

Chapter 1

And in the Opposite Corner . . . a Penguin?

In This Chapter

- ▶ Napping through Linux History 101
 - ▶ Finding out what Fedora Core can do
 - ▶ Using Fedora Core as a workstation
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We see a penguin in your future. He's an unassuming fellow who's taking on a rather big competitor — that *other* operating system — in the battle for the hearts, minds, and desktops of computer users. Fedora Core, the successor to Red Hat Linux, is undeniably one of the driving forces behind the Linux revolution — and is the most popular Linux brand.

This chapter introduces you to the latest and greatest Fedora Core release, Fedora Core 3. This book covers all the bases (a good number of them, at least) about how to use Fedora Core as a desktop productivity tool, Internet portal, multimedia workstation, and basic network server. You can do lots of things with Fedora Core; this chapter gives you an overview of the possibilities — in addition to a brief look at the history of Linux.

History of the World, er, Linux: Part II

In the beginning of computerdom (said in a booming, thunderous voice), the world was filled with hulking mainframes. These slothful beasts lumbered through large corporations; required a special species of ultra-nerds to keep them happy; and ate up huge chunks of space, power, and money. Then came the IBM PC and Microsoft, and the world changed. Power to the people, sort of.

In 1991, a student at the University of Helsinki named Linus Torvalds became dissatisfied with the standard PC operating system. He thought that the Unix operating system might be better suited than MS-DOS or Windows to help him accomplish his work. Unix was invented in the 1970s and, although powerful, it was expensive, so he began writing his own version of Unix. Now, writing your own operating system is a simple task — not! After formulating the basic parts, Torvalds recruited a team of talented programmers through the Internet, and together they created a new operating system, or kernel, now named Linux.

One of the most important decisions that Torvalds made in the early days of Linux was to freely distribute the Linux kernel code for anyone and everyone to do with as they wanted. These free Linux *distributions* were (and still are) available in several forms, mainly on-line.

The only restriction Linus imposed on the free distribution of his creation was that no version of the software can be made proprietary. (*Proprietary* software is owned and developed by private companies in places that often rival Area 51 in security. However, *open-source* code is for “the people” — anyone can use and develop it without fear of violating copyrights or patent restrictions.) You can modify it to your heart’s content and also distribute it for fun or profit. What you *can’t* do is stop anyone else from using, modifying, and distributing the software you have modified.

Think of open-source software as a path. Linus and others started building the path, and many people came along and found it useful. Some people began adding to the path, while others used it as is. You can use the path, make it wider, and add another branch, if you want — but you can’t stop anyone from using the original path or the section you added; neither can you prevent people from adding their own branches.

The lack of traditional proprietary software restrictions on Linux has led to continued improvements and innovations in its technology — and subsequently its immense popularity. Open-source software, and Linux in particular, is transparent to all users and developers. That transparency allows people throughout the world to rapidly improve Linux and its associated subsystems. In contrast, proprietary operating systems are like a sealed, black box where no one except a small group of privileged insiders knows what goes on inside. Only that select group can make modifications, and that limits innovation and improvements.

Return to our brief history lesson: In early spring 1994, the first real version of Linux (Version 1.0) was made available for public use. It was very exciting. Even then, it was an impressive operating system that ran smartly on computers with less than 2MB of RAM and a simple 386 microprocessor. Linux 1.0 also included free features for which other operating systems charged hundreds of dollars. Nowadays, tens of millions of users enjoy Linux at home and work.

Free Software?

The Free Software Foundation (FSF), the brain-child of the great Richard Stallman, contributes much of the utilitarian software that makes using Linux much easier. Most of its bread-and-butter

utilities and commands, such as `ls` and `cat`, come from the FSF. Stallman is considered by many to be the originator of the open-source movement.



By the way, if you're wondering about the whole penguin thing, the answer is simple: Linux loves penguins. The Linux world naturally started using the bird as its symbol. The friendly and familiar penguin (whose name is Tux, by the way) now symbolizes All Things Linux.

Knowing What You Can Do with Fedora Core

Fedora Core combines all those pieces, plus some additional applications, and then goes another step to add a few of its own — to create an *integrated product*. The Fedora Core Project combines the basic Linux operating system with software (some made by other companies and some made by Red Hat) to produce a package with a value that's greater than the sum of its parts. That combination is known as a *distribution*, or *flavor*, of Linux.

To get you up and running as quickly as possible, we have bundled the Fedora Core 3 distribution on the DVD in the back of this book.



If your computer cannot use DVDs, you can get the full Fedora Core 3 distribution on CD-ROMs by sending in the coupon in the back of this book.

Fedora Core (and in its previous life, Red Hat Linux) was initially used almost solely to provide network-based services such as Web pages. However, the company Red Hat, Inc. — along with many open-source developers (such as the GNOME Project) — started working hard to make Linux suitable for the desktop. The result is that Fedora Core is now used in both server and desktop environments. And it's used by individuals, businesses, and governments to cut costs, improve performance, and just plain get work done.

You can use Fedora Core as a desktop workstation, a network server, an Internet gateway, a firewall, the basis of an embedded system (for, say, a smart VCR or refrigerator), or even as the brains of a multiprocessor

supercomputer. And, thanks to the many, many people who continually make refinements and innovations, Fedora Core continues to become more flexible and capable with each release.

This list shows some of the features that Fedora Core provides:

- ✔ **Desktop productivity tools:** Red Hat and now Fedora Core have successfully worked overtime during the past few years to make Linux work on your *desktop* (that is, the single-computer system that most people use for everyday tasks such as word processing or Web browsing). Fedora Core bundles software — such as the OpenOffice suite of productivity tools and the Mozilla browser — with the operating system so you can get everyday work done. The OpenOffice suite has a full-function word processor plus spreadsheet, presentation, graphical drawing, and Web-page-creation tools. Its word processor can read and write all Windows Office formats, plus many others (such as WordPerfect). Mozilla is a full-featured browser on a par with Microsoft Internet Explorer.
- ✔ **Multimedia stuff:** Fedora Core packs numerous multimedia tools for you to use. You can play, record, and rip audio tracks from CDs and DVDs. You can listen to streamed media sources (such as radio stations) over the Internet with Rhythmbox. Linux also lets you transfer photos and other items from your own cameras and MP3 players.
- ✔ **Network services:** Fedora Core's traces its roots to providing network-based services. Linux found its initial popularity in performing jobs like Web serving, file serving, and printer sharing — and hasn't missed a beat. We show you how to create several network services with Fedora Core in Part IV of this book.

Boosting Your Personal Workstation

We can't emphasize enough how well Fedora Core functions as a personal computer. With Fedora Core, you can easily create your own inexpensive, flexible, and powerful workstation. Fedora Core provides the platform for most of the applications you need to get your work done. Many applications, from desktop productivity suites to Web browsers and multimedia systems, come bundled with Fedora Core. For example, the following list describes just a few major categories of free software available for Linux, along with some examples of popular programs:

- ✔ **Office suites:** OpenOffice provides a complete desktop productivity suite that includes (for openers) an advanced word processor, a spreadsheet, and a presentation editor. The OpenOffice word processor can read and write Microsoft Word, HTML, spreadsheet, and graphics files.



OpenOffice provides its own file format and also reads and writes Microsoft Office 97, Office 2000, Office XP, and Office 2003 files. It can use other formats as well, such as Rich Text Format. Check out the site at www.openoffice.org.

- ✓ **Multimedia players:** Fedora Core packages and installs the open-source Rhythmbox player. You can use Rhythmbox to play downloaded Ogg/Vorbis files or Ogg/Vorbis streams; Ogg/Vorbis is a new open source multimedia format that is discussed in chapter 12. You can also download the excellent open-source MPlayer audio and video player. MPlayer lets you watch DVDs and listen to or view Windows MediaPlayer audio/video streams. You can, alternatively, download a free version of the proprietary RealPlayer, from RealNetworks, to listen to RealAudio streams. The Internet is going nuts with multimedia, and these multimedia players let you get in on the action.
- ✓ **Running Microsoft Windows applications and environments:** You can use Fedora Core to run Windows programs. The WINE (Wine Is Not an Emulator) system facilitates running Windows programs directly under Linux. WINE builds a bridge between the Linux and Windows world giving you the best of both worlds. (The commercial product VMware Workstation builds a different kind of bridge between those worlds by creating a virtual computer *within* your Linux PC. From the software's point of view, this *virtual machine* looks, acts, smells, and performs just like a "real" Windows computer (its normal environment), but it's really just a program running under the Linux operating system.)
- ✓ **Web browsers and e-mail clients:** Fedora Core includes the open-source browser Mozilla to provide a powerful, reliable, and secure browser to surf the Web with. You also get Ximian Evolution personal organizer — which includes an e-mail client, calendar, and other functions like those of Microsoft Outlook — to help with your messaging and organizational needs.

Using Linux Network Tools and Services

Linux computers can provide many powerful and flexible network services. Your Fedora Core 3 DVD comes packed with the tools to provide these services:

- ✓ **Apache Web server:** The open source Apache Web server runs the majority of all Web servers on the Internet. You can start a simple Web server by simply installing the bundled Apache software from this book's companion DVD.

- ✔ **OpenSSH:** The open-source version of Secure Shell (SSH) enables you to communicate securely across the Internet. Secure Shell is much safer than Telnet because Secure Shell encrypts your communication when you log in (even when you log in to other computers), significantly reducing the chance that unauthorized others can discover your passwords and other sensitive information. OpenSSH also provides other authentication and security features, and enables you to copy files securely from machine to machine. With OpenSSH, you can prevent people from listening to your communication.
- ✔ **Internet-access utilities:** Fedora Core provides several configuration utilities that help you connect to the Internet. The utilities help you to configure DSL, cable modems, and plain old telephone modems to connect to the Internet. They also help you to connect to local-area networks (LANs) that use Ethernet adapters.
- ✔ **Firewalls:** A *firewall* is a system that controls access to your private network from any outside network (in this case, the Internet) and controls access from your private network to the outside world. To keep the bad guys out, Fedora Core provides protection by giving you the tools to build your own firewall. Fedora Core is flexible in this regard, and many software packages are available, including the popular and simple-to-use netfilter/iptables filtering software, which is included on this book's companion DVD. Chapter 8 covers using and modifying the default Fedora Core firewall.

This list is just a sample of the network-y things you can do with Fedora Core. We describe many of them in this book.