which holds the executable and start the application from there. That means you'll have to tell your shell where it can find the executable; adding **./** tells bash the executable can be found in the current working directory.

You can customize your settings so that you won't be required to use the **./** each time. See the following for more information on how to accomplish this.

Editing Your PATH

If you want to periodically start programs without having to enter a **./** before the executable, you'll have to edit a file.

You'll have to add the current working directory (signified by the **.**) to the list of directories in your **PATH** environment variable. This will let the shell know that it can start applications in the directory in which you're currently working.

These instructions are intended *only* for user accounts. Avoid modifying files such as root's `.bash_profile`, because of the potential security risks.

Start a text editor, such as pico, at a shell prompt. You can open the file called `.bash_profile` by typing the following:

```
pico .bash_profile
```

You'll see a **PATH** statement, similar to the one shown below.

```
PATH=$PATH:$HOME/bin:
```

To the end of this statement, add **`./`** as shown below

```
PATH=$PATH:$HOME/bin:/usr/lib/:./
```

Now, type [Ctrl]-[x]; you'll be asked whether you want to save "the modified buffer" (that's what Pico calls an updated file); type [y] for "yes." Next, you'll see the name the file will be saved as; press the [Enter] key.

Now, you should never have to manually add `./` to the beginning of an executable to start an application located in your current working directory.

13.9 Accessing a Windows Partition

13.9.1 Q: How Do I Access My Windows Partition?

I have a dual-boot system with Red Hat Linux and Windows 98. Is there a way to access my Windows partition while I'm running Linux?

13.9.2 A: Two Ways to Access Windows Partitions

You can access another partition on your system, for example, a Windows partition, in two different ways.

First, let's assume that your Windows partition is on your first IDE hard drive, in the first partition (`/dev/hda1`).

At a shell prompt, log in as root (type **`su`** and then enter the root password).

Create a directory at which the Windows partition will be mounted by typing the following command:

```
mkdir /mnt/vfat
```

Before you can access the partition, you will need to mount it at the directory you just created. As root, type the following command at a shell prompt:

```
mount -t vfat /dev/hda1 /mnt/vfat
```

Another method of mounting a Windows partition is by editing the file `/etc/fstab`.

At a shell prompt, `su` to root, following the above example.

Before you can access the partition, you will need to mount it at the directory you just created. As root, type the following command at a shell prompt:

```
mkdir /mnt/vfat
```

Next, while you're still root, open the `/etc/fstab` in a text editor by typing (for example):

```
pico /etc/fstab
```

The line that probably shows where Windows is mounted is `/dev/hda1` (or similar). Edit this line so it looks like this:

```
/dev/hda1 /mnt/vfat vfat noauto,owner,users 0 0
```

Press [Ctrl]-[x] and then press "y" for "yes" when prompted to save the changes. For more information on the **`mount`** command, read the man page by typing **`man mount`** at a shell prompt.

To access the partition, type `cd /mnt/vfat`. To navigate through Windows 98's "long filename" directories, surround the directory in quotation marks, as in `ls "Program Files"`.

13.10 Finding Commands Quickly

13.10.1 Q: Locating Previously Used Commands

I was looking at a man page yesterday, but I can't remember the name of the command I was reading about, and I didn't write it down. How do I get the man page back?

13.10.2 A: Searching .bash_history

Probably, the command you used is stored in a file called `.bash_history`. By default, this file records the last 500 commands you typed at the shell prompt.

You can glimpse the history of your commands by typing `history` at the shell prompt, but the results will speed by quickly.

Another way to view `.bash_history` is with a pager such as less. Type **`less .bash_history`** at the shell prompt and the results will display one page at a time. To move forward a screen, press the [Space]; to move back a screen, press the [b] key, and to quit, press [q].

Paging through `.bash_history` to find a command can be tedious. Alternatively, you can search through the file for keywords using **`grep`**, a powerful search utility.

Let's say you'd been reading the man page the day before, but can't recall its name. To search for the command, type:

```
history | grep man
```

You'll see a list of all the commands you typed which have the word *man* in them.

There are plenty of ways to your command history. For other tips and tricks, see Section 13.12, *Tips on Using Command History*.

13.11 Keep ls Output from Scrolling

13.11.1 Q: When ls Output Scrolls Off the Screen

Whenever I type `ls` I can barely see the output of the directory because it scrolls by too quickly. How can I actually read the output?

13.11.2 A: Piping the Output of ls

To prevent the output of `ls` from scrolling by too quickly, pipe the output to a pager, such as `less` or `more`. The results will be similar to the DOS command `dir` *`somedirectory`* `/p`, because you'll see the output one screen, or "page" at at time.

To read the contents of `/etc` with `less`, type the following command at the shell prompt:

```
ls -al /etc | less
```

To move forward a screen, press [Space]; to move back a screen, press the [b] key; to quit, press [q].

You can achieve the same results with `more`, another pager.

Printing ls Output

You can also print the directory by piping the output to a printer in the same way that you piped the output to your screen. If you've configured a printer, type the following to pipe the output of a command to the printer:

```
ls -al /etc | lpr
```

13.12 Tips on Using Command History

13.12.1 Q: History Tips and Tricks

What are some other ways I can use command history?

13.12.2 A: Using More Command History

If you type **`history`**, you'll see a numbered list flash by, showing you the previous 500 commands you've used.

You probably don't need to see all of the last 500 commands, so the command **`history 20`** might be useful. This way, only the previous 20 commands you'd typed will display (you can use any number with this command).

Other Shortcuts

Here are other command history shortcuts which may be useful to you:

- "Bang, bang": Typing `!!` (called "bang bang") executes the last command in the history.
- "Bang *number*": Typing `!`*`number`* (as in `!302`) will execute the command which is numbered 302 in the history file.
- "Bang *string*": Typing `!`*`string`* (as in `!rpm`) will execute a command with the most recent matching string from the history file.
- [Up arrow] and[down arrow]: At the shell prompt, you can simply press the up arrow to move back through previous commands in your history list (the down arrow will move you forward through the commands) until you find the command you want. Press [Enter] to execute the command, just as if you had typed it on the command line.

13.13 Forgotten Password

13.13.1 Q: Using Linux Single

Help! I can't remember my root password. How do I log in now?

13.13.2 A: Use Single-User Mode

You can log in with single-user mode and create a new root password.

Reboot your computer. If you are currently set up to log in to X rather than a console, you will need to press [Ctrl]-[X] when prompted. When you see the `boot:` prompt, type **`linux single`** to enter single-user mode. Some of the filesystems will be mounted, and you will find a `bash#` prompt when you've entered single-user mode (note that this prompt will look somewhat different than the prompt you're accustomed to).

Now, you can change root's password by typing

```
bash# passwd root
```

You'll be asked to re-type the password for verification. Once you're finished, the password will be changed and you can reboot by typing `shutdown -r now` at the prompt; then you can log in to root as before.

13.13.3 Password Maintenance With Linuxconf

I forgot or want to change my user account password.

Open a shell prompt and log in as root (**`su -`** and root password). Then type **`linuxconf`** at the prompt. This will open the linuxconf tool.

Click on **User accounts** to expand that part of the tree and then click on **Normal**. Under **`Normal`**, click on **User Accounts** again. A list of user accounts will appear.

Select the user name you need a password for and the **Base information** tab appears. Click on **Passwd** and a **New UNIX password** dialog appears. Enter the new password for this user account. If you forgot your old one, you have to select a new one; Linux will not tell you your old password. Click on **Accept**.

13.14 Changing Login from Console to X at Startup

13.14.1 Q: Changing to Graphical Login

How do I change my login from the console to the graphical screen?

13.14.2 A. Edit /etc/inittab

Instead of logging in to your system at the console and typing the `startx` command to start the X Window System, you can configure your system so that you can log in directly to X.

You must edit one file, `/etc/inittab`, by changing just one number in the runlevel section. When you're finished, log out and, the next time you log in, you'll have a graphical screen.

Open a shell prompt. If you're in your user account, `su` to root by typing

```
su
Password: yourrootpassword
```

Now, type `pico /etc/inittab` to edit the file with Pico. The file `/etc/inittab` will open. Within the first screen, you'll see a section of the file which looks like this:

```
# Default runlevel. The runlevels used by RHS are:
#   0 - halt (Do NOT set initdefault to this)
#   1 - Single user mode
#   2 - Multiuser, without NFS (The same as 3, if you do not have networking)
#   3 - Full multiuser mode
#   4 - unused
#   5 - X11
```

```
#   6 - reboot (Do NOT set initdefault to this)
#
id:3:initdefault:
```

To change from a console to a graphical login, you should change the number in the line `id:3:initdefault:` from a `3` to a `5`.

WARNING

Change *only* the number of the default runlevel from `3` to `5`.

Your changed line should look like:

```
id:5:initdefault:
```

When you're satisfied with your change, save and exit the file using the [Ctrl]-[x] keys. You'll see a message telling you that the file has been modified, and asking you to confirm your change. Type [y] for yes.

That's it. Your next login will be from the graphical screen.

13.15 Configuring X

13.15.1 Q: Changing Screen Resolution

Everything on my desktop looks tiny. How do I change my screen resolution?

13.15.2 A. Use Xconfigurator

After you have installed Red Hat Linux, you may want to change your screen resolution, so that objects will fit better on your desktop. You can adjust the resolution with Xconfigurator, a tool which allows you to modify your X Window System settings.

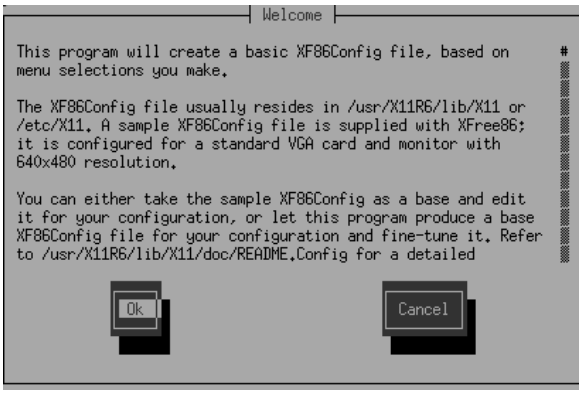
To use Xconfigurator, you must log in as root and at a shell prompt, type `Xconfigurator` to start the application. The opening screen will look like Figure 13–3, *The Opening Dialog of XConfigurator*.

Other Ways To Start the Xconfigurator

You can start Xconfigurator in two other ways, both of which give you access to additional configuration tools.

From the menu in GNOME or KDE, go to **System** => **Text mode tool menu**; or, from a shell prompt, type `setup`. Both methods will produce a menu of items which you can configure, such as X, your sound card, mouse, and other features.

Figure 13–3 The Opening Dialog of XConfigurator



To navigate and make selections, use the [Tab] key. When your selection is highlighted, press the [Enter] key.

Is Your Hardware Supported?

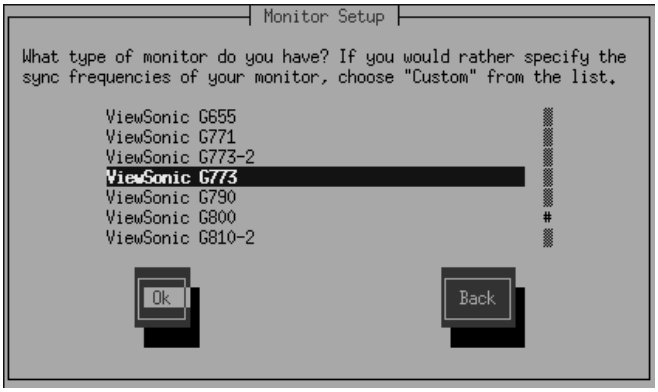
Make certain that your monitor and graphics card are supported for Red Hat Linux. To check, visit the Hardware Compatibility List at http://www.redhat.com/hardware.

To continue, [Tab] until the **Ok** button is highlighted and press [Enter]. Xconfigurator will then probe your system for your video card, and suggest the correct X server to match your system, as in Figure 13–4, *Results of Video Card Probe*. Click the **Ok** button to proceed.

Figure 13–4 Results of Video Card Probe

Next, pick your exact monitor make and model number, as in Figure 13–5, *The Monitor Setup Dialog*. You can often find the make and model number on the front or back of your monitor.

Figure 13–5 The Monitor Setup Dialog



You'll have quite a few monitor choices — the hash mark (#) indicates your position in the list. Use your [up arrow] and[down arrow] keys to move through the list, or use the [Home], [End], [Page Up] and [Page Down] keys. You can also jump to the manufacturer's place on the list by typing in the first letters of the name (such as ViewSonic) on your keyboard.

Monitor Not On the List?

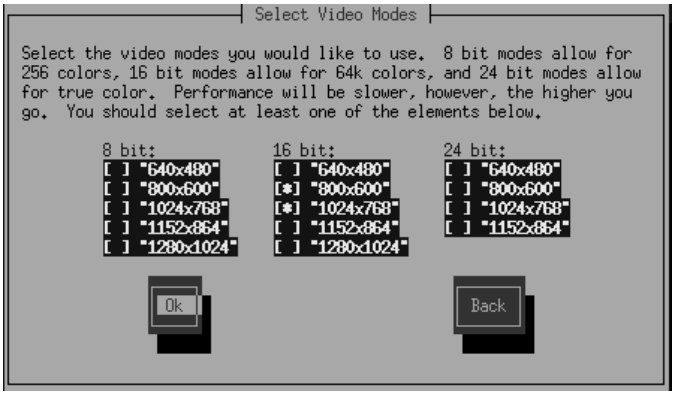
If you don't find your monitor among the listed makes and models, you can specify your monitor's horizontal and vertical sync frequencies by choosing **Custom** in the list. Refer to your monitor's documentation for information about its correct frequency rates. *Be careful!* Don't select a frequency range which exceeds your monitor's capacity, because you could damage or destroy it.

Once you have selected your monitor's make and model, a dialog will inform you that your card will be probed for its correct display settings. Don't worry if your monitor blinks during the process; that's normal.

If You Don't Want Linux to Probe

You don't have to probe your video card. If you choose **No** when asked if you want to accept the settings on the **Monitor Probe** screen, the next dialog will ask you how much memory is on your video card, then you will be able to select your chosen resolution (see Figure 13–6, *Select Video Modes*).

Figure 13–6 Select Video Modes



You can choose modes ranging from 8-bit to 24-bit, depending on the power of your computer and how many colors you want displayed. In each of the mode columns, you'll find resolution choices listed; using your [Tab] key, position the cursor in the boxes next to your chosen resolution. Select one by pressing [Space].

Choosing More Than One Resolution?

You can select more than one screen resolution — for example, if you prefer **800x600** and **1024x768**, you can adjust your resolution at any time without opening Xconfigurator. To do this, use the [Ctrl]-[Alt]-[+ (plus)] or [Ctrl]-[Alt]-[- (minus)] keys to switch between resolutions.

When you're finished making your selections, press **Ok**.

Next, your video settings will be tested. You will see a graphical screen, with a dialog asking whether your settings appear correct. Following this dialog, another will ask whether you want a graphical login screen; if you answer **Yes**, you will have a graphical screen when you log in to your system. A final dialog will inform you of the location of your video configuration file (`/etc/X11`).

Now, log out, then log in again to your new screen resolution.

Part IV Appendixes

A Computer Basics

A.1 Introduction

Linux is no longer a "hackers'" operating system. People with all levels of computer knowledge can easily use it now. With this in mind, we thought it might be useful to provide some rudimentary computer usage information, covering the very basics of daily computer usage, for the brand-new computer user.

- For a list of general computer terms see Section A.1.1, *Basic Computer Terminology*.
- To learn how to copy text from one place to another see Section A.1.2, *How to Cut and Paste Text*
- If you are using a two-button mouse, see Section A.1.3, *How to Emulate a Three-button Mouse*.
- For tips on screen savers and desktop themes, see Section A.1.4, *Using Screen Savers and Desktop Themes*.
- To learn a little about using a Web browser, see Section A.1.5, *Basic Web Browser Navigation*.
- For tips on email etiquette, see Section A.1.6, *Email Etiquette*.
- To learn how to attach a file to an email, see Section A.1.7, *How to Attach a File to an Email*.
- For instructions on creating files and directories, see Section A.1.8, *Creating Files and Directories*.
- For instructions on saving, naming, and finding files, see Section A.1.9, *Saving, Naming, and Finding Files*.
- And for an explanation of the Linux file system, see Section A.1.10, *File System Structure*.

A.1.1 Basic Computer Terminology

applet

a small application or program.

backup

a copy of a file or disk.

boot

to start a computer.

bug

a programming error that keeps a program from working properly.

CD-ROM

an acronym for Compact Disc Read-Only Memory. An optical disc that resembles an audio CD, but holds computer data.

crash

a system malfunction that causes a computer to stop working, requiring a reboot.

cursor

the on-screen pointer, usually controlled by the mouse, sometimes by the directional arrows on the keyboard.

desktop

the entire computer screen, containing icons and menus.

desktop theme

color scheme, background images, and varied borders that you can apply to your desktop and open windows to make them aesthetically pleasing.

disk

A spinning platter made of magnetic or optical material used for storing data.

download

To transfer data from one computer to another.

drag and drop

To move an icon, text, image, or media object from one place to another; to launch an application; place the cursor over an icon, hold down the left mouse button, and move the mouse. Release the button and the icon stays wherever the cursor is. Items can be moved between documents as well as different applications.

drive

A device that spins disks or tapes in order to read and write data (a hard drive, floppy drive, CD-ROM drive, or tape drive).

driver

A file that tells a computer how to communicate with an add-on piece of equipment (like a printer).

hard drive

A large capacity storage device made of a number of disks, housed in a rigid case.

highlight

To select by clicking once on an icon or by dragging the cursor over text in a document.

icon

A graphic symbol for an application, file, folder, or action.

launch

Start an application.

memory

The temporary holding area where data is stored while it is being used or changed; the amount of RAM a computer has installed.

menu

An onscreen list of operations available for selection, listed by topic.

modem

MOdulator-DEModulator. A peripheral device that connects computers to each other for sending communications via telephone lines.

mouse

A pointing device that is used to move a cursor on the computer screen.

operating system

The software that controls the computeras a whole; responsible for scheduling tasks, storage, communication with peripherals, and providing a basic user interface.

peripheral

An add-on component to your computer, such as a printer or scanner.

screen saver

A monitor's screen may damage or burn if it sits idle for too long. A screen saver is an image that moves across the screen to prevent damage. It can be configured to appear after a designated amount of time.

print spooler

A program that stores documents to be printed on the hard drive, freeing some memory so other functions can be performed while printing goes on in the background. Also provides a common place to queue documents to be printed.

RPM

Software files are referred to as RPMs. RPM also stands for Red Hat Package Manager.

save

To write a file onto a disk or hard drive.

scroll

To move the contents of a window to bring hidden items into view.

server

A central computer dedicated to sending and receiving data from other computers on a network.

shut down

To safely turn off a computer without damaging files or losing data.

Web browser

Software used to access the Internet.

A.1.2 How to Cut and Paste Text

To cut and paste text in Red Hat Linux, place the cursor at the beginning of the text you want to cut, hold down the left mouse button, and drag the cursor over the text you are selecting. When all the text you want is highlighted, release the left mouse button.

Now place the cursor on the line where you want to paste the text. Click once on the middle mouse button. The text will appear.

The text will not actually be cut from its original location. If you want it removed, highlight it and press the [Delete] key on your keyboard.

A.1.3 How to Emulate a Three-button Mouse

Red Hat Linux is designed to use a three-button mouse. If you have a two-button mouse, you should have selected three-button emulation during the installation process. If you are using three-button emulation, pressing both mouse buttons at the same time equates pressing the missing third (middle) button.

If you are instructed to click with the mouse on something, that means click the left mouse button. If you need to use the middle or right mouse button, that will be explicitly stated. (Of course, this will be reversed if you have configured your mouse to be used by a left handed person.)

The phrase "drag and drop" may be familiar to you. If you are instructed to drag and drop an item on your GUI desktop, click on the icon in question and hold the mouse button down. While continuing to hold down the mouse button, drag the item (by moving the mouse) to a new location. When you have reached the desired location, release the mouse button to drop the item.

A.1.4 Using Screen Savers and Desktop Themes

Screen savers are not just entertaining, they can also save your monitor from damage. Much like a film strip that burns when it gets stuck in front of the projector's bulb, your monitor can "burn" if it stays on and idle for too long.

You can choose a screen saver and set the amount of time that will pass before it is displayed from your control center. Access the control center from the **Settings** option on the panel's main menu.

Desktop themes just look nice. They serve no other purpose. Themes combine colors, images, and fonts for display on your desktop, the borders of windows, etc. They look good, but some of the more intricate themes can slow down your computer.

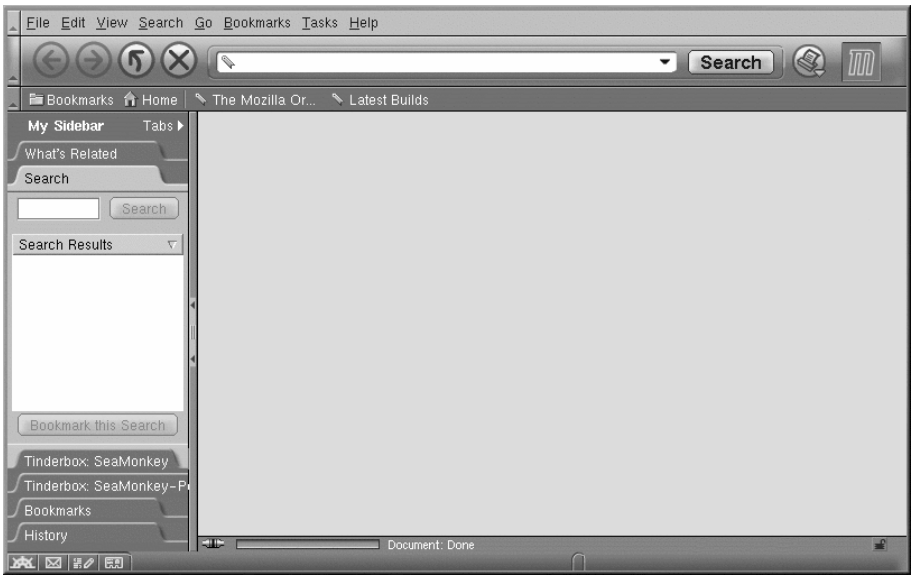
Settings for themes also can be accessed through the control center.

A.1.5 Basic Web Browser Navigation

A Web browser is a program used to view pages on the Internet, such as Mozilla or Netscape. Browsers generally have similar navigational functions. The toolbar on a browser window holds buttons that can take you back and forth between pages you have recently viewed, referesh your screen so the latest information from the website you are visiting is shown, and so on.

There is a field near the top of the screen where you can manually enter a website address, rather than click on a link or do a search. This field is usually labelled with **Location**, **Address**, **URL**, **Go To**, or something similar. If it is not labelled, it is likely to be the only place near the top of the screen where text can be typed at all.

Figure A–1 Mozilla Web Browser



Most browsers also have a button near the top of the screen where you can add bookmarks. Bookmarks are websites you want to be able to return to quickly and/or often. Once you find a site that you want to bookmark, click on the **Bookmark** button and select **Add bookmark** (or similar option). You can also edit bookmarks by selecting **Edit** (or similar option) after you click on **Bookmark**.

Generally, the browser you install should have documentation included that explains usage in greater detail.

A.1.6 Email Etiquette

Email is an extremely common tool these days, be it for use at work, home, or elsewhere. It is a very convenient and fast way to communicate with people. Write a letter, click a few buttons, and it is on its way. But there are a few "understood" rules of email etiquette.

For example, many people feel that capitalizing an entire word or phrase indicates anger, as if the writer is yelling at the reader. So unless you really are angry, avoiding using all caps to emphasize a word or phrase. Also, when forwarding or replying to email, it is considerate to delete all the old header information (the addresses and messages from others who may have received this mail prior) from the beginning of the letter so the next recipient does not have to scroll through a bunch of stuff that is irrelevant before they get to the body of the letter.

When using the **Reply** or **Reply All** buttons, think about what you are saying and to whom you are saying it. When you receive an email and it is addressed to a number of people, if you hit **Reply All** and send a response, they all get it. Your response might not be something they all want or need to see. In that case, you can click on **Reply All** and then go delete certain addresses from the **To** line of your letter. If you only want to respond to the person who sent the email (the person listed in the **From** field), click on **Reply**. When in doubt, look in the **To** field of your letters before you send them to make sure they are going to the people you intend.

A.1.7 How to Attach a File to an Email

You can attach a file or website to an email without having to cut and paste a lot of text into the body of the letter. Most email tools have an icon in the letter composition window that you can click on to attach something to a letter. The icon often looks like a paperclip. You can also look for an attach option in the outgoing letter's main menu, at the top of its screen, for example, **File** => **Attach**.

Figure A–2 Mozilla Composer Buttons

Whether you click on an icon or select attach from the menu, you will be asked what you want to attach (probably a file or website). If you choose **file**, a dialog box will appear where you can either type the file name manually or select a file by highlighting it. If you choose **website**, a dialog box will open and you will need to type the URL (address) for the website you want to attach to your email. The page itself will appear in the body of your email. If you only want to send a link to a website, copy and paste the address from the URL field into the body of the letter. You might also be able to go to the main menu at the top of your Web browser and select **File** => **Send Page** or **Send Link**. This will open an email composition screen. If you select **Send Page**, the page itself will appear in the body of the letter. If you select **Send Link**, a link to the website appears in the body of the letter.

A.1.8 Creating Files and Directories

You can create a file with a graphical user interface, or you can do it a lot faster in a shell prompt. To create a file with a GUI, in GNOME, open the file manager, found in the main menu. Select the directory where you want to store the file from the tree list on the left. Then go to **File** => **New** => **File** on the main menu. A text editor window should appear on your screen, probably Emacs. You can type your text in this window and then go to **Files** => **Save Buffer As** on the main menu.

In KDE, go to **Main Menu** => **Home Directory**. This opens Konquerer, KDE's file manager and Web browser. Select **Edit** => **Create New** and then choose directory, text file, or HTML file. A dialog box

opens where you can name the file or directory. If you want to create a file within a specific directory, highlight that directory in the Konquerer window before you select **Edit** => **Create New**.

After you create an empty file or directory, it appears in the Konquerer window. You can open a file and begin entering content by highlighting it and then selecting **Location** => **Open With** and then selecting the tool you want to work in.

You can also open a text editor and just make the file without going through either of the file managers. Just open Emacs by going to **Main Menu** => **Programs** => **Applications** => **Emacs** on the main menu. Now in Emacs, go to **Files** => **Open Files**. This opens an empty screen and you can fill in your text here. When you are finished, go to **Files** => **Save Buffer As**. At the very bottom of the Emacs screen, you will see:

```
Write file: ~/
```

Type the name of the file here, after the /, and press [Enter]. You can designate a specific directory before the file name, if you like. Otherwise, it will be saved in the directory in which you are currently working.

To create a new directory, you can follow the same steps above for creating a file using the graphical file manager, but select **File** => **New** => **Directory** from the main menu. Or you can use the `mkdir` command at a shell prompt, as explained below.

Open a shell prompt screen by clicking on the appropriate icon on the panel at the bottom of your desktop. Move to your login directory and type:

```
mkdir tigger
```

Now, you have created a directory called `tigger` in your login directory. Your new directory's absolute pathname is `/home/`*`yourlogin`*`/tigger`, and your home directory is the parent of `tigger`.

A.1.9 Saving, Naming, and Finding Files

Any file you create that you want to keep must be saved. Simply click on **File** => **Save** (or some such similar menu option--they are usually obvious)and your work is saved. To name the file, select **Save as** instead of **Save**. A dialog box will open where you select the directory in which that file is to be saved and where you type a name for that file. It is best to use extensions on the end of your file names since extensions explain what type of file it is. For example, a text file should be saved as <*filename*>.txt, an HTML file should be <*filename*>.html and so on. For descriptions of file extensions see Appendix C, *Identifying/Finding File Extensions*.

Save often. Very important. As you work, click on **File** => **Save**, or some such equivalent, often. Computers are known to experience power surges or they just lock up for no obvious reason sometimes. Power surges often cause your machine to spontaneously reboot or shudown. When this happens, any unsaved data is lost.

A.1.10 File System Structure

Every operating system has a method of storing its files and directories so that it can keep track of additions, modifications, and other changes. In Linux, every file is stored on the system with a unique name within directories which can also hold other files and subdirectories.

You might think of the system as a tree-like structure, in which directories "branch off." Those directories may contain, or be the "parent" of, other directories which may, in turn, hold files or directories of their own.

There would not be a tree without a root, and the same is true for the Linux filesystem. No matter how far away the branches, everything is connected to the root, which is represented as a single forward slash (`/`).

Red Hat Linux uses the term "root" in several different ways, which might be confusing to new users. There is the root account (the superuser, who has permission to do anything), the root account's login directory (`/root`) and the root directory for the entire filesystem (`/`). When you are speaking to someone and using the term "root," be sure you know which root you are talking about.

What is the FHS?

Other Linux distributions exist, and your Red Hat Linux system is probably compatible with them because of the Filesystem Hierarchy Standard (FHS). The FHS guidelines help to standardize the way system programs and files are stored on all Linux systems.

To read more about the FHS, turn to the chapter on system administration in the *Red Hat Linux Reference Guide*. You can also visit the FHS website: http://www.pathname.com/fhs.

Try logging into your user account (which will help prevent disastrous mistakes), and taking a look around.

First, take a look at the root directory. This will help give a larger picture of where things are.

At the shell prompt, type:

```
cd /
```

You will see a prompt that looks like:

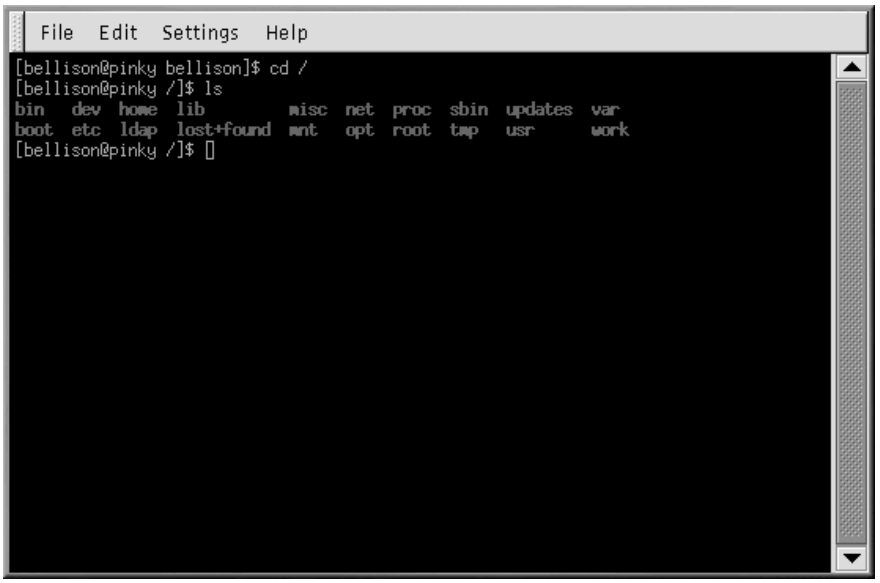
```
[newuser@localhost /]$
```

Now, take a look at which directories "branch off" the root directory by typing:

```
ls
```

This is a little like viewing the tip of an iceberg. The directories you see are the parent directories of other directories, in which there may be other directories, and so on.

Figure A–3 A View of the Directories from Root



Here are just a few of the directories you are likely to find:

```
etc     lib     sbin
usr     var
```

There are more, but for now, take a look at the `/etc` directory.

```
[newuser@localhost /]$ cd etc
[newuser@localhost /etc]$ ls
```

Here, among other things, you will find configuration files, which are files that help make programs work for your system, store program and system settings, and more.

Among the directories in here, you will see `/etc/X11`, which also contains directories and configuration files for the X Window System.

In the directory `/etc/skel`, you will find skeleton user files, which are used to populate newly created user accounts with standard, commonly used files.

What is a skeleton file? Well, when you were logged in as root, one of the first things you did was create a user account. When that user account was created, files were taken from `/etc/skel` and placed into the new account. The `/etc/skel` files are the standard files needed by every new account.

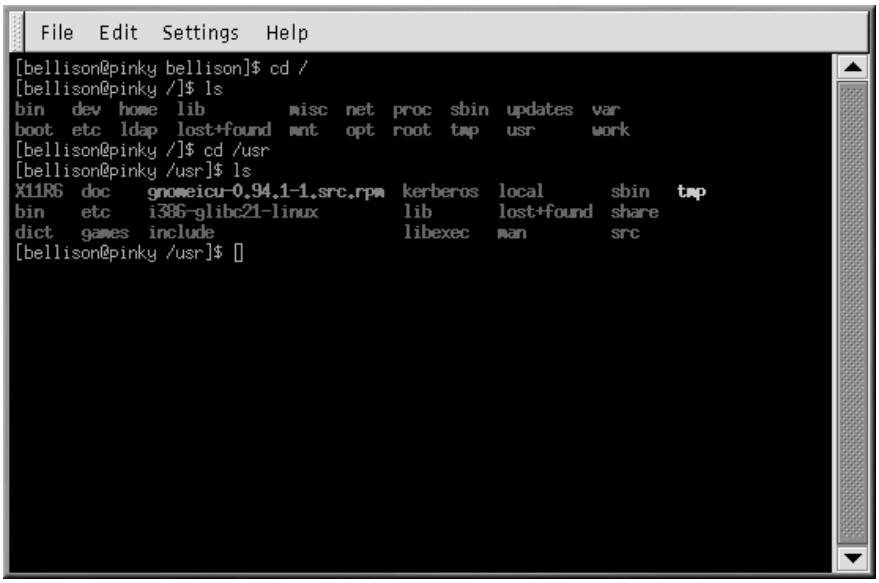
Look around a little in the `/usr` directory. From your current location in `/etc/skel`, type:

```
[newuser@localhost /skel]$ cd /usr
[newuser@localhost /usr]$ ls
```

If you forgot, **`cd /usr`** moves you to the **`/usr`** directory and **`ls`** lists the files in that directory.

In `/usr`, you will see a number of directories that hold some of your system's most important programs and files (see Figure 11–8, *Typing ls in /usr*).

Figure A–4 Typing ls in /usr



In `/usr/share/man`, you will find the system manual pages; other documentation that is not covered by man pages will be found in `/usr/share/doc` and in `/usr/share/info`.

In `/usr/X11R6`, you will find files related to the X Window System, including configuration and documentation files.

In `/usr/lib` you will find files which are considered libraries for your system. Libraries contain commonly used code that can be shared by many programs.

Red Hat Linux uses the RPM technology of software installation and upgrades. Using RPM, either from the shell prompt or through Gnome-RPM, is a safe and convenient way to upgrade or install software. For more information about using Gnome-RPM, see the Official Red Hat Linux Customization Guide.

Once you become more comfortable with your system, you may want to install software not available in RPM format. To minimize collisions with RPM-managed files, the best place to put such software is in `/usr/local`.

B A Comparison of Common DOS and Linux Commands

Many Linux commands typed at a shell prompt are similar to the commands you would type in MS-DOS. In fact, some commands are identical.

This appendix provides common commands used at the MS-DOS prompt in Windows 9*x* and their counterparts in Linux. Basic examples of how the command are used at the Linux shell prompt are also provided. Note that these commands usually have a number of options. To learn more about each command, read its associated man page (for example, type **`man ls`** at the shell prompt to read about the `ls` command).

Table B–1 Similar Commands

Command's Purpose	MS-DOS	Linux	Basic Linux Example
Copies files	`copy`	`cp`	`cp` *`thisfile.txt`* `/home/`*`thisdirectory`*
Moves files	`move`	`mv`	`mv` *`thisfile.txt`* `/home/`*`thisdirectory`*
Lists files	`dir`	`ls`	`ls`
Clears screen	`cls`	`clear`	`clear`
Closes prompt window	`exit`	`exit`	`exit`
Displays or sets date	`date`	`date`	`date`
Deletes files	`del`	`rm`	`rm` *`thisfile.txt`*
"Echoes" output on the screen	`echo`	`echo`	`echo` *`this message`*
Edits files with simple text editor	`edit`	`pico`[1]	`pico` *`thisfile.txt`*
Compares the contents of files	`fc`	`diff`	`diff` *`file1 file2`*

[1] Pico is a simple text editor; other editors you can use in place of Pico include Emacs and vi.

Command's Purpose	MS-DOS	Linux	Basic Linux Example
Finds a string of text in a file	`find`	`grep`	`grep` *`this word or phrase`* *thisfile.txt*
Formats a diskette	`format a:` (if diskette is in `A:`)	`mke2fs` (or `mformat`[2])	`/sbin/mke2fs /dev/fd0` (`/dev/fd0` is the Linux equivalent of `A:`)
Displays command help	*`command /?`*	`man`[3]	`man` *`command`*
Creates a directory	`mkdir`	`mkdir`	`mkdir` *`directory`*
View a file	`more`	`less`[4]	`less` *`thisfile.txt`*
Renames a file	`ren`	`mv`	`mv` *`thisfile.txt thatfile.txt`*[5]
Displays your location in the file system	`chdir`	`pwd`	`pwd`
Changes directories with a specified path (**absolute path**)	`cd` *`pathname`*	`cd` *`pathname`*	`cd` *`/directory/directory`*
Changes directories with a **relative path**	`cd ..`	`cd ..`	`cd ..`
Displays the time	`time`	`date`	`date`
Shows amount of RAM and use	`mem`	`free`	`free`

2 This formats a disk for the DOS filesystem.

3 You can also use `info` for some commands.

4 The `more` pager can also be used to page through a file a screen at a time.

5 The `mv` command can both move a file and, if you want to rename a file in the same directory, you "move" that file to the same directory with a new name, as in this example.

C Identifying/Finding File Extensions

C.1 Introduction

This appendix lists and describes common Linux file extensions. Also included is a section explaining how to get your system to properly identify a file with no extension, an incorrect one, or one that you are uncertain about.

C.1.1 Compressed Files

- .tar - an archive file (short for tape archive)
- .gz - a compressed file (gzipped)
- .tgz - a tarred and gzipped file

C.1.2 File Formats

- .txt - a plain ASCII text file
- .html/.htm - an HTML file
- .ps - a PostScript file; formatted for printing
- .au - an audio file
- .wav - an audio file
- .xpm - an image file
- .jpg - a graphical or image file, such as a photo or artwork
- .gif - a graphical or image file
- .png - a graphical or image file
- .pdf - an electronic image of a document

C.1.3 System Files

- .rpm - a Red Hat Package Manager file
- .conf - a configuration file
- .a - an archive file
- .lock - a "lock" file; determines whether a program is in use

C.1.4 Programming and Scripting Files

- .h - a C or C++ program language header file
- .c - a C program language source code file
- .cpp - a C++ program language source code file
- .o - a program object file
- .pl - a Perl script
- .tcl - a TCL script
- .so - a library file

C.2 Missing or Incorrect Extension?

File extensions are not always used, or used consistently. So what happens when a file does not have an extension, or the file does not seem to be what the extension says it is supposed to be?

That is when the **`file`** command can be helpful.

If you create or find a file without an extension, use the `file` command to find out what the file is. For example, if you have a file called `saturday` with no file estension, type:

```
file saturday
```

and you will see **`ASCII text`**, or something similar, telling you it is a text file.

D System Directories

This is a list of the primary Red Hat Linux system directories. Each directory is described briefly. For additional directory information, refer to the Official Red Hat Linux Customization Guide and Official Red Hat Linux Reference Guide indexes.

- /bin - Used to store user commands. The directory /usr/bin also stores user commands.
- /sbin - Location of many system commands, such as shutdown. The directory /usr/bin also contains many system commands.
- /root - The home directory of the superuser.
- /mnt - This directory typically contains the mount points for filesystems mounted after the system is booted.
- /boot - Contains the kernel and other files used during system startup.
- /lost+found - Used by fsck to place orphaned files (files without names).
- /lib - Contains many library files used by programs in /bin and /sbin. The directory /usr/bin contains more library files.
- /dev - Stores device files.
- /etc - Contains many configuration files and directories.
- /var - For "variable" files, such as log files and the printer spool.
- /usr - Contains files and directories directly relating to users of the system.
- /proc - A virtual file system (not actually stored on the disk) that contains system information used by certain programs.
- /tmp - A "scratch pad" for users and programs. /tmp has global read/write access.
- /home - Typical location of user home directories.

E Keyboard Shortcuts

Here are a few keyboard shortcuts you can use to perform common tasks quickly. There are many more than are listed here. Visit http://sunsite.dk/linux-newbie/Linux_commands.htm#shortcuts for more command line and keyboard shortcuts.

- **`clear`** = clear the terminal. Type this at a command line to clear all displayed data from the terminal window.
- [Ctrl] + [l] = clear the terminal. This shortcut does the same thing as typing "clear" at a command line.
- **`history`** = show history of commands. Type this at a command line to see a numbered list of the previous 500 commands you typed. You can see a shorter list of commands by typing **`history`** followed by a space and a number, for example, **`history 20`**.
- [Ctrl] + [u] = clear the current line. If you are working in a terminal, use this shortcut to clear the current line from the cursor all the way to the end of the line.
- [Ctrl] + [e] or [a] = move cursor to end or beginning of line, respectively. This works in most text editors and in the URL field in Mozilla.
- [Ctrl + Tab] = switch tasks. If you have more than one application open at a time, you can use [Alt] + [Tab] to
- [Tab] = command autocomplete. Use this command when working in a terminal. Type the first few characters of a command and then press the [Tab] key. It will automatically complete the command or show all the commands that match the characters you typed. This is a good time saver.
- [Up/Down arrow] = show command history. When working in a terminal, press the up arrow to see a history of commands you have typed from the current directory (the down arrow moves you back down through the list). When you see the command you want to use, just press Enter. This can minimize retyping long commands over and over.
- [Ctrl + Alt + Backspace] = kill X. Kills your current X session and returns you to the login screen. Use this if the normal exit procedure does not work.
- [Ctrl + Alt + Delete] = shutdown and reboot. Shuts down your current session and reboots the OS. Use only when the normal shutdown procedure does not work.
- **`exit`** = logout. Type this at a command line to logout of the current user or root account.
- [Ctrl] + [d] = logout of a terminal or console instead of having to type exit or logout.
- **`reset`** = refresh terminal screen. Type this at a command line to refresh the terminal screen if characters are unclear.

- [middle mouse button] = pastes highlighted material. Use the left mouse button to highlight material. Point the cursor to the spot where you want it pasted. Click the middle mouse button to paste it.
- [Ctrl + Alt + Fn] = switches screens. [Ctrl] + [Alt] + one of the function keys ([F1] through [F7]) displays a new screen. F1 through F6 are text (console) screens and F7 is a graphical screen.

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